

# GOLF CLUB

NOVEMBER 1999

£3.00

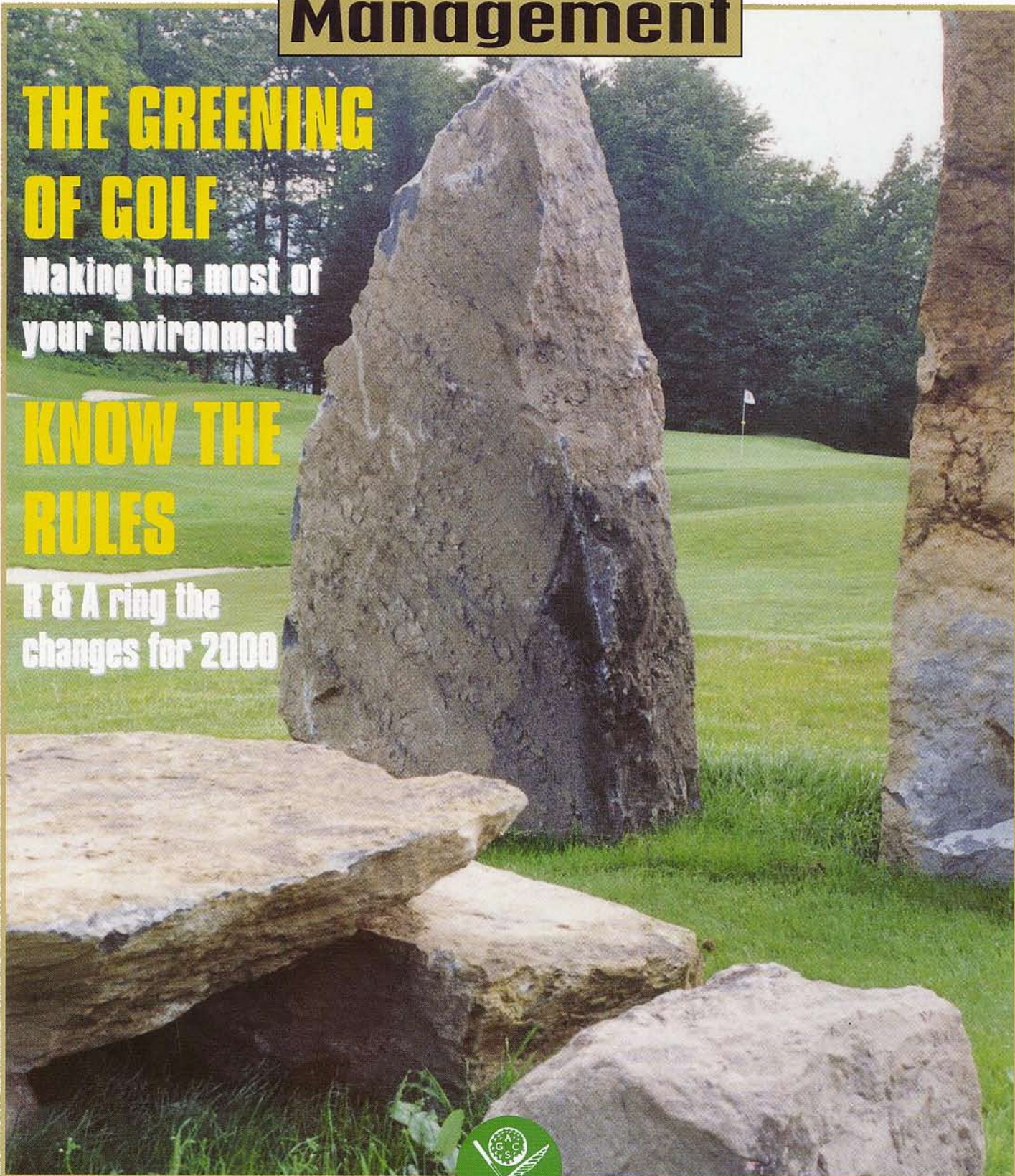
## Management

### THE GREENING OF GOLF

Making the most of  
your environment

### KNOW THE RULES

R & A ring the  
changes for 2000



THE OFFICIAL JOURNAL OF THE ASSOCIATION OF GOLF CLUB SECRETARIES



Dartmouth Golf & Country Club. All photos courtesy of Jeremy Pern



# The greening of golf

*Golf Course Architect Jeremy Pern provides an architect's perspective on environmental concerns in course design and management*



A mountainous backdrop to Charmeil Golf Club in Grenoble

**G**olf course architecture is not substantially different from other forms of popular artefact design and, as such, follows trends and fashions. Popular design is evolutionary, derivative, seldom very interesting and never truly original. Progress takes place incrementally, in directions that are slow to change, difficult to predict and hard to influence directly.

