

creational amenities found at any of its clubs. The 4,232-yard, par-63 North Course was designed to provide a challenging short game of golf at lower cost than the tougher test presented by the 6,545-yard championship South Course.

In addition to the golf courses and driving range, there are facilities for tennis, racquetball, aerobics, and weight training. Members and their guests are also pampered with massages, facials, suntanning, and access to steam rooms, saunas, and whirlpools. Owners of Palm Valley's 1,200 homes and their guests can take advantage of any or all of these facilities based upon a variety of initiation and monthly membership fees.

Yet the most impressive thing about Palm Valley is the oasis-like landscaping of the community and the golf courses. More than 2,200 palms and 900 other specimen trees tower above the grounds loaded with annuals, flowering shrubs, and turf regardless of the season.

Robinson incorporated 21 lakes into the 36 holes of golf. All but five have waterfalls constructed of granite boulders to match the rocky face of the nearby mountains. He brought in consultant Roger Gordon to design the massive irrigation system for the golf courses.

Except for the month of October when one course at a time is closed for overseeding, Palm Valley's turf carpets the rolling desert floor within its perimeter. During the summer season, Tifgreen (T-328) hybrid bermudagrass covers the tees and greens. Common bermuda serves as the ground cover for the fairways, roughs, and clubhouse grounds. From October through May, every square foot of turf is converted to a blend of perennial ryegrasses.

Responsibility for the condition of all Sunrise golf courses since 1981 has been in the hands of Dennis Orsborn, vice president of golf course operations. The graduate of Cal Poly University in Pomona joined Sunrise as its first director of golf course operations when the company was reevaluating its long-term role in owning and managing its golf courses.

It is common for developers to sell golf courses to homeowner associations once their projects have been sold out. When Orsborn arrived, Sunrise was wrapping up construction at Monterey and getting ready to start The Lakes. It still owned and operated Sunrise Country Club and Rancho Las Palmas. The company decided to sell Sunrise Country Club to its association that year. Marriott wanted full ownership of Rancho Las Palmas, so that was arranged.

However, Sunrise wanted to hold on to Monterey Country Club and to begin building the courses at The Lakes and then Palm Valley. The company also hoped to be the exclusive builder for the homes around five championship courses at Landmark's much-touted PGA West in La Quinta. Orsborn's job was to concentrate on the golf courses, in order to preserve the company's country club image in the highly competitive desert.

By 1983, The Lakes course was nearing completion and work had begun on Palm Valley. The Golf Operations Division was growing. For the next four years, Orsborn and his family lived at Palm Valley, where he coordinated planning and construction with Robinson, Gordon, and the contractors. Paul Quill was Orsborn's superintendent of golf course construction until Landmark hired him to set up its own golf operations department. Gary Peterson took



Palm Valley's two golf courses feature 21 lakes.

over for Quill and managed construction of Palm Valley's championship course and the first nine of the executive course.

Golf course developers were taking notice of Sunrise's organizational structure. Carlacio Landscape, Inc., of Placentia, CA hired Peterson to be its director of golf operations. In 1983, Orsborn had hired Collier Miller, a graduate in ornamental horticulture from Cal Poly in San Luis Obispo, as assistant superintendent at Monterey. In three short years, Miller rose through the ranks to become superintendent at Monterey and then superintendent of construction for the second nine at Palm Valley. He is now superintendent of both courses at Palm Valley.

Since Sunrise intended to keep the

courses once the development was completed, Orsborn had to anticipate and control future maintenance costs during construction. Palm Valley's courses were designed to serve the golfers in the community, not professionals on tour. They had to be impressive and challenging to attract members, but they also had to pay their own way down the road. Sunrise wanted to find the point at which quality was not compromised by economy. By doing so, it could make country club living and golf affordable in an area where \$100-plus greens fees are common.

Extravagance is an important part of business around Palm Springs. It plays a large part in attracting buyers of second homes, retirement homes, and resort condominiums. But behind the glamour of the golf courses and the lush, landscaped community grounds, there is a concerted effort to conserve - chiefly water, energy, and



Lakes provide golfers dramatic shadows at dusk.

pesticides.

