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AD REF 61

GREENKEEPERS LIBRARY

DAVID WHITE

examines some of the latest offerings from publishers who have the greenkeeper in mind

For those who use pesticides (and who doesn't?), there is the most bewildering range of products available to control pests, weeds and diseases or the regulation of plant growth. The aim of **The UK Pesticides Guide** is to guide the user in the selection of pesticides, by providing details of all the products marketed and their approved uses, both those recommended on the labels and those which have been officially approved but are not recommended on labels and for which the suppliers will not accept responsibility (off-label approvals). The book is revised annually.

The compilers draw from authoritative sources: approved labels and product manuals, The MAFF/HSE publication Pesticides 1991, and entries in The Pesticides Register, the official monthly publication on approvals (including off-label approvals) up to and including the issue for August 1991.

Coverage, as you might expect, is most thorough, not only in identifying products but in providing guidance on how to use them safely and effectively, but without giving dose rates, volumes, spray schedules, or approved tank mixes. There are sections on FEPA and COSHH, substances most dangerous (the Red list), use of herbicides in or near water, maximum exposure limits, which diseases or weeds a product will best

be suited for, and special precautions that must be taken.

It would be remiss of me not to mention that the bulk of pesticides are primarily used by the agricultural industry, (the book lists them all), but that stated, any greenkeeper will find enough for the book to be a veritable bible of facts and information.

As an interesting aside, and admitting that it is not a book you will ever read from cover to cover, in my investigations I discovered one fungicide, as yet listed as being effective in the control of

for golf...!" and decided that while in Scotland he would visit 14 famous venues, ostensibly for a 2,000 word article for a golf magazine, identifying Scotland with the birth of golf and giving his opinions on the overall scene as he saw it today. As he was unable to satisfy the former and it took him over 60,000 bright and breezy words to do the subject justice, the magazine never did get its article. Instead came **By Yon Bonnie Links!** – Sam's fifth full-length narrative hard-back and best summed up with his closing epilogue on page 217: Whether from the Highlands, Lowlands, Netherlands, Midlands – or Papua New Guinea – addicts the world over acknowledge Scotland as the 'Holy Land' of golf. This light-hearted story of a pilgrimage across that 'Holy Land', amongst those who worship at its shrine, should leave little doubt that golf and its history needn't be quite so awesome as some would have us believe!

It's not quite a '1066 and All That' version of golfing history, because although amusing, it is, in every way factual. But thanks to a colourful imagination and love of hyperbole Sam has converted 400 years of 'sacred' lore into a zesty presentation which will please all but the stuffiest of students, and certainly all addicts and non-participants alike.

On reading an early draft, a top golfing historian wrote to the author: "This is good breezy stuff – but whether they'll let you play again at Muirfield is an interesting question!"

The idea of the history of golf – without the boring bits! – certainly delighted me and I believe you'll be equally enamoured by its irreverence.

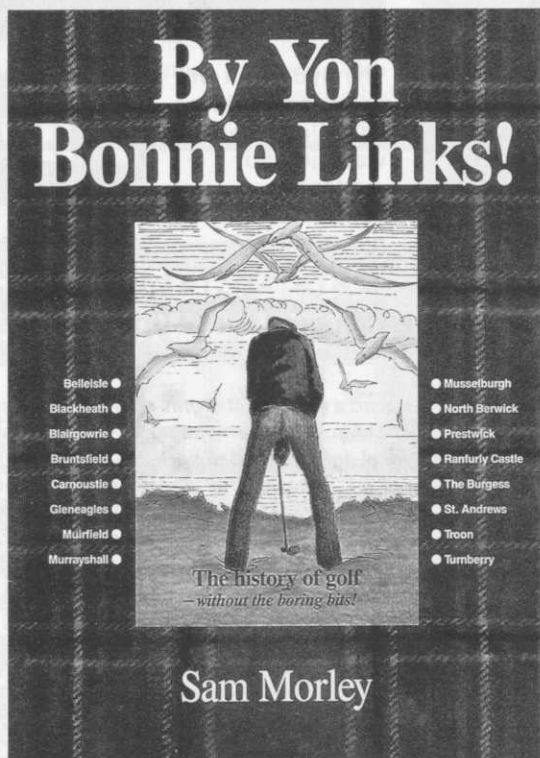
By Yon Bonnie Links! is published by Aedificamus Press, 113 The Ridgeway, Northaw, Herts EN6 4BG, at £12.95 post free.

