



BY JOHN HOLMES



Scenic view of Kalhaar Blues & Greens by Nicklaus Design in Ahmedabad with great turf conditions for golfers and visual beauty for the home owners.

“TURFGRASS IS A MEASURE OF THE COMPREHENSIVE QUALITY OF THE PROJECT”

THE MOST IMMEDIATELY VISIBLE components of any golf course are the design and the turfgrass. The latter represents the packaging of the product and has the ability to bring the architect’s vision into existence. Not only does the turfgrass create the first impression, its quality and condition can have a lasting impact on the reputation of the course as well.

GOLFER’S PERSPECTIVE

When teeing up, most golfers probably

give little thought to the turfgrass. However, the aesthetics and the playability characteristics of the turf play a significant role in the golfing experience. At its best, the turf’s color, texture and health create a playing arena unlike that available in any other sport.

Beyond the visual effects, turf also impacts play. The tensile strength of the turf affects ball position. Strong, upright leaf blades elevate the ball to a favorable striking position. On the contrary,

weaker, prostrate leaf blades increase difficulty by allowing the ball to become imbedded in the turf. The density of the turfgrass in the rough and the height of cut can add challenge as well. Green speed is determined by leaf structure and soil firmness with newer ultra dwarf Bermuda grasses offering a much firmer and faster surface. The strength of the turfgrass variety, root structure, and growth rate all affect turf recovery from traffic and divots. Modern turf varieties, bred specifically for sports, rebound from injury and traffic much quicker than local native grass varieties.

Whether playing at a professional, amateur or beginner level, golfers can—in part—attribute the results on the scorecard and the day’s enjoyment to the variety and quality of the turf.

DEVELOPER’S PERSPECTIVE

Realizing that the turfgrass is vitally linked to the golfing experience, well informed developers understand the selection of the turf is of major importance. Developers begin a property with a purpose in mind—resort locale, exclusive membership club, championship tournament site, high volume public facility, or some combination thereof—and make decisions keeping these factors in mind. An appropriate architect is chosen to use his or her unique talents to turn the developer’s purpose into a golf course vision. To continue the process of fulfilling the developer’s purpose and realizing the architect’s vision, the selection of turfgrass is a deliberate and goal-oriented task, requiring the same care and creativity that goes into planning and design.

Turfgrass represents a minimal investment for the overall development, but contributes to the project’s success in a major way. As new, higher quality golf courses are being built throughout India, the expectations from existing golf courses are rising as well. Turfgrass

A FULL MENU OF VARIETIES

The cultivation of specialized turfgrasses for golf courses is almost as old as the sport itself. In the last fifty years, universities have taken up the charge with vigor, cultivating ever-improving varieties of grasses that are heartier, more disease- and insect-resistant, salt tolerant and less water dependent. The choices abound, giving a full menu of turfgrass varieties to meet the selection requirements of golf courses around the globe. Below are descriptions of some of the most popular golf course turfgrass varieties. Within each variety, multiple brand options exist.

POPULAR WARM SEASON TURFGRASSES FOR GOLF COURSES

- **BERMUDA GRASS:** Hearty, wear tolerant, disease tolerant, upright growth habit. Used on tees, fairways, roughs and greens. New ultra dwarf Bermuda grasses are specifically cultivated for greens with fine leaf blades, extra density, dark color and deep roots.
- **BUFFALO GRASS:** Drought tolerant, dense turf stand; used for roughs.
- **SEASHORE PASPALUM:** Salt tolerant, shade tolerant, dark green color. Used on tees, fairways, roughs, and greens.
- **ZOYSIA:** Drought resistant, shade tolerant,

heat tolerant. Used on fairways, tees and greens.

POPULAR COOL SEASON TURFGRASSES FOR GOLF COURSES

- **BENTGRASS:** Soft leaf blade, upright growth habit. Used on fairways and greens.
- **BLUEGRASS:** Thick leaf blade with deep root system, heat and cold tolerant, upright growth habit. Used for roughs and fairways.
- **FESCUE:** Wider, thicker leaf blade, wear tolerant, heat tolerant. Used for roughs.
- **PERENNIAL RYEGRASS:** Dark green color, upright growth habit. Used in cool season areas for fairways, tees and roughs.



A view of the grass at a putting green at the Kalhaar Blues & Greens golf course.

selection for renovation work carries the same significant weight as it does for new developments. The turfgrass, almost as much as design, is a measure of the comprehensive quality of the project.