Robinson, Gordon, and Orsborn were charged with finding ways to conserve where possible. Turf area was reduced by the addition of numerous large bunkers. Palm Valley was fortunate to have two productive wells to supply the lakes and irrigation system. The waterfalls act to aerate water without large losses of water to evaporation. Two of the 21 lakes serve as irrigation reservoirs. The remaining lakes are maintained at appropriate levels through supply lines from the pump station.

Computerized control was considered a must for the thousands of impact rotors at Palm Valley's golf courses. Gordon chose a Rain Bird Maxi III System to permit maximum adjustment of run times either at the central or one of 74 field satellites. The irrigation schedule is altered daily to fit evapotranspiration (ET) rates determined by a local weather station. Stopmatic sprinklers were used generously to prevent low head drainage.

continued on page 22

Palm Valley

continued from page 21

The fairways and roughs were seeded with common bermudagrass to avoid some of the high-maintenance requirements of hybrids. Of the 170 acres under the care of Miller's 22-man crew, only eight acres are planted with hybrid bermuda. Since bermudagrass tolerates salinity and alkaline soils common in the desert, it's not necessary to overwater. Divots can also be repaired with seed as they occur. Each cart on the course carries a mixture of sand, mulch, and seed which golfers are required to use.

Tifgreen was planted only on tees and greens because its aggressiveness, recovery rate, fine texture, dark green color, and low growth habit. Due to the frequent winds and low humidity of the desert, diseases rarely occur. Since the rest of the course is common bermudagrass, the crew can devote more time to the Tifgreen's higher maintenance requirements.

The only disease of importance is Pythium blight, which can develop during overseeding in the fall. Preventative fungicide treatment after overseeding but before germination is all that is needed for the perennial ryegrasses throughout the winter season. Miller also reduces irrigation run times three weeks prior to overseeding to help dry out the course.

The greens are mowed daily at 1/8-inch with Jacobsen triplex greens mowers. For tournaments they are double cut. Clippings are always removed. Pin placements are changed daily. Palm Valley was one of the first courses in the desert to experiment with grooming attachments on its greens mowers. Greens are lightly verticut once or twice a week during the summer and topdressed at least once a month with sand. They are aerified three times a year.

Greens receive an average of one pound of nitrogen per month from a combination of granular and liquid formulations. Iron and micronutrients are applied as needed. In the spring, when irrigation times are increased, Miller's crew will spray with wetting agents or apply them through hose-end proportioners on dry spots. The greens are spot watered as needed from April through July, when temperatures can soar to more than 120 degree F. Gordon included quick-coupler valves near every green and tee and along fairways for hoses for hand watering.

Tees are cut three times each week at 3/8-inch. They are never aerified. Instead, they are verticut to the dirt when the course is closed for overseeding. Tee positions are

changed every day to distribute compaction and wear. "Our tees are large enough to allow for recovery," says Miller, "but we do ask golfers to repair divots with a sand mix."

Fairways are mowed at 1/2-inch three times per week with a Toro 450D. Clippings are not removed. High-traffic areas on fairways may be aerified six times per year, while the rest is cored twice a year. Prior to overseeding, the fairways are verticut heavily and scalped. The roughs are maintained at 1-1/4-inch throughout the year.

Desert heat brings with it the threat of algae in the club's lakes. All but five of the lakes have waterfalls, and those have built-in fountains. "We try not to use chemicals to control algae," explains Miller. "The wind in the early summer promotes wave action and helps a lot. The lakes are also stocked with amur, talapia, blue gill, and



The abundance of water makes golfers forget they are in the desert.

goldfish to keep vegetation from getting out of hand. More superintendents are hiring contractors to take over weed control in their lakes."

Summer play at Palm Valley has increased, as it has on other desert courses. Therefore summer condition of the courses is growing in importance. To use only the water they need after four years of below-average rainfall, members of the Hi-Lo Desert Golf Superintendents Association chipped in to purchase a weather station operated by the College of the Desert in Palm Desert. Miller calls the college every day for an ET rate to adjust his irrigation schedule.

