

GREEN GOLF: WHAT ARE THE PRIORITIES?

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When I talk with golf course owners and managers about whether their courses are environmentally-friendly they often say:

"We want to do the right thing, but where do we start?"

In an attempt to answer that basic question - how to determine priorities - I surveyed some 30 golf course owners, directors, scientists, environmentalists, and heads of regulatory agencies and non-governmental organizations.

Their conclusions were remarkably similar. "Simplify - don't try to do everything," they said. And they added "environmental sustainability isn't magic - it requires commitment by the owners, some study, some hard work and most of all, patience."

(They also concluded, and provided dramatic evidence to support their views, that a golf course which is environmentally-sustainable can also save significant amounts of money. This economic angle is the theme of a second article, which will appear in the next edition of *Golf Business Asia*)

"Nature is my architect," declares Luciano Rocca, the robust founder of the I

Girasoli Golf Club. I Girasoli (Sunflowers) near Torino, Italy, was the first course in continental Europe designed with completely natural fairways and rough. "She designs more beautifully than anybody else - and her fees are much cheaper too!" Rocca adds.

Fred Pearce, the environmental author, noted "Royal Birkdale (home of the 2008 Open Championship), boasts natterjack toads and sand lizards. Wentworth in Surrey provides a refuge for the silver-studded blue butterfly. Gleneagles in Tayside, Scotland, has bog moss, native cranberries and carpets of wild flowers such as mountain pansy and wild thyme. Nature still survives in profusion at some of the oldest British courses, which were created amid natural landscape and make little use of modern chemicals."

But these are European examples. What relevance do these eco-friendly courses have for Asia? Is sound environmental management compatible with the demands of modern tourism and ever-growing economic constraints? And more to the point, how does an Asian courses owner and manager identify priorities and begin this ambitious task?

The golfing world cannot ignore the need for environmental stewardship. Currently there are more than 30,000 golf courses



worldwide, with approximately 1000 new courses being built annually. Golf generates big money, but is also increasingly in the spotlight as governments and conservation groups question golf's environmental credentials.

Asia is by far the fastest growth region new course construction. China, for example, opened its first golf course in 1984 and by 2005 the country had approximately 240 golf courses. Today China has more than 1000 additional courses which are



either in the planning stages or under construction.

Environmental-sustainability does not just apply to existing courses. Hundreds of new courses are being planned in Asia, for example Vietnam plans some 70 new courses in coming years. With global economic clout moving from West to East, the opportunity exists to improve upon golf course development by incorporating sustainable environmental considerations in the before a golf course is opened rather than as a costly and possibly, government-imposed afterthought.

In my research for this article I found that there is great goodwill throughout the golf course industry, including within Asia, to do the right thing. One obstacle though is that there is perhaps too much information. The well-intentioned course owner or director feels overwhelmed. "Where do I start?" "What do I focus on?" As a result it may be easier to do nothing.

But the experts I spoke with are clear. The three most important issues for a golf

course to focus on are:

- Water conservation
- Minimization or elimination of chemicals and waste
- Environmental strategy and management

Water Conservation

The R&A, golf's recognized ruling body, which actively promotes environmental responsibility, defines sustainability in relation to golf courses as **"Optimising the playing quality of the golf course in harmony with the conservation of its natural environment under sound and socially responsible management."**

Of the ten environmental impacts that the R&A identifies, the top two are: water supplies, and water quality from fertilisers,

pesticides and siltation.

So, for the R&A at least, water quantity and water quality trump other considerations, such as effects on habitats, visual impact, construction waste, and energy use.

Professor Joseph Vargas of the University of Michigan and an expert on turf grass has put the water problem in perspective.

"I think the greatest environmental challenge to golf courses is going to be the availability of water in general and the availability of good quality water," he says. "As water becomes more and more limiting in some areas of the world the needs of people and agriculture are going to trump the requirements of water for golf courses." As evidence he cites laws requiring golf courses in Spain, and in the states of Florida and Arizona, to use recycled water.

Golf water experts point out the obvious - irrigation (of crops and golf courses) do need to use costly and sometimes scarce drinking water. "Grey water recycling of course irrigation creates a self sufficiency and eliminates the need to draw water from external sources and protecting our greatest commodity," advises Tom Haddon Director of Gold at the Laguna Phuket Golf Club in Thailand.

Another way to reduce water use is by planting native or locally-adapted grasses.

Luciano Rocchia of I Girasoli agrees that "a lack of water is a major problem for golf courses." By using the grasses which are natural to the local environment, Rocchia claims to use 12 times less water than the golf course just next door." Economically this translates directly to the club's bottom line and it also mitigates any negative environmental impact of water use on the golf course.

The USGA (United States Golf Association) states definitively, "Use native, naturalized or specialized drought-tolerant plant materials wherever possible. For areas in play (greens, tees and fairways), using plant materials that: are well-adapted to the local environmental conditions; can be efficiently managed; and provide the desired playing characteristics."

Most of my respondents also agreed that the lion's share of effort regarding a "green-appearing" course should go into making the greens, the putting surfaces, as good as possible. A golfer can live with seasonal brown fairways, but the golfer gets really upset when the greens are in poor condition.

The selection of which grass to use is complicated, and it is generally recommended that course owners make this decision in consultation with turfgrass experts. But the right grass can certainly make a difference. In Singapore, James Sua, course manager of the National Service Resort & Country Club (an IGOLF Laureate Course) related that the grass used "during the renovation of our 27 hole- golf course here at SAFRA Resort (located next to Changi Airport) required

much lesser fertiliser as compared to our previous Bermuda grass. It also required less water, previously we watered for 15 minutes during normal days, but now we only required five minutes for our new variety.

