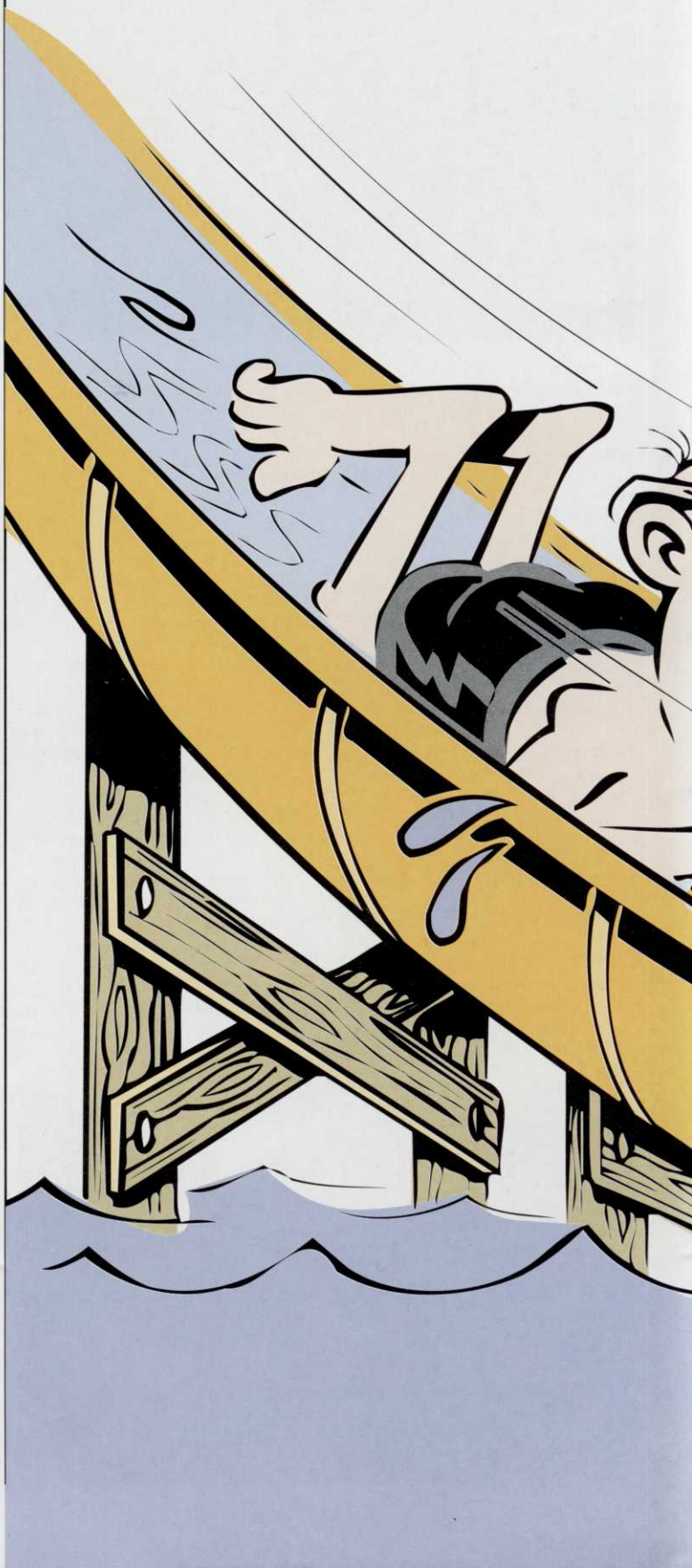

Graeme Francis gives some practical advice to ensure that your irrigation system is ready to go when required.

Water way to go

Question: When is the best time to think about irrigation system maintenance?
Answer: When it's pouring with rain. Not when the sun is shining and the temperatures in the 20s, it's simply too late.

It may seem strange that irrigation is being discussed when most greenkeepers are struggling to get water off the course, but now is the time to get everything ready, because it might just be a long hot summer and all the worries about taking water away could be replaced with concerns about getting the right amount onto the turf.

It is only a few weeks before irrigation could be needed and preparation now will ensure a smooth transition from one form of water management to another.

An irrigation system is a combination of mechanical, electrical, hydraulic and electronic components and equipment and therefore requires a suitable level of regular pro-active servicing if it is to operate reliably and efficiently. As with many other technologies, advances are being made at an ever-increasing rate and end-user serviceability is becoming more complex. Despite the recent prolonged period of wet weather and the stricter control of water for irrigation, systems will continue to grow in size as more areas of the courses are irrigated playing surfaces of ever higher quality are sought.

So what does a Course Manager need to consider when looking at servicing the system? Is it a general task, which can be undertaken by the greenstaff? Or does one member of the team need to be given responsibility? Perhaps consideration should be given to bringing in a specialist irrigation company and if this option is chosen, upon what contractual basis should this be done?

Each option has certain merits and factors such as the type of system, the composition of the greenkeeping team and operational budgets all have a bearing on which is adopted.