"The water district also recognizes superintendents who conserve water on their courses," adds Miller. "There are probably

more computer-controlled irrigation systems in this region than in other parts of the country. The reason is water conservation, even though the valley has a good supply of water. Many courses are also upgrading their pump stations to conserve energy. We are trying to manage consumption now to prevent any need for rationing in the future."

Palm Valley's success in attracting golfers and controlling maintenance costs is now being duplicated in Chula Vista, CA, at Eastlake Country Club. Sunrise is building and will operate an 18-hole public golf course for the Eastlake Development Company. This Robinson-designed community outside San Diego will eventually include 11,300 homes.

Sunrise plans to begin the first of two country club communities in the desert city of Indian Wells, CA, in 1991. The Heritage



Dennis Orsborn (center) is vice president of Golf Course Operations for Sunrise Company.

Club will feature 680 homes surrounding two Jack Nicklaus signature courses. Indian Ridge Country Club will be a larger development centered on two courses designed by Arnold Palmer.

The ultimate proof that Sunrise is on the right track when it comes to the role of golf in real estate development is its selection by Mitsubishi Estate Company to be part of Sunrise Desert Partners. The limited partnership will develop its own projects in the desert beginning this decade.

Sunrise, and companies like it, have their work cut out for them if the industry expects to develop nearly 4,000 golf courses needed to meet demand by the end of the century. Furthermore, they have to address problems with water, energy and the environment in the process. Home buyers are attracted to country club communities, but in today's world many also want to know that their community is environmentally responsible. Superintendents like Orsborn and Miller, working with consultants like Robinson and Gordon, are trying to find a way to do both. ●

LANDMARK ANNOUNCES TWO-PHASED SALE

Landmark Land Co., Carmel, CA, has announced it will sell a number of its resort properties, including PGA West, La Quinta Golf & Tennis Resort, Mission Hills Country Club, Palm Beach Polo & Country Club, and its golf courses on Kiawah Island, NC, to Barry Hon, a developer based in Irvine, CA.

The sale, worth \$967 million, will take place in two phases to be completed by June 1991. Hon is acquiring the management team in addition to the property, according to Gerald Barton, president and chairman of Landmark. Barton said he does not expect Hon to sell off individual resorts, although he has that option. Landmark will finance a large portion of the sale.

Hon is best known for his 2,743-acre Foothill Ranch development in South Orange County, CA. He also owns property in Oklahoma and Louisiana and has expressed interest in building or managing golf courses in other countries.

BROWNS BREAK GROUND ON TRAINING CENTER

The Cleveland Browns have begun construction of a new training complex in Berea, OH. The new facility will include an office building, indoor training center, and a multi-field outdoor training area. The team previously practiced on the fields at Baldwin Wallace College, located next to the new facility, and Lakeland Community College, east of Cleveland.

HOK Sports Facilities Group of Kansas City, MO, is the architect of the training center. The fields are being constructed under the direction of David Frey, director of properties for the Browns. "We have carefully researched soil mixes and may include interlocking plastic mesh elements," Frey revealed. "We want to construct a field that is right for this climate and will stand up during workouts."

The Browns have also explored the possibility of installing a heating system for the field at Cleveland Municipal Stadium. If voters approve a tax levy this month to build a new baseball stadium in the city, Municipal Stadium will host the Browns, concerts, and special events. The new 40,000-seat open stadium would be home for the Indians.



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Repairing And Rebuilding Sprinkler Heads

A malfunctioning sprinkler head squanders irrigation time, water, and money. Worse yet, it can damage or destroy the very same turf it was designed to save. However, you may not need to throw a head away if it underperforms, wears out, or breaks. Most such sprinklers can be rebuilt or repaired so that they have a whole new service life, performing up to their original specifications for years to come.

Some sprinkler heads may require only cleaning, adjusting, or simple repairs that you can do yourself. You might even be able to rebuild them completely in your own shop. Manufacturers are designing their golf and institutional sprinkler heads today with ease of repair in mind. But if you don't have the time or ability to fix them, you can send them out to a repair facility.

Whether sprinkler heads are made of brass, cast iron, or stainless steel, having them professionally rebuilt can cost as little as one-third the price of a brand-new sprinkler. It costs even less if you can do it yourself. There are repair kits that make this faster and easier than it sounds, and many sprinkler manufacturers provide service manuals.