Throughout many parts of the world the American model of golf course design, involving major landscape modifications, has become synonymous with one particular perception of golf course 'quality'. The leading fashion in recent decades has been towards projects of imposition rather than harmony. The justification often given by their promoters and designers is that such huge alterations are 'necessary' to achieve the 'natural look' of the authentic Scottish links land. As one would expect, these often very costly and highly adaptive courses are considered by the golfing circus (press, tournament players, sponsors and organisers) to be among the better courses in Europe.

Research indicates that courses built by American architects and their clones are both significantly more expensive to build and maintain than other courses surveyed in a Europe-wide survey of recent golf course developments.

There is an obvious correlation between a large construction budget (which infers large-scale earth moving, irrigation installation and aggregates use), and a large maintenance

budget, with high fuel and fertiliser consumption. These projects will pay higher architect's fees, have increased construction costs and have higher maintenance budgets, all of which point to increased negative environmental impacts. However most of the European golf courses considered to be of exceptional quality come from an older and more modest design tradition where more is not necessarily better.

Golf course design quality is not necessarily linked or proportional to budget, nationality, geography or culture, but to the original nature of the chosen site and the creative talents of the architect. Those talents enable a skilled practitioner to create an environmentally sensitive, cost-effective, quality golf course from mediocre raw materials that would perhaps be rejected as unworthy by grander names or transformed into disaster by incompetents.

Qualified professional European golf course architects have tended towards a more harmonious and respectful approach to the landscape, usually for practical rather than ideological reasons. Planning permissions are easier to obtain and constructions costs lower. In recent years some European designers (predominantly of the Germanic landscape architect tradition) have created wonderfully ecological courses but, some would say, of dubious golfing quality.

There are a few European architects who take a more considered approach to golf course design. By seeking to recreate, enhance or preserve natural features, designing their courses in function of the wider environment they create courses that incorporate high golfing quality with a respect and understanding of landscape values. While all designers pay lip service to landscape traditions and respect of natural values, it is clear that not all designers understand what the terms mean. Educating golf course architects is an ongoing



process and it is essential that those responsible for designing golf courses be qualified and trained in all aspects of their craft.

The first environmental guideline for any golf project is that it uses trained, experienced and qualified professionals as part of its development team. This applies just as much to golf course architects as to ecologists, engineers or agronomists.

An inadequate response to the environmental questions posed by a golf course development will result in a planning refusal. However an environmentally sensitive golf course design that, as a result, proves itself to be of mediocre golfing quality is no more acceptable than a golfing wonderland created in disregard of those same sensitive environmental planning conventions.

## Spatial Aspects of Design

Golf course design is concerned with two different spatial aspects of landscapes - playing and non-playing areas. The non-playing or un-maintained surfaces can be divided into three areas of environmental interest:

### 1. Improvement Areas

Areas that are specifically modified for environmental enhancement as a result of the course construction. Examples might include tree planting, lake and wetland creation, foot path construction, public access, enhancement of lost landscape features such as dykes, dams, ditches, ridge and furrow field patterns, stone walls, discovery and enhancement of archaeological features such as 1914-18 War Trenches, building foundations, Neolithic potholes.

### 2. Conservation Areas

Areas where some modifications as a result of management or minor works are undertaken with the specific aim of environmental enhancement. Conservation zones offer numerous opportunities for site specific activities depending on the imagination of the golf club and their budget. Placing of nest boxes, winter feeding of local wildlife, construction of stone heat sinks (murgiers) to encourage reptiles, re-introduction planting of local species to encourage greater diversity, recreation of lost land use patterns e.g. hedge planting; signage, public access (schools) for education purposes, golfer awareness projects.

### 3. Protected Areas

Areas left untouched both by the construction and subsequent management of the course. Typically these areas would contain red list species or be SSSIs or be legally designated as preservation areas during the planning process. These zones can offer opportunities

for golf awareness programmes, scientific research, education, and public relations with outside bodies such as environmental NGOs, local protected landscape managers and the local community. These areas would also contain landscape or cultural heritage features such as archaeological sites, listed buildings etc.

