

Design, Maintenance: A Crucial Marriage

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Golf Course News

Part 2 of 2

Last month I focused on the physical factors of design and their relationship to maintenance as well as the professional relationship between designer and superintendent. Now I will address the single most important specification related to maintenance: the turfgrasses to be used. No other specification under the control of the golf course architect will dictate the overall maintenance practices, or playing conditions more than the selection of turfgrasses; the choices are many.

A few years ago this was not the case and routine and standard specifications were acceptable. But in view of the enormous advances in turfgrass breeding and selection over the past few years, this is not the best practice. In fact, I believe that each individual golf course site should be studied for its inherent climatic and edaphic qualities, along with local environmental restrictions and attitudes, before turfgrasses are selected and specified.

Ideally, a probable maintenance regime should also be defined, with any budgetary limitations, before turfgrasses are selected. Then knowing specific site factors (drainage, soil fertility and texture, quantity and quality of irrigation water, proposed pesticide schedules, mowing equipment and height, etc.); climatic factors (wind, normal rainfall patterns, air drainage and length of playing season), along with edaphic factors (soil chemistry, soil biology, and physical limitations); social factors, (EPA or conservation restriction, probable total play, country club or public golf course, existing competition, etc.),

and budget factors, only then should turfgrasses be selected.

Let me give you some considerations in making this selection. Few golfers would deny that the finest playing surface in northern latitudes is bentgrass and there are many to choose from. It gives you the best tee, fairway and putting surface, but in the transition and Southern areas it is less practical because of summer heat stress.

Many new bentgrasses show good potential, but they are still susceptible to many insect and disease problems, require similar fertility, water management, cultural practices, and for a much longer intense period.

Improved bluegrasses, on the other hand, may not provide the beautiful color contrast or playing conditions on tees and fairways compared to bent, but they have better heat tolerance and often require less pesticides, fertility and water, and present fewer cultural problems.

The difference in maintenance budgets between bent and blue is difficult to estimate, but I believe it to be in the \$80,000 range a year on a good site. Naturally, the source of irrigation water — its quality and quantity — can be a major factor in this decision.

Similar improvements are being made to warm-season grasses, particularly in putting green turfs, with improved winter hardiness. So the distinction of where to use warm- and cool-season grasses has become blurred, which makes careful decision-making critical. Both the designer and superintendent should do exhaustive research before select-

ing not only the turf type, but also the cultivar. Many are interested in non-traditional golf course grasses like buffalo, bialia and paspalum species, but none compare in playing quality to finer-blade turf types.

The third alternative would be a fine fescue mix which can provide acceptable playing qualities compared to bent or blue, but require even less water, minimal fertilization, infrequent mowing, and almost no pesticides. This family of grasses (chewings, creeping red, slender creeping red, sheep and hard) has been extensively improved over the past few years and with proper selection can fit most climates and uses.

One might consider the fine fescues blended with bentgrass or blue grass to provide the desirable playing conditions for a particular area or site.

I am not a big fan of turf-type perennial ryegrass, mainly because of its playing qualities and patchiness. Although I have played some wonderful ryegrass fairways, I feel the ball settles too deeply into the turf, it doesn't heal quickly during stress periods, and extremes in temperatures can cause major turf loss. This is my personal bias, and I certainly would be willing to compromise that view to a superintendent who felt strongly about ryegrass on a particular site.

The point is that several choices and combinations of choices and combinations of choices could be made concerning turfgrasses, all of which will directly impact maintenance.

The maintenance budget may range from perhaps a low of \$250,000

(Continued on Page 13)

Design—

(Continued from Page 11)

to an excess of \$1 million, depending on which turfgrass blend is selected for a particular site.

Once the turf variety or varieties is chosen, next comes the planting method. Some turfgrasses such as zoysia, I believe, should only be sodded and approximately budgeted for, while other grasses like the Bermudas can establish quickly from sprigs. Sprigging rates can be as low as 350 bushels per acre to as high as 1,200 bushels per acre, depending upon planting time, climatic conditions and cultivar.

Sodding Bermuda is not unheard of, especially if the course will be planted at the end of the most favorable growing season. In fact, in Palm Desert it is not uncommon to establish the winter overseeding in Bermuda before it is wet and moved as dormant sod. Cost is a big factor in determining what method of planting warm-season grasses will be used.

Seeding of cool-season grasses also should be done to hit the most favorable time for establishment, typically late summer to early fall. I prefer using a drop seeder with compacting capability to assure good seed/soil contact, with the seed applied in one-half rates in two directions. Blending seed before planting works fine even with such diverse seed size as a creeping bentgrass mixed with a fescue, with no observable aggregation in the planted areas.

I also prefer to mulch seeded areas with either fiber or a straw mulch at a rate where you can look down and see 50 percent mulch and 50 percent bare soil beneath it. This rate will ensure maximum benefit from sunlight and air and suitable protection from wind and water erosion.

Again, the designer and superintendent should talk about every detail of the planting specification.

Even grow-in procedures should be mutually agreed upon. If the contractor is responsible for more than planting the turf, a detailed maintenance specification would be appropriate. Usually the superintendent prefers to assume this responsibility rather

than worry about if the contractor is following procedures to get the quickest maturation.

Sodding the entire course, or at least sodding all bluegrass (or ryegrass or fescue) areas, is becoming more common. The reason is that sodding answers many environmental concerns, reduces the grow-in period from months to weeks, produces a better finished product, and often makes the best economic sense to the owners. Large-scale sodding of fast-germinating varieties like bentgrass is much harder to justify because of cost, but sodding tee or green surfaces can be reasonable.

The above process takes time, study and understanding if properly done. However, a wrong choice can be very costly and a right choice can make a golf course spectacular. Therefore, the designer should be very deliberate and methodical in choosing turfgrass seed blends, consulting with superintendents, breeders, researchers, suppliers and users.

My point is that there is a strong relationship between design and maintenance with many influencing factors. It makes the proper choices easier when one remembers that maintenance is more important than

design.

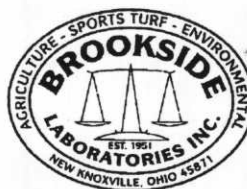
I don't believe there will ever be a supergrass that works on every site that provides awesome playing conditions with a minimum amount of maintenance. We are certainly closer than 20 or 30 years ago, but such a breakthrough is still a long way off. So the alternative is the old-fashioned way of designer and superintendent working together to develop specifications and design concepts that support the maintenance objective of each particular site. If the owner is reluctant to hire a superintendent early in the development process, he should retain the services of an agronomic consultant to assist the designer.

Legend has it that when Moses brought down the Ten Commandments, there were actually 11. The last one was lost and never made it into the Bible, but designers and superintendents concerned about maintenance should know it well. It reads: "As ye sow, so shall ye mow," which means that what you plant will determine how you must care for it. Choose wisely.

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