Whether you send sprinkler heads away to be rebuilt, fix them yourself, or buy rebuilt heads in the first place, certain economic facts do not change: A malfunctioning sprinkler wastes water. A rebuilt sprinkler costs less than a new one. But no sprinkler should be repaired unless necessary. Preventive measures are the most economical of all.

John Lamar, who is a licensed landscape contractor, founded Watley in Oak View, CA. The firm makes two products, the Rise-Up Tool and the Irri-Tool, which he developed to solve problems he himself had encountered in working with the many sprinkler heads available today.

Lamar advises, "When you are considering the repair of a particular sprinkler head, you often need to make the determination of whether the head is actually broken, out of adjustment, or just needs to be flushed and cleaned. More often than not, a good cleaning and adjustment will solve most problems."

"More often than not, a good cleaning and adjustment will solve most problems."

He points out, "With the recent concern about efficient water use, sprinkler head manufacturers have introduced several high-performance, low-precipitation-rate, low-pressure, single-stream sprinkler heads, offering the user a selection of nozzles to fit each individual situation. These heads offer enormous flexibility, but in return they demand fine tuning and clean water."

Cleaning, flushing, and adjusting sprinkler heads can be performed in the field quickly, if that is all that is needed, by removing the nozzle and flushing the head. Watley has just introduced a single, multifaceted tool called the Irri-Tool, which is designed to assist in the installation, maintenance, and repair of irrigation systems.

Lamar says he developed the tool because many of these systems are a hybrid of sprinkler heads and drip systems made by several manufacturers, requiring many different tools for adjustment and repair. This made it necessary to have a variety of separate tools handy, until he came up with

his new multi-purpose product.

The Irri-Tool can lift and adjust most low-precipitation-rate and multiple-nozzle sprinkler heads, such as the Hunter series, Rain Bird R-50, and Toro Super 700. It also includes three different screwdrivers, a nozzle cleaner, a drip sprinkler cleaner, and a drip tubing punch.

The Irri-Tool was a natural outgrowth of Watley's first product, the Rise-Up Tool, which Lamar originally invented to help him solve some problems he had encountered as a contractor while installing, adjusting, and repairing sprinkler heads.

How do you decide whether a malfunctioning sprinkler head needs to be rebuilt or can be put in good working order through the simple adjustments, servicing, and minor repairs described above? The sprinkler head manufacturers can help you.

"Troubleshooting Automatic Sprinkler Systems," published by The Toro Company Irrigation Division in Riverside, CA, includes a number of general problem-solving tips for sprinkler heads. The guide notes, "Because of the great diversity of sprinklers, our troubleshooting methodology will only consider problems common to all sprinklers. Check with your distributor for service information on the particular sprinklers on your project." Here are Toro's time- and money-saving pointers:

*Sprinklers should be operated and visually checked. Many dollars are lost each year, and a terrible amount of water is wasted, because sprinklers aren't serviced on a regular basis.

*One of the most common problems is a sprinkler whose nozzle or rotor is clogged with debris. These sprinklers need to be disassembled, usually from the top, cleaned and reassembled. Most sprinklers either come with, or have available, plastic nozzle screens. Sometimes these do not get installed. Having them on hand is helpful so you can install them when sprinkler disassembly is necessary. If clogged nozzles are a recurring problem, a filter installed near the point of connection will prevent debris from reaching the sprinklers and save many hours of labor.

*Too much pressure or not enough pressure at the sprinkler are also common sprinkler problems. Each type of sprinkler is designed to operate within a range of pressures (detailed in the manufacturer's catalog). Too much pressure at the nozzle causes misting, which reduces the radius of the sprinkler, makes the pattern prone to wind disturbance, and distorts the

sprinkler's distribution.

*A valve with flow control can be adjusted to dissipate constant excess pressure. A pressure-regulating valve will maintain a constant downstream pressure, even with fluctuating high pressures.