## Environmental Enhancement

Improvement, conservation and protected areas within a golf course offer opportunities for environmental, landscape and cultural enhancement activities, ecological preservation,

6. Water management in the form of drainage, storm water control, surface water runoff, creation of ponds, lakes and wetlands can enhance species or habitat protection.

7. Construction or creation of dry pasture environments, reptile zones, sandy heaths and rocky outcrops offer contrasts to water management areas.

8. Creative design will use existing environmental and cultural features to enhance the design by incorporating these elements within the conceptual framework of the course.

9. Safety on golf courses is a very sensitive issue and public access has to be limited to safe areas, however golf courses should not be seen



Water storage ponds can offer attractions as additional golf features, areas for wetland planting and enhanced bio-diversity

environmental education, species preservation and increased bio-diversity. Some of the more typical opportunities are described below.

1. Micro-habitats can be created which will increase bio-diversity at the same time as improving the quality of the golf course.

2. The use of golf courses as linking networks (bird migration routes) or barriers to less ecological developments (urban spread).

3. Use of grasslands as a 'waste sink' for treated sewage waste.

4. Waste water can be effectively used for amenity turfgrass irrigation.

5. Golf courses may have negative impacts on habitats either by reduction or fragmentation. Course design can keep these effects to a minimum by keeping play away from sensitive areas and mitigating adverse effects by creating wildlife corridors between habitats, transition or buffer zones between playing and non-playing areas.

as islands of exclusivity and where appropriate, safe public access is to be encouraged.

10. Negative impacts such as soil erosion, compaction and deterioration of soil quality may be reduced.

11. Planting species that may have particular ecological interest or effects can promote environmental improvements to bio-diversity.

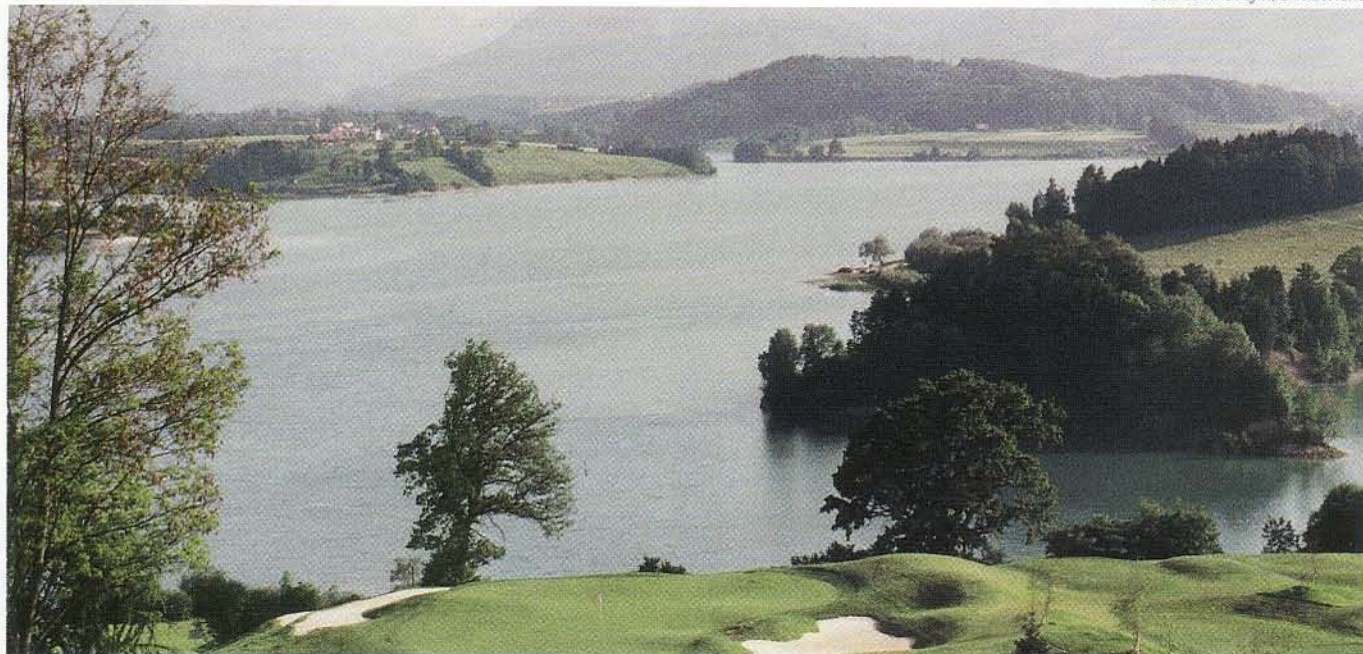
12. Professional and careful irrigation design can effectively reduce water consumption in a dramatic manner.