Sua would also like to see, "more training on subjects such as turfgrass and environmental management to be conducted in Asia."

Besides the selection of the right grass, there is technology that can help reduce the use of water and chemicals. In Switzerland, I spoke with a course superintendent who is developing a system which collects rainwater and then pumps droplets to the roots of the grass which absorb it through capillary action. He claims his system eliminates evaporation and prevents disease. He has three test greens which have remained in top condition since the tests began almost 24 months ago. Clearly, technical fixes are less costly when a course is under construction rather than as an afterthought.

Minimization or elimination of chemicals and waste

This happened to me. I was playing on a course in Switzerland, enjoying the warm

summer sun, dressed in shorts and a polo shirt. A hundred meters in front of me a greenskeeper drove a tractor, spraying some ominous white foam. More frightening, he was dressed in an outfit which looked more suitable for a chemical accident or nuclear disaster (full plastic covering on his body and a double face mask) than a golf course fairway. I wondered what he was protected from to what I was being exposed.

Jay Feldman, director of Beyond Pesticides, an organization which educates and advocates against the misuse of pesticides, was quoted for a major article on environment and golf in Golf Digest. He said: "Pesticides pose health risks, both acute and chronic, from common coldlike symptoms, nausea, dizziness, headaches, rashes, to birth defects, learning disabilities, infertility, leukaemia, various cancers, including brain cancer, breast cancer, non-Hodgkin's lymphoma. There are studies linking asthma to pesticides that are widely used on golf courses. In all cases there are studies that link pesticides to these effects."

When it comes to pesticides, fungicides, fertilizers and general chemical use, golf course managers should take an



pro-active approach. Why endanger employees and the public unnecessarily? Brent Blackwelder, President of Friends of the Earth, was quoted in the same article, "What is realistic is that all golf courses (should use) the principles of Integrated Pest Management, which is typical of agriculture (to minimize pesticide application). You don't automatically spray everything as soon as there is a problem. You identify the problem and understand the reasons for it and use the pesticide sparingly."

In Italy, Roccia describes what he does as, "using fungicides and pesticides in practically homeopathic doses..."

Jay Feldman of Beyond Pesticides, takes it a step further, and predicts that the transition to organic practices that is now common in agriculture will also be adapted in non-agricultural land management such as home lawn and golf-course management.

In the area of chemical use, it is evident that less is more. Use less, preserve the environment and save money (a point I'll discuss in detail in the next article). Sometimes simple waste-reduction actions can yield significant benefits. Per Dahlen,

Founder of AUM Business Creations Pte. Ltd. in Singapore, observes that "using an anaerobic (air-tight = no smell) Biogas Generator, the organic waste can be turned into fertilizer within 2 weeks and at the same time produce gas which can be used in the restaurants for cooking purposes."

Environmental strategy and management

The Valderrama Golf Club in Spain is home to the 2008 Volvo Open and is a past Ryder Cup venue. Valderrama is recognized as one of the world's most well-managed and exclusive golf clubs and Derek Brown, Valderrama's General Manager told me, "The greatest challenge in running any golf course operation is to make sure that the course is free from any type of chemical or other pollution. Each club should employ a superintendent who is qualified with a degree in agronomy and

who understands the day to day problems. He needs to understand everything about chemicals, those which are the most environmentally friendly and water quality, whether it be re-cycled or pure and water quantities are also important as a course will not benefit from too much or too little water. The course superintendent should be the person entrusted totally to manage the course operation."

Micah Woods, research director of the Thailand-based Asian Turfgrass Center makes the point "that golf courses with an environmental management plan will save money, quite possible improve the playing conditions, and almost certainly create a better playing experience for the members or guests playing at the club." Woods, who is also a member of the IGOLF Council of Experts, adds that "applying water, fertilizer, and pesticides accurately and only as required will result in fewer applications and less cost for electricity, fuel, and products. Turf conditions improve when the grass is managed properly. And when the turf is in good condition it allows the course manager to focus on the entire property, including out-of-play areas. This can lead to an enhanced landscape and increased biodiversity. Of course sustainable management of golf facilities is a win-win situation for the course owners and for the customers."

Cheryl Patulot, the environmental officer and pollution control officer of The Manila Southwoods Golf & Country Club agrees. "Based on my experience and on what I have observed from the other golf courses here in the Philippines, the greatest environmental challenge in managing golf courses today is the management commitment to establish, implement and maintain an organization's environmental management system. ...the absence or the lack of commitment of the top management would mean inconsistencies in the implementation of the environmental programs and later on, not achieving targets. The management has to set a vision or a mission or a policy that everyone in the organization should know and follow by heart. With this in place, any environmental challenge/issue, big or small, can be handled successfully."

In preparing this article my respondents suggested four steps to developing an effective environmental strategy:

- If you don't have in-house expertise, start with an experienced consultant
- Identify two to three key environmental priorities. Don't try to do everything.
- Appoint a team leader and give him/her the support and budget required
- Make environmental sustainability a long-term commitment of everyone on your team - from gardeners and caddies to the chairman and shareholders. Don't forget the golfers themselves.

In conclusion, IGOLF Chairman, Paul Sochaczewski puts it well, "Golf courses have to realize that they have a choice - they can no longer afford to ignore environmental and social realities. Golf courses, and golfers themselves, can do a lot to protect nature by reducing pollution, providing habitat for wildlife, minimizing chemical usage and conserving water. A well-managed golf course can actually be positive for nature, and, in the best cases, serve some of the functions as a de facto nature reserve. Asia can be a model because many of the leading courses there want to be good environmental-citizens."

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