*If sprinklers are overspaced, or the pipe undersized, there aren't any simple solutions. You might consider a booster pump to bring the pressure up to the high end of the nozzle specifications as a means of improving performance. The system must be analyzed prior to adding a pump, to ensure that damage won't result to any of the system's components.

Now we move to a specific guide for one type of head, the impact sprinkler. Buckner, Rain Bird, and Weather-matic are among companies who have prepared repair manuals for impact heads. Buckner also has a manual for its cam drive heads, another long lasting type of head.

The following list of maintenance, cleaning and troubleshooting tips is from the "Rain Bird General Maintenance Manual for Irrigation System Equipment," which was compiled, written and edited by Carlyle O. Regele and Donald W. Parker. They observe, "Through many years of experience, we have found that conditions which can interfere with the proper operation of impact sprinklers are oil, low water pressure, foreign materials in the irrigation water, and excessive damage or wear to sprinkler parts."

Any foreign object that obstructs the flow through the nozzle will interfere with the operation of the oscillator arm. Small rocks and pipe scale are common in some water systems. When this material is too large to pass through the orifice of the nozzle, it will completely or partially plug the orifice and result in a malfunction of the sprinkler rotation. The rotation of the sprinkler is dependent upon the action of the arm, which, in turn, is dependent upon the pressure and integrity of the water stream leaving the nozzle.

It is not recommended to push a wire or rod into a nozzle orifice to unclog it. Should the wall of the nozzle orifice become scarred, or a vane become damaged, it may create yet another problem with the sprinkler's performance.

For this same reason, the orifice of a nozzle should never be drilled out to a larger size. A drill bit will scar the sides of the orifice and cause turbulence in the stream of water as it passes through the nozzle. This turbulence results in a distorted stream, which may reduce the driv-

ing force and the rotation of the sprinkler as well as adversely affect the distribution pattern.

A partially plugged, or badly worn, or otherwise damaged nozzle can be identified by the condition of the stream at the point where it leaves the nozzle orifice. The stream will be distorted or have a fuzzy appearance. A good stream will be tight and very smooth as it leaves the nozzle orifice, imparting maximum force to the arm.

Sprinkler heads can be rebuilt for approximately one-third the cost of new ones.

The increasing use of gear-drive heads, such as Hunter and Toro, requires a different repair tactic. The working parts of these heads are enclosed in a case. Instead of opening the case for repairs, the entire module is replaced with relative ease. The part may be more expensive overall, but the labor and skill required is less. Rain Bird is also using the concept for its R-70 series of sprinklers.

If you have now determined that your sprinkler does need repair, check out the options available to you, beginning with sending your sprinkler heads away to be rebuilt.

"The cost of a sprinkler nowadays is such that rebuilding becomes very inexpensive as a means of replacement," says Dave Tanner, co-owner of American Irrigation Repair & Supply Co., Inc., in Fremont, CA. Getting down to dollars-and-cents comparisons, Tanner says, "Some brass and steel sprinklers, such as Rain Bird, Buckner, or Thompson impact or gear drives, are very valuable and can run from \$120 to \$180 new. We can rebuild them for approximately one-third of that and guarantee them almost as long as the original manufacturer. We have extended our warranty to three years. It used to be two."

First the sprinklers are completely disassembled. Then the steel parts are put into a machine called the Wheelabrator to be cleaned automatically. "It's like an airless sandblaster," Tanner explains, "but it uses steel shot. It tumbles the parts in the Wheelabrator while shooting the shot down. This cleans the steel parts, such as the housing. The brass parts are cleaned in a glass-bead sandblaster."

The clean parts are then inspected for excessive wear and replaced if necessary. Missing or broken parts are also replaced. In selecting replacements, says Tanner, they try to utilize used parts whenever possible, such as an arm or a head assembly. These parts are taken from their large stock of returned or salvaged parts. If necessary, new parts are purchased.

All the new washers and springs are then installed, and the sprinklers are reassembled. Steel housings are coated with a rust inhibitor and painted with an acrylic enamel sealer. (Brass housings do not require painting.) Then the sprinkler assemblies are installed into the housing. The rebuilt sprinklers are water tested at the customer's pressure level on a machine that was custom-made by the company for this purpose.

Rebuilding sprinkler heads is "not something that can be handled by just simple labor," says Tanner. "There's an actual creative component, with a lot of thinking involved."

A malfunctioning sprinkler head should always be promptly repaired or replaced, Tanner warns. "A broken turf sprinkler is like having an open one-inch valve. It can lose literally hundreds of gallons a minute if it's free-flowing water," he explains.

Arco Parts, founded in 1981 by Bill Hayes, Jr., in Pleasanton, CA, also repairs and rebuilds a wide assortment of institutional sprinkler heads. The company also offers new replacement parts and repair kits for local irrigation supply houses. It has helped simplify and speed up the parts finding process by taking some of the load off of manufacturers.

Eckhart-Ross Irrigation in Manteca, CA, also rebuilds sprinkler heads. Gary Eckhart and Joe Ross are the co-owners. "Most sprinklers can be repaired indefinitely," says Eckhart. "Housings do wear out eventually, but I would discard the old one and supply a good housing."

Another repair option for do-it-yourselfers is available from certain companies. It is the "universal housing" which can replace either metal or plastic sprinkler head housings on certain Rain Bird and Weather-matic models.

As you have seen, sprinkler head repair or rebuilding can save a great deal of money: up to 70 percent when compared to the cost of buying a new one. And that doesn't include what a renovated sprinkler head can do for your turf. Unless you want to upgrade your present heads, this is an appealing alternative that deserves your full consideration. ☼

CHALKBOARD

TIPS FROM THE PROS

RANCHO SANTA FE LINKS PAST AND PRESENT

Heavy earth-moving and grading machines were several hundred years away from invention when golf was first played in the 15th and 16th centuries on the rolling, sandy linksland of Scotland, so the early golfers left course design to Mother Nature herself. On an early links course, the sequence of holes was dictated by the natural environment. Hazards, such as bunkers and roughs, were already "designed in." Nature took care of irrigation.

Unfortunately for the golf course architects, designers, and superintendents of today, Nature's irrigation schedule is less than predictable. In fact, many areas of the country are battling a drought.

California has been particularly hard-hit by four consecutive years of below-average rainfall. As it enters the summer of 1990, the "Golden" state is in danger of turning brown. Water conservation, which has always been a wise idea, is becoming imperative.

Conserving this precious resource was at the heart of the design and construction of Rancho Santa Fe Farms Golf Club, located around an upscale residential housing development in the rolling hills just north of San Diego, CA. Called "The Farms," this private, 18-hole links-style course was designed by Pete and Perry Dye of Dye Designs to take advantage of the natural terrain and foliage of that semi-arid region. What's more, this natural approach to course layout was augmented with state-of-the-art hydroseeding and hydrostolonization of the course's greens, fairways, and roughs by Hydro-Plant of San Diego.

Founded 11 years ago by Gary Weems, Hydro-Plant has planted courses in areas such as Las Vegas, Palm Springs, and Hawaii. The firm also works on freeway, development, erosion control, and other projects. Weems, who serves as company president, has more than 20 years of experience in the hydroseeding and hydrostolonization industry.

In the summer of 1988, Hydro-Plant was



Nine different drought-tolerant native grasses were hydroseeded in the rough.

contracted by Ronnie Holden, The Farms superintendent at that time, to hydrostolonize one-third of the course's fairways and to hydroseed its roughs, in areas that were inaccessible to mechanical seeding and stolonizing equipment. Holden was quickly impressed with the establishment time and quality on the fairways, and soon Hydro-Plant had taken over the hydrostolonization of all the fairways, as well as the greens. The fairways were established with Tifgreen hybrid bermuda and are not overseeded during their short dormancy period. The greens were hydroseeded with Penncross bentgrass.

"Hydrostolonization was more successful because of the mulch," Weems explains. "It retained moisture, and that really is the critical factor for the newly planted stolons. We used Spray Mulch, from Pacific Wood Fibers, which is genuine wood fiber. I'm a strong advocate of using wood fibers, because they interweave and form a 'mat.'"

To hold the slurry together, which included a 16-20-0 fertilizer at 300 pounds per acre, Hydro-Plant used M-Binder tackifier from Ecology Controls.