13. Drainage is necessary for the course, however it may be reduced or modified to create out of play wet areas, pond sbr small streams.

14. Water storage ponds can offer considerable attractions as additional golf features, areas for wetland planting and enhanced bio-diversity or additional public amenity value (fishing).

15. Peat is the traditional soil amendment used in golf course green and tee construction.





Alternatives to this non-renewable resource are being developed and increasingly specified.

16. Research developments in micro-biology in recent years show that other approaches to turf management and water quality may be effective, specifically in the use of bacteria and fungi. The fertiliser and chemical requirements may be substantially reduced as a result of a more biological approach through microbial inoculation.

17. Turfgrass selection of new breeds that are more disease resistant and drought hardy.

18. Turfgrass developments follow agricultural developments. Just as there are organic farms it will not be too long before the first 'bio-golf course' appears.

### Management Opportunities

1. Education of golfers, course managers and course designers in the range of environmental enhancement opportunities and techniques available on golf courses.

2. Education of ecologists and environmental activists in the range of environmental enhancement opportunities and techniques available on golf courses.

3. Staff education. Unless the golf club management is familiar with the environmental context the creation of an ill considered project with badly trained staff can have negative effects on local ecology.

4. Community links such as the use of golf courses for school biology field trips.

5. The use of local labour (unskilled, semi-skilled, skilled and managerial) in rural situations where jobs are fast disappearing brings economic benefit to certain communities where golf courses have been created.

6. Regular interface with the local or regional environmental departments and NGOs to seek

opportunities to work with the protected landscape communities so as to create environmental enhancement strategies for the golf course in line with local objectives.

7. Post construction environmental monitoring may be done on behalf of the golf course by local conservation groups.

8. Local rural skills and traditional crafts can be promoted by the golf course in conjunction with outside interest groups.

9. Golf clubs in general aim to reduce maintenance costs and increase revenue while at the same time improving the perceived quality of their courses.

By integrating these far-reaching concepts into the design and management process it is possible to examine ways of improving the sustainability of new and established golf course developments. The impact on the environment of a development is not necessarily confined to the immediate environment of the development.

Energy consumption in the form of construction earth moving, and use of large quantities of quarried sand, gravel or peat may have considerable effects on the sustainability of golf course construction in relation to a much wider environmental debate. If these general concepts are applied to golf course design it is quite clear that the less earthmoving done the smaller the ecological rucksack required. The notion that the size of the construction budget and designers fee relates directly to the quality of the course is sadly misplaced. As far as the environment is concerned less is definitely more.

### Cultural and Social impacts

The renovation of historic buildings, the preservation of landscape heritage, the creation of nature trails etc, on golf developments can

have direct local cultural benefits, as well as ecological ones. Other obvious positive impacts are in employment in areas where jobs are scarce - the countryside. An important social consideration in golf course developments in Europe is not immediately obvious. This is the possibility of educating the middle income, middle age socio-economic group into thinking in a more environmentally friendly way. Awareness programmes in the States (Audubon Programme) and Europe (Committed to Green Programme) can have a positive effect on how these groups think about the environment.

### The Future

As new golf courses continue to be developed in Europe, land use planning legislation and procedures, conservation strategies, impact assessment and subsequent monitoring require that all those participating have access to accurate information on which to base their decision-making processes.

For existing and future golf developments to play an increasingly active role in the conservation and protection of the European landscape, environmental enhancement will be best achieved through accompanying improvements to the golfing qualities of the courses; not at their expense.

*This article is based on a research thesis undertaken at the University of Wales, Aberystwyth, Institute of Earth Sciences, International Centre for Protected Landscapes.*

For further details contact Jeremy Pern, 2 Rue de la Gironde, 31490 LIEGUEVIN, France. 1. Tel (33) 561 060202  
email: [Jeremy.Pern@wanadoo.fr](mailto:Jeremy.Pern@wanadoo.fr)