The Boom Sprayers Handbook, edited by the BCPC Chemicals Application Committee and produced jointly with the Agricultural Training Board is a handbook which sets out to give practical and easy-to-understand guidelines on how to spray agrochemicals safely and effectively when using boom sprayers; and how to calibrate and look after the increasingly sophisticated machinery being used today. It describes the many different types of tractor mounted boom sprayers and includes details of nozzles, spray pumps, control systems, booms and boom suspension, and filters.

Guidelines are provided on methods of calibration, spraying practice and maintenance, as well as on health and safety aspects. It is cleverly illustrated and written without calling on unfathomable scientific jargon and will prove invaluable to those who are receiving instruction in the use of such equipment, as required by FEPA. Published by BCPC Publications, Bear Farm, Binfield, Bracknell, Berks. RG12 5QE, the handbook costs £5.00 post free.

Two free publications are announced by the British Agrochemicals Association: **The Cost Benefits of Pesticide Use in the Community and A Guide to Pesticides in the Community**. I particularly appreciated their reasoned answers to ten common myths and the no-nonsense way the pamphlets are written, with real life costings and comparative costs of alternative techniques that will enable balanced discussions; essentially with the layman in mind. They could prove invaluable should the Club 'clever dick' raise an argument in the clubhouse. Free from BAA, 4 Lincoln Court, Lincoln Road, Peterborough PE1 2RP.

The STRI's role as a publisher of books is well known, and news that a comprehensive guide to golf course management is currently being planned and should be available in the not-too-distant future is likely to raise interest throughout the world of greenkeeping. In the meantime, their



American gooseberry mildew on soft fruit, which positively sees off all *Poa annua* growth. As yet I am sworn to secrecy by the manufacturers, who are seeking approval, but you may be assured when the story breaks you will read about it in Greenkeeper International. Published by BCPC Publications, Bear Farm, Binfield, Bracknell, Berks RG12 5QE, the guide costs £15.25 post free.

The author Sam Morley was invited to the R&A by Michael Bonallack after publication of his hilarious "If it wasn't

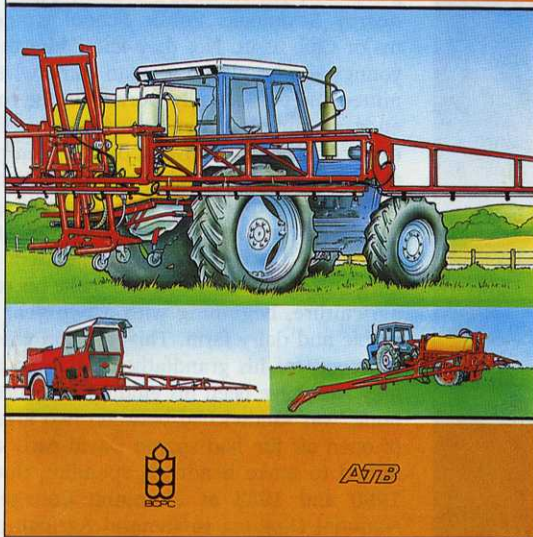
Turfgrass Seed 1992 is now ready, regarded as the essential reference on the relative merits of currently available grass cultivars for the seed trade and consumer alike. **Turfgrass Seed 1992** is published by the STRI, Bingley, W. Yorkshire BD16 1AU, at £1.40 including postage.

Every association of importance needs a discipline and the Association of Golf Club Secretaