

Roland Taylor examines what it takes to produce and maintain water features

Splash of colour



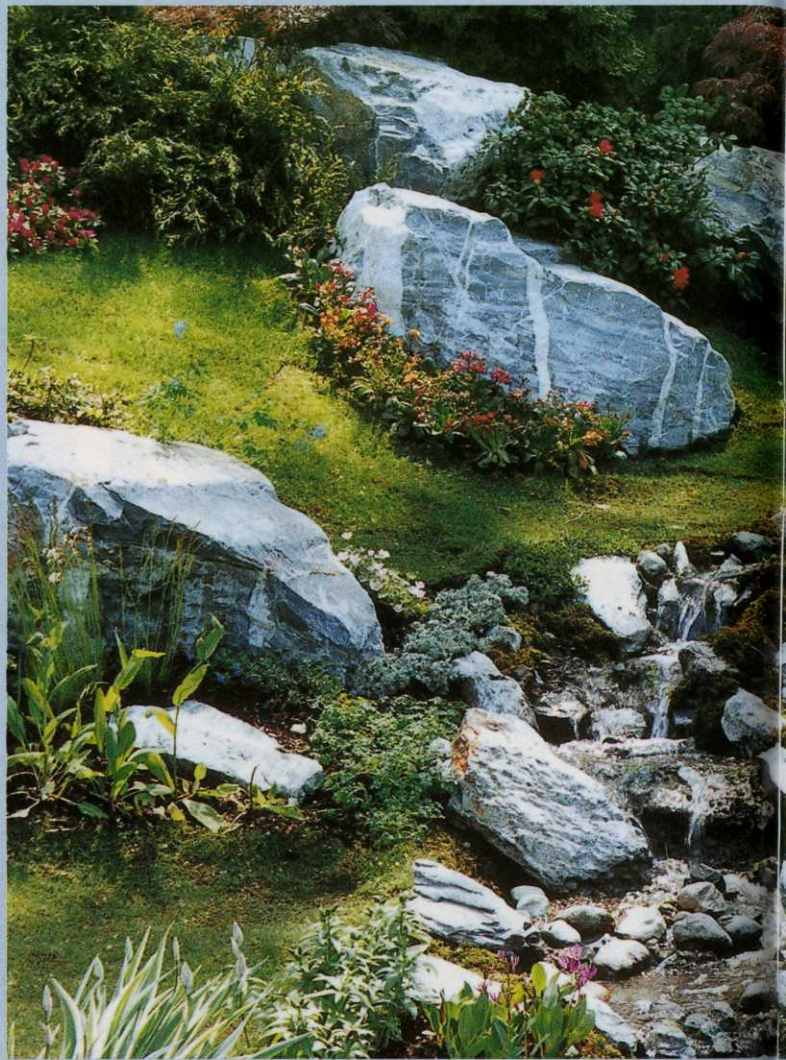
For many courses, especially those built in the last two decades, water features form an integral part of the design. They require a management programme similar to the rest of the course if they are to thrive and look good. Ponds, lakes, streams, ditches and any other areas of water, if left become clogged with silt, overgrown with vegetation, or turn into a stinking morass.

Often this is not Nature's fault but man's inconsideration of the environment. When areas of water are well managed and sympathetically landscaped, they enhance the surrounding area. The reflective qualities of an expanse of water will set off a green and its surroundings to perfection. With all the effort that has to go into maintaining the greens, tees and fairways it is little wonder

that other things that go towards making a course stand out are low on the list. Today's golfers are spoilt for choice and the surroundings can be a significant factor in deciding where they will play. Everyone has seen the change in the appearance of courses that television coverage has brought.

A great deal can be done to enhance the appearance of a course. This should not be dismissed. Top of all

Splash of colour



greenkeepers' lists are obviously the playing surfaces, but the public are now very aware of their surroundings and what the eye beholds plays a significant part in their relaxation and enjoyment of the game. In some cases it determines whether they return or rejoin a particular course or club.

Landscaped water can add to a course's image. Its reflective qualities alone will transform an area. Add a fountain to an expanse of water and it suddenly becomes alive with movement, light and sound.

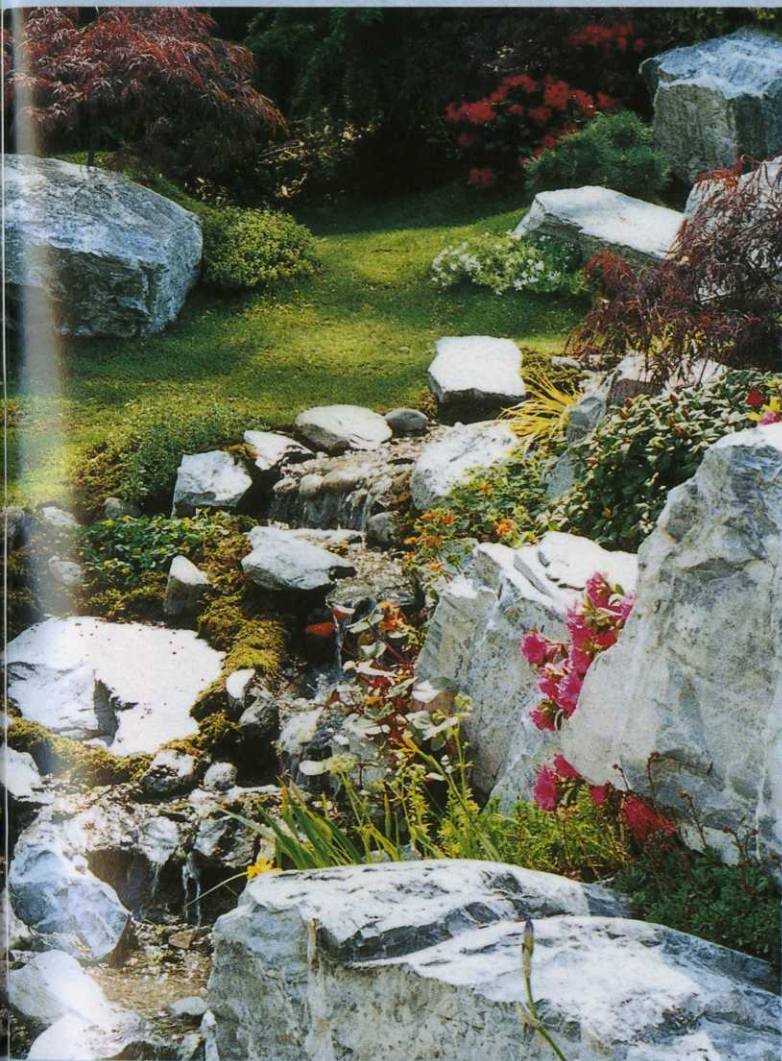
By putting a series of dams in a natural watercourse shallow and deep pools are formed. In these can be positioned boulders, stones and plants, plus a well-designed bridge spanning it and an area of tranquility for any frustrated golfers is created. Dreary ditches are transformed by selective planting of marginal plants. These will add splashes of colour throughout the spring and summer. For lakes and ponds there are now plenty of highly colourful water lilies to choose from. Their leaves act as shades against sunlight and will help to reduce algae growth. They need to be planted away from fountains or water falls. Marginal plants such as sedges and iris, especially the variegated forms give another dimension to the horizontal plane of the surface. Hostas come in a variety of greens and yellows, and when planted with ferns provide effective ground cover

on banks throughout the summer. In the margins, groups of candelabra primulas and astibles will add splashes of colour.

Using a combination of royal fern (*Osmunda Regalis*) and the shuttlecock fern (*Matteuccia Struthiopteris*) can create a dramatic effect. Add to these a backdrop of the giant gunnera (*Gunnera Manicata*) and the effect is outstanding. Bamboos can also be added as they give movement and texture while acting as a screen.

If the soil is acid then for really big displays you would go a long way to beat rhododendrons and azaleas. Their reflected blooms in a pool in spring and early summer will be a talking point in the clubhouse. Likewise, acers in autumn put on a fantastic display and for winter and spring there are the willows (*salix*) with their attractive barks and catkins. The list is endless and for readers considering planting it may be worth consulting either a professional landscaper or reputable nursery. Both can recommend the most suitable for the soil and conditions the plants are to be grown in.

For many golfers the course is not just somewhere to play the game, it is a haven in which to relax from the stresses of modern life so the surroundings are important. Like every other leisure pursuit, golf operates in a highly competitive marketplace and many courses continually have to attract new play-



ers. Highly visual water features and colourful plantings not only look good in a leaflet they can also be a major selling feature.

Water Management

For any water features on a course to remain healthy and looking good requires knowledge of what goes on in the murky depths.

In this ecosystem there is a fine balance and the slightest change can really alter things drastically. The main reasons for a problem occurring are generally attributed to changes in temperature, nutrients or oxygen levels.