Although mechanical planting had resulted in faster rooting, Weems says, many of the stolons broadcast onto the soil were not covered by the machine's disk and died. With hydrostolonizing, rooting took longer. But fewer stolons dried out because of the mulch, more of them rooted, and



Hydro-Plant uses Bowie unit to hydrostolonize fairways with Tifgreen hybrid bermudagrass.

establishment was quicker. Weems' observations were supported by earlier tests conducted by Hydro-Plant and Pacific Sod, which supplied the stolons for The Farms.

To hydrostolonize the fairways, Hydro-Plant used a Bowie 3,000-gallon Hydromulcher, which Weems modified with a positive displacement pump. "I added a positive displacement pump to the unit's centrifugal pump for hydrostolonization, because it helps push the material through the pump without slippage. Stolons tend to become heavier and more 'solid' in the slurry," he explains. "We also use the same hydromulcher-and-pump combination when we're hydroseeding and we have 600 or 700 feet of hose for the material to pass through."

While Hydro-Plant did not perform the ground preparation prior to planting, its importance is not lost on Weems. "Every situation and soil type is different," he says. "Hydroseeding and hydrostolonization are

only vehicles to get seed and stolons on the ground. They do not make soil preparation unnecessary."

Hydroseeding was performed on the course's 50 acres of roughs, using a combination of nine drought-tolerant grass seeds supplied by S & S Seed of Santa Barbara, CA. The seed mix was created by Jerry Fischer of Stone-Fischer and Associates, a landscape architecture, urban design, and master planning firm in San Diego, which also worked on The Farm's clubhouse landscaping. The company is currently working on Heritage Country Club, not far from Rancho Santa Fe.

"We were contracted by Dye Designs to create a seed mix for the rough areas of The Farms because they weren't familiar with the horticulture of this area," says Fischer. "They gave us pictures of what they wanted, and we selected the grasses."

Among those included in the mix were Blando Brome, Zorro fescue, weeping lovegrass, and fountain grass and Buffalograss. The roughs require very little upkeep aside from periodic removal of their dead undergrowth.

"I've never seen a seed mix put together like that," says Weems. "When Jerry called me to discuss it, I thought he was crazy! But they got the result Dye wanted."

However, Fischer's selection had to meet with more than Dye's approval. The drought-tolerant seed mix had to be approved by the San Diego County Planning Office. "Almost everything in a development has to go through some form of an approval process," Fischer explains. "We spent at least one-third of our time getting county approval. Developers spend months, even years, going through the approval process. It's a very long, somewhat harrowing experience."

Tommy Jacobs, The Farms club pro, is also familiar with the development approval process. "We have a small lake on the course, and we had to work closely with the California Department of Fish and Game to ensure its preservation," he explains. "By expanding the original lake and creating two more we are able to capture 98 percent of the water runoff on the course."

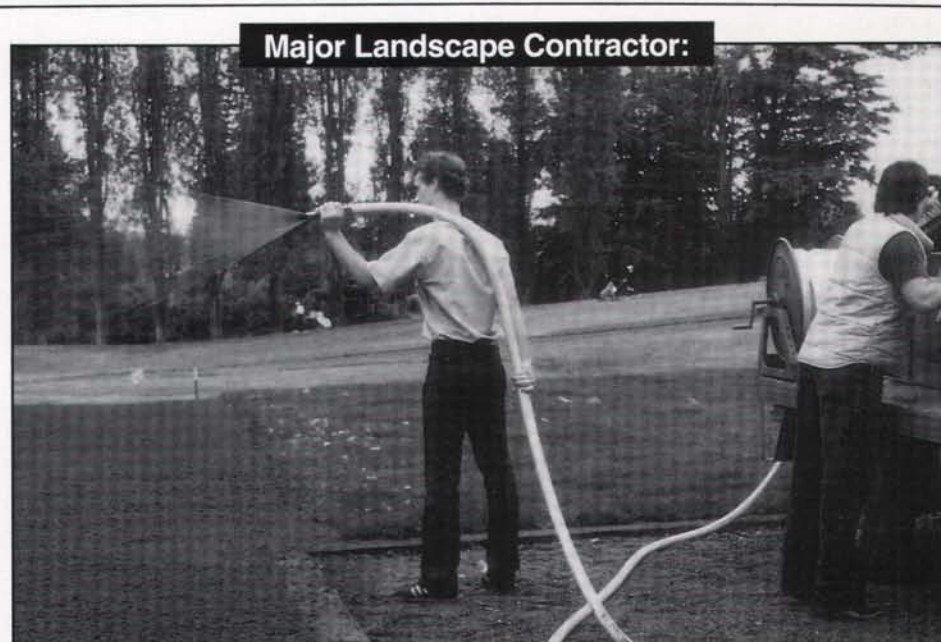
To complement this water-efficient course, a Toro 8000 irrigation system was chosen. The system's computer-driven sensors automatically monitor the environmental moisture content at several stations around the course. This allows for pinpoint adjustments and eliminates overwatering.