THE SCIENCE AND CULTURE OF TURFGRASS SELECTION

With turfgrass, the “one size fits all” approach is a guaranteed formula for failure. Saying that a particular turf variety is the solution for a country or region or type of golf course development ignores the intricacies of turfgrass science, maintenance and culture. Multiple components need to be considered to arrive at the optimum turfgrass for each individual project.

Weather and climate are good places to begin. Average temperature determines the most basic selection of whether to choose cool or warm season grasses such as bentgrass or Bermuda grass. Transition zones, where a wide range of yearly temperature blurs the line between cool and warm season, can complicate the choice. In these areas, heat tolerant cool



A view of the Kalhaar Blues & Greens driving range.

season grasses and cold tolerant warm season grasses can minimize the need for special maintenance practices during the extremes of summer and winter. In India, with some exceptions depending on altitude, areas between New Delhi and Ahmedabad fall into the transition zone and will require more care when choosing between cool and warm season turf varieties.

Other weather considerations beyond temperature include the amount and patterns of rainfall, cloud coverage, humidity and length and severity of winter frosts or summer heat. In the region of New Delhi, a golf course can be expected to endure summer temperatures of 50 degrees Celsius and winter temperatures falling below freezing; three months of monsoons and nine months of virtually no rain. A turfgrass with exceptional heat tolerance, cold tolerance and a deep root system is required.

The water quality and availability is another component when selecting turfgrass. Is the irrigation source fresh or brackish? Will water limitations be a consideration? Does salt content or high nutrients in the water come into play? For courses where effluent water is the irrigation source, paspalums are most effective, but may not always be the solution when other components are considered.

Soil conditions are as important as

water quality, but are sometimes easier to mitigate. Sand content in the soil affects drainage and moisture retention. Nutrients and toxicity affect turfgrass growth. Knowing the exact chemistry of the soil provides selection criteria for the turfgrass decision and guides the team in making the necessary soil amendments.

Maintenance capabilities are a crucial factor. Different turfgrass varieties, even if matched accordingly to weather, water, and soil conditions, have very specific maintenance requirements, some much more involved and labor intensive than others. The training level of maintenance personnel, the quality and extent of maintenance equipment, and the maintenance budget should all be considered in turfgrass selection.

As mentioned earlier, meeting the project's purpose and the architect's vision are the overall measures of success. Turfgrass selection must keep these goals in mind. How many rounds of play are expected monthly? What will be the members' or guests' expectations? Will the course be expected to perform to championship standards? What is the architect's vision in terms of texture, color, play area transitions and challenge?

Finally, but certainly not least in importance, are environmental considerations. A turfgrass that performs well in one region of the world or within the scope of

one project's parameters, will not necessarily perform well somewhere else. Turf establishment and maintenance should be responsible and sustainable. If the preferred turfgrass will only thrive and meet expectations with unreasonable amounts of input (of water, fertilizers, pesticides and maintenance expense), then that turfgrass cannot be considered as a viable choice.

Different turfgrass varieties are capable of meeting certain requirements and conversely, unable to meet others. A comprehensive and educated evaluation of all of the components is necessary. Given the impact and importance of the decision, the exercise is definitely worth the effort.

MAINTENANCE—PRESERVING THE DEVELOPER'S INVESTMENT AND MAXIMIZING THE GOLFER'S EXPERIENCE

The old advice to have a plan and work the plan applies to turfgrass. From grow-in and establishment through maturity, turfgrass maintenance must be a planned endeavor. Selecting the right grass is crucial, but planning and carrying out its long-term maintenance is equally important.

Many developers add a consulting agronomist to the team during the design phase. These professionals can save the developer money in the long run by providing expertise in the selection of not only the best turfgrass but also construction materials that support the long-term success of the turf and design such as sand, irrigation systems and maintenance equipment. The consulting agronomist also provides support in developing the maintenance plan and supplementing the training of the maintenance professionals. ♣

JOHN HOLMES has over 25 years of experience in the turfgrass industry as a superintendent, golf course builder, and now as the President of the global turfgrass distribution company Atlas Turf International Limited. Holmes has participated in over 300 golf course projects in over 45 countries, including BPGC, DLF Golf and Country Club, Kalhaar Blues and Greens and some upcoming projects in Bangalore and Vizag.