Where water is poorly managed, the knock-on effects soon become obvious.

Plant and algae growth increases rapidly

Irrigation systems and pumps have to be continually cleaned

The volume of water drops as sludge builds up on the bottom

The shimmer on the surface disappears and it smells

Another sign that there might be trouble afoot is an infestation of insects.

No two ponds or lakes are the same, so what is affecting one might not be the reason why another is deteriorating. Whilst there are control

methods for all these symptoms they are often only temporary, so it is important to identify what the cause is. At this point it could be worth calling in an expert - a limnologist (the equivalent of an agronomist).

If the water quality is to be maintained, it is essential a management programme is implemented because, like greens, there are certain operations that need to be carried out regularly.

An area of water is like a dustbin. Over a year large amounts of material are deposited and accumulate. These include grass clippings, seeds, soil, leaves, dead plants and animals, chemicals and fertilisers. While this ecosystem has methods of dealing with this decaying matter, there is a point when it becomes over loaded and things start to go wrong.

Plant and algae growth can be kept under control by using weed harvesters, rakes and some form of covering, such as polythene (Benthic barriers) over the bottom of the lake or pond. If large amounts of sludge and nutrients have built up the only answer is to call in a dredger. Both these operations are only treating the symptoms not the cause.

An alternative form of control is using chemicals and this is more popular because it is a relatively quick operation. However this kills off plants and algae, which sink to the bottom where they start decomposing, oxygen levels are reduced which,

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AERATION CLEANSSES LAKES NATURALLY

Aeration, or more specifically Otterbine Aerators, (illustrated above) provides today's answer to water quality management. For details talk to the specialists -

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in turn, kills fish and produces a smell. Chemicals are expensive and again are only a partial solution.

There is another course of action that has for centuries proved to have beneficial and lasting effects on the quality of the water - aeration. Companies and organisations involved in the treatment of domestic and organic waste successfully use this process.

As the name implies aeration adds large amounts of oxygen to the water and in the process creates undercurrents that break up the temperature layers found in all lakes and ponds - in short, it mixes everything up.

The addition of large volumes of oxygen result in healthy and strong colonies of aerobic bacteria, which are essential for dealing with organic nutrients and waste. The digestive process of anaerobic bacteria (the baddies) is drastically curtailed.

The high circulation rate mixes the different temperature levels to produce more uniformity. Cold water from the bottom is distributed throughout the warmer surface levels and in doing so slows down the growth of algae. Other spin-offs from aeration include a lowering of iron and phosphorus levels.

All this adds up to better water quality control, reduced algae and plant growth plus sludge build-up.

On most courses, the areas of water are reservoirs for irrigation, so it is vital that they are well maintained and managed if the systems they supply are to work effectively. A restricted flow to pumps due to partially blocked filters places considerable stress on components and reduces both their efficiency and life. It is also time consuming to have to be continually cleaning them plus unblocked sprin-

kler heads. Apart from this the quality of the water being sprayed on to greens is of paramount importance to their healthiness.

It pays to make sure your water is good quality and looks good.

Finally, one of the more unorthodox uses for a water feature.

The clubhouse at the Costa Mesa Golf Club in the United States has a balcony that overlooks a large lake. One evening a group of members were sitting enjoying a drink and the scenery when an irate player appeared and proceeded to throw his bag and clubs into the lake and then stormed off. Ten minutes later he was seen wading out in to the lake to retrieve the bag. After much searching he found it, delved inside and upon finding his car keys promptly threw the bag and clubs back.

A leading European supplier of pumps and control systems reported that water features are becoming increasingly popular on courses throughout Europe. Kevin Shaw of Flowtronex Europe said, "That while it was possible to include the controls for a water feature within the main pump system it is not advis-

able. There is the risk of jeopardising the irrigation of the course." They have found that the pumping requirements for many features are often more demanding than was first expected so it is important to plan carefully.

At the new Marquess Course at Woburn Sands, a stand alone pump unit

was installed to provide 22litres of water per second to cascade down waterfalls through two lakes. On another installation in Portugal that involved 600 metres of running stream the pump controls were incorporated in the main system. In this instance they were able to do it because the irrigation was operational at

night and the water feature ran during the day. They said both these examples were the exception rather than the rule.

The message is clear. Anyone contemplating installing a water feature that will require pumps should consult specialists who will be able to advise on the most suitable system.