Rancho Santa Fe Farms Golf Club is a

Rancho Santa Fe Farms is a perfect example of what can evolve from blending the new with the old to solve an existing problem.

perfect example of what can evolve from blending the new with the old to solve an existing problem. By linking such relatively recent technologies as hydrostolonization of drought-tolerant plants and computerized irrigation with the time-honored links design concept, a course has been created for the conservation-minded present and future.

"I think you're going to see a lot more drought-tolerant plants used in hydroseeding and hydrostolonization," says Weems. "We're working with people on new things all the time."



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ROOKIES

PRODUCT UPDATE

FLAIL MOWER



The RHD88 flail mower has an 88-inch cutting width, and is equipped with a 90-hp intermittent (and 60-hp continuous) gearbox, category-four driveline, and a 4-1/2-inch cutter shaft. Features include a unitized drive transmission, forged steel gears and shafts, sealed gearbox, shielded drive shaft with slip clutch, and a rigid three-point-hitch frame harness.

Free-swinging, self-cleaning knives provide the unit with smooth, even cutting action. This vertical flail action, combined with a heavy housing designed to deflect debris downward, provides safe and efficient mowing.

SERVIS-RHINO

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PROTECTION SYSTEM



Face, head, and hearing protection units from Elvex Corp. will work in conjunction with each other without interference.

The products feature heavy-duty performance and ergonomic designs that comply with OSHA and ANSI requirements, and provide dielectric capabilities. Hearing protection products are available with noise reduction ratings up to 27dB. Face protection is available for chemical splash, impact resistance, heat deflection, and forestry applications.

ELVEX CORP.

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KENTUCKY BLUEGRASS SEED

Chateau Kentucky bluegrass seed is available through Fine Lawn Research, Inc. When mature, the variety features a brilliant emerald-green color. Its semi-dwarf growth habit and low growing point reduce mowing frequency.

Because of its long roots, Chateau is highly resistant to summer stress. Under drought conditions, it maintains a deep-green color. Its vigorous growth characteristics make it ideal for high-use areas.

FINE LAWN RESEARCH, INC.

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MULCH SPREADER

Controls for the newly designed Finn B260 Straw and Hay Mulch Spreader are within reach of the operator's seat. Other advancements include an improved discharge tube design, an all-hydraulic speed control on the power feed system, and a lower profile and center of gravity for added stability.

FINN CORP.

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SEED MIXTURES

Garfield Williamson, Inc., has introduced its Commercial Line of special mixture turf seeds. "Our new Commercial Line is made up of the seven most requested special seed mixtures professionals ask us for: Deluxe Sun & Shade, Contractors Turf, Deluxe Shade, Athletic Turf, Landscape Turf, Utility Turf, and Triple Rye," says Dave Jackson, sales manager for the firm.

The company produces these mixtures in large quantities, so high-volume purchasers do not have to wait for their special orders to be processed, mixed, bagged, and shipped. Truckload quantities can be shipped almost immediately.

All of the Commercial Line turf seed mixtures are available in 25-lb. polypropylene bags. Deluxe Sun & Shade, Contractors Turf, and Landscape Turf are also available in 50-lb. polypropylene bags.

GARFIELD WILLIAMSON, INC.

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