

**GOLF COURSES OF THE FUTURE**  
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Golf courses of the future will be firmer, faster, flatter, friendlier and more environmentally fashionable. The North American golf course will retain its image of a lush, green oasis, but will use significantly less water, fertilizer, pesticides and fossil fuels. These changes will not be so much government mandated as driven by the competition of our free enterprise and American value systems.

Future golf course architects will still be limited to a design palette of grass, trees, sand, water and natural hazards, to define shot values and golf holes, but they will express them in less artificial ways than today. Gone will be goofy mounding, contrived ponds and streams, thoughtless bunkering, and "in-your-face" mass earthmoving. Instead of just paying lip service to the work of past masters like Ross, MacKenzie and Tillinghast, future designers will finally have learned the meaning and elegance of the phrase "less is more." Golf courses of the 2020's will possess the same timeless and natural charm of the great courses from the 1920's, but with playing conditions superior than today's.

Public attitude towards the environment will demand stricter water conservation, protection of soil, air and water resources, and a greater respect for natural systems and habitats, however science and technology will allow golf course maintenance to meet even the highest standards. Turfgrasses will be selected or genetically engineered to be more drought tolerant, disease and insect resistant, and hence require less water, pesticides and fertilizers. Golf course superintendents will monitor plant growth conditions through satellite imagery, spectral and reflective analysis, and soil based sensors. Although there will never be a substitute for the educated eyes and mind of the superintendent, he or she will confirm their observations of turf health through home pregnancy-type tests for soil, water, air and tissue testing. Application of sophisticated pesticides, closer in nature to medicines than poisons, will be applied by GPS (Global Positioning Systems) and computer controlled equipment that can either spray, inject or mist a specified dosage to only small infected areas. Mowers and sprayers will also be guided by GPS and coordinated with irrigation cycles so routine maintenance can be done at night with only an electronics technician on the grounds to do troubleshooting. Century old techniques of organic turf care will again be popular and maintenance equipment will run on batteries or renewable energy sources.

Fertilizers for individual golf courses will be custom designed, blended and encapsulated in poly coatings to match release rates to plants based upon growth cycles, rootzone data and microclimate. This will completely eliminate any risk of groundwater contamination. Likewise, engineers will continue to advance the control and delivery systems of irrigation water to match the ability of plants and rootzone to absorb any applied water to eliminate runoff or excessive application, thus further conserving water. Technology on reuse of gray water or non-potable water will continue to advance, to the point of matching certain turfgrass cultivars to certain types of gray water. Even now, high salt tolerant grasses for golf courses are emerging that permit the use of brackish or sea water for irrigation in some special situations. Improved strains of the former weedgrass Poa annua will be used extensively on putting greens on older traditional courses.

Golf greens will be constructed flatter than ever before to allow for even faster putting speeds. This means the introduction of new finer blade grasses that can be mowed to below one-tenth of an inch, and mowers to do the job. Greens will be built with specialized rootzone construction using space age soil amendments, under laid by drainage systems that can be either subjected to a vacuum or pressurized to control soil water and air content, as well as apply non-lethal gases to control soil borne pests and pathogens.

Flat, fast, firm greens, of course means it will be more difficult to stop approach shots that don't come in from a high trajectory and with lots of spin. This challenge will no doubt be answered by innovations in club and ball design, and perhaps even new swing techniques. Older traditional courses with more sloping greens will be forced to choose between slower putting conditions or rebuilding their greens to flatter slopes to allow for ultra fast conditions. Green sizes will shrink because of damage reducing innovations like alternative spikes and more aggressive putting grasses that will recover more quickly from injury. Bunker sand will become standardized.

Five to seven sets of tees will be common on future courses not only to accommodate even wider

demographics of golfers including very young children and super seniors, but also to provide more interesting play angles and challenges. Fairway conditions will also be firm and fast adding to the strategy in selecting target areas, but will be much wider, 60 yards or more like in the days when animals indiscriminately grazed the entire course to the same height grass. Reducing long rough will permit a return to true strategic golf where the ball is driven to the most advantageous location for the next shot by balancing risk and reward for both the drive and second shot. Less rough will also speed up play and increase the intrinsic pleasure of golf.

Future golf courses will have fewer trees to allow precious sunlight to reach the turf, improve air movement and allow the wind to become a greater factor in shot selection. Few trees will speed up play, too. Non-turf vegetation on golf courses will be selected and maintained for its natural adaptiveness, and its ability to improve animal habitat. Ponds will be built not just as reservoirs but also as complex ecosystems. Habitat specialists may become a common part of any golf course staff whose duties will be the health, welfare and care of non-turf plants and critters that find refuge on the golf course.

Celebrity designers of golf courses will increase since in most instances the celebrity's main contribution is their name, while a team of trained and experienced design professionals execute the necessary details of the work. Media will always be interested when the celebrity visits the site to offer critiques on the progress of the work, and savvy marketing types will soon realize that Michael Jordan or Bill Murray can handle those chores, and attract a great deal of more publicity than even tour pros.

Since the first golf magazines appeared a little over 100 years ago, golfers, and hence golf writers, have searched for that very special and unique places to play. In the future those "must play" courses will be found in isolated and even remote locations, requiring significant travel and perhaps even helicopter service or pack animals to get to. Given the powerful machines and techniques to construct and maintain spectacular courses on almost any place on earth, that if grass can be grown there, golf courses will be built. These could be courses in the bottom of dormant volcanoes, on isolated islands, or atop unfathomably high mountaintops. These courses will resemble Bud Chapman's fantasy golf holes, and to get there and back will be a mini expedition. The game of one-ups-manship will move from building the most spectacular golf course possible to finding the most spectacular place to build a golf course.

At the other end of the spectrum, affordable, accessible, sustainable golf courses will be common, driven in part by free enterprise and assisted by the entire golf industry. The First Tee Program will evolve into the Peace Corps of Golf and every community in America will be able to introduce non-golfers to the game of a lifetime at a nearby friendly, sustainable golf facility. Personally, I believe the future will be good for golf, the design profession, and golfers of all types.