

# GOLF IN HARMONY WITH THE LAND

## NOTES ON ECONOMICAL DESIGN, CONSTRUCTION & MAINTENANCE

by Mike Nuzzo

Golf began over 400 years ago on barren Scottish links land that was near the sea, drained well and was suitable only for fine turf grasses. Today, that countryside is abundant with splendid golf courses. They are enthralling to play and connect with the native dunes land alluringly and amusingly. There have been many celebrated courses built since in many diverse environments.

In America, the 1910s-1930s were a prolific period of great golf architecture termed the "golden age." Why this period of time? It was difficult and expensive to fight rather than work with the land. There were simpler directives like "build us a good golf course that we will enjoy playing." The architect also spent more time on site directing construction vs. overseeing the construction.

What makes a great golf course? There are almost as many ways to judge as to play a golf course. Opinions can be weighed on variety, memorability, maintenance, sustainability, difficulty, beauty, profitability and fairness, and some like to walk off the 18th green and gauge their desire to walk back to the first tee and play again. A great course requires creative and imaginative play with a variety of indi-

The selection of the golf property is instrumental to the quality of the golf course. Like the original links land in Scotland, properties with interesting natural features and modest elevation changes are ideal. Site selection impacts water, utilities, access roads, earth moving, soil quality, environmental concerns, climate and source of players.

### The Architect's Role

A skilled golf course architect will prove invaluable when assessing the land's potential for a fine golf course, as well as infrastructure, construction and maintenance. Some of the best modern courses have been constructed for considerably less than average costs due to their efficient use of the land, which should be the goal for a seasoned architect who thoroughly learns about the property.

Thorough site surveys and environmental analyses with a special emphasis on archaeological and historical assessments are next. When the land is narrowed down or selected, a detailed aerial map with topographic contours is created. Utilizing the existing characteristics of the site can help save natural resources, provide efficient maintenance, and reduce permitting and site-development costs. It also helps protect the habitat for wildlife and plant species as part of a managed ecosystem, and is respectful of adjacent land.

A routing plan is a map of the course and is the next step. It is the structure or the bones, and it must be superb for an enduring course. Working with a large canvas of land can have benefits, but it must ensure that the holes are continuous in theme and proximity. Varying regions of the course should be blended or transitioned together. It will often take much iteration to find an ideal routing that will use the natural features and vegetation for strategy and hazards, and also incorporate distant views. This will create more interesting holes and a unique course.

### The Construction Process

While proceeding with approvals, start to develop construction documents. There are many examples of great courses being built through the assistance of detailed plans as well as very simplified plans. Detailed construction drawings can be drawn by hand or with the assistance of a computer. The greatest benefit of whichever method chosen is that the line of communication between the designer and shaper be as efficient as possible; and direct communication is often best.

Items that significantly impact construction price are earth movement, clearing, excavation, irrigated acreage, imported materials, labor and housing rates, and pipe and wire prices. Caution: Without proper team selection, unneeded costly change orders can occur.

Now the biggest impact is the planned opening date. Due to the seasonal nature of planting turfgrass, if a window is missed it can have a significant impact on the bottom line. It is almost always the case that a golf contractor is not given enough time to allow for the most efficient schedule. Allowing enough time can pay large dividends of efficiency and quality. When choosing a construction team,

find out if and how schedule will impact costs and planning. As construction progresses, the ultimate character of the course develops with a hands-on approach. The finishing stages of a golf course are most critical to the final quality, and tie all the shaping details in with the surrounding environment. This is where details of grass preparation, drainage and strategy are made "just right."

### Ecological Maintenance of the Course

Maintenance is planned for from the onset, with grass selection and water management impacting design. The design should work with a targeted maintenance budget. After, or even before, the selection of a contractor, it is highly recommended to bring a qualified superintendent to the team. This person can be instrumental in construction management and maintenance facility design, and should be involved in the irrigation design and installation. Maintenance also needs to be about sustainability — grasses adaptive to the local environment and reasonable maintenance standards with a long-term focus on protecting the land and its resources. A benefit of patience is a perimeter grass selection that, while slow to establish, is drought tolerant and requires little water, fertilizer and pesticides.

Water management can have the greatest impact on maintenance budgets and practices, especially over-watering. Your superintendent should be encouraged to use a probe and hand watering as tools, not just relying on an automated system. Over-watering leads to increased disease, shallow grass roots, easily damaged turf, invasives and compaction. With proper management, the turf is more durable, drought resistant and vigorous, and can enhance playability — short hitters get more roll and distance and better players enjoy the firm, tight lies. Just as important is the sustainability of local labor with well-paying jobs and respectful working conditions.

### You Can Never Play the Same Golf Hole Twice

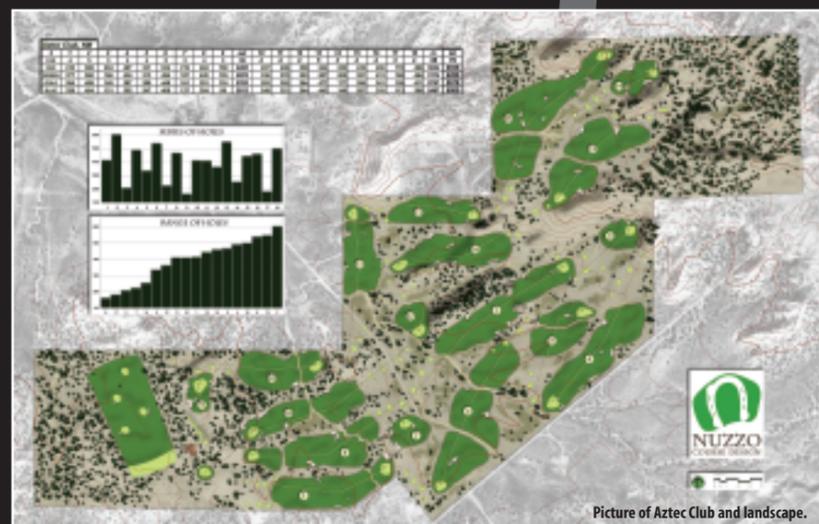
Some final thoughts on individual design elements begin where every hole ends: on the green — the most fascinating part of the course and where lasting



Picture of landscape construction.

impressions are made. The best-designed greens create multiple strategies from the tee and positioning in the fairway based on ever-varying conditions. A thoughtfully designed green can be interesting, fun and challenging for everyone. For a healthy green, surface drainage is the most important factor. That does create a balancing act because green speed and slope are directly related. Well-built greens are less expensive to maintain and require less intensive care. Firm smooth greens are favored by the player and the course. 

Mike Nuzzo of Nuzzo Course Design is a golf course architect who couples artistic talent and innovation with technical expertise and comprehensive hands-on experience to create unique and ideal golf courses within any set of constraints, but especially on beautiful land. Mike can be reached at [mike@nuzzo.net](mailto:mike@nuzzo.net).



Picture of Aztec Club and landscape.

vidual holes and shots. It also must show respect for the earth by fitting into the landscape with sustainability.

### Getting Started

To begin, create and define a sound business plan commensurate with the type of course — resort, public or private. Any course needs to meet its economic goals whether it plays host annually to 1,000 private rounds or 60,000 public rounds. Form a team to include the owner, golf course architect, building architect, market analyst and attorney. To maximize potential, remain open-minded and minimize constraints at the beginning of a project, including clubhouse location and the number, par and length of holes.



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11807 Taylorcrest Road Houston, TX 77024  
[mnuzzo.com](http://mnuzzo.com) [mike@nuzzo.net](mailto:mike@nuzzo.net) 713.467.2207