As systems increase in size and control systems in particular become more sophisticated the trend is towards bringing in a contractor and retaining his services through a formal service agreement. Such agreements may involve simply re-commissioning the system in the spring, the "open up" and a return visit in the autumn to drain down and pre-

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pare the system for the winter.

Many companies offer a more extensive service that allows several visits during the year to check operations and undertake minor repairs. In addition support services are offered for PC based control systems and these can include technical assistance with aspects of controller operational and scheduling over and above the normal faultfinding and repair functions.

At clubs where irrigation covers greens, tees and fairways an irrigation technician should be employed to take responsibility for maintenance, and this individual can undertake basic repairs and servicing tasks, calling in assistance from a contractor when a deeper knowledge or specialist equipment of techniques are required. Certainly more and more Course Managers see the use of contractors as a cost effective way to handle irrigation system servicing.

When looking at service agreements it's important to ensure that you compare like-for-like. Check how much of the system is covered by the agreement and get a good insight into how each company will deal with any calls for assistance.

If you have the expertise you may decide to take on the servicing in-house and there are a number of areas to consider. These include training, spares stock holding and equipment sourcing.

Some irrigation companies provide servicing training on the specific equipment including sprinklers and control valves. They offer a basic insight into routine maintenance, faultfinding and in repair and replacement procedures. It is important to remember, of course, that there are certain elements of the system such as pump control panels and any mains electrical components that require qualified engineers and investigation or repairs should not under any circumstances be attempted by anyone who does not hold the appropriate professionally recognised qualification. Remember that irrigation systems operate at pressures of up to 150 PSI (10 Bar) and water at this pressure can be very dangerous. Always follow the manufacturer's and supplier's instruction when operating or servicing any piece if irrigation equipment. Important rules such as isolating and depressurising pipelines before attempting to dismantle or remove components and never leaning over sprinkler heads when operating them manually may seem obvious, but the important of following them cannot be over emphasised.

In an ideal world there would be no need to carry spares, but we all know that things can go wrong, sprinklers in particular can be subject to damage and replacement parts need to be available. Carry a small inventory of pipe connection and repair fittings making sure that they are compatible with the pipe system you have. The move to using polyethylene (PE) pipe is almost universal and recent systems will use this durable pipe material. Many of the PE pipe systems are jointed using fusion welding, an operation requiring specialised equipment and trained operators. Some systems use compression fittings that are tightened using threaded nuts holding the pipe in place and on smaller size PE pipe systems compression fittings can be used for re-connection following minor repairs. Once pipe seizes reach 90mm and above it may be necessary to have fusion joints and contractors will be required. While PE is accepted as the best current material, there are still many older systems using PVC pipe and the use of solvent welded (glued) joints is still prolific. Repairs should be relatively straight forward, but remember to comply with all Health and Safety requirements when storing, transporting and handling the solvent cleaners and cements required to carry out PVC pipe jointing.

Most UK control systems are decoder based and modern decoders should be very reliable and the need to replace them a distant memory. If you do suffer with unreliable decoders you will have to hold some in stock and a decoder replacement programme is a serious consideration.

Whether you take the increasing popular route of contracting system service work to an irrigation company or undertake the work yourself the key is to be pro-active. Preparations for the forthcoming irrigation season should be complete by February with any component replacement, particularly if of a large scale, finished so that in March or April it is simply a matter of starting up the system. If the previous autumn's drain down was carried out correctly and provided there has been no physical damage to pipes, cables etc, the system should start up and work correctly. Don't wait until components fail, sprinklers, valves and pumps all have wearing parts, particularly seals and these have to be replaced on a regular basis. Create a programme of inspection and replacement that includes a comprehensive winter check. Look at the system now, visually check all accessible parts for mechanical damage.

The wet summer, autumn and winter we have just seen has created a fairly uncommon set of circumstances that make attention to irrigation systems particularly important. Systems did not generally operate with anything like the normal frequency during 2000 and prolonged periods of inactivity can be detrimental to any engineered system. If you have experienced flooding over the last few months, it is possible that other issues may arise. Sprinklers may be covered or filled with slit or other debris washed onto the course, valves boxes may have been subjected to similar conditions and will need to be cleaned out and valve assemblies check for contamination or damage.

Damage to water storage facilities may have been sustained. Obviously, if roof panels are been blown off liners are very likely to be punctured, but erosion of foundations due to running or standing water may have a serious effect on stability. Where in-ground water storage is used, contamination of the water from materials washed in with floodwater must be considered. Pump suction pipes may be covered in slit or debris and need to be inspected before pumps are started, as drawing these materials into the system can course damage that could be both extensive and expensive.

Check pumphouses, if they have been flooded, all the electrical installations need to be checked and expert advice sought if there's a possibility of damage.

It may sound strange, but not all irrigation components are designed to be submerged for prolonged periods, some decoders, cable joints and some external parts of valves could have suffer water ingress or corrosion if they have been under water for a long time and these need to be check now before they are required in March and April.

In summary, irrigation maintenance and servicing has to be a pro-active process, if the forthcoming season is warm and dry there will be some course managers who will be caught out. Make sure you are not one of them and seek expert advice now whilst there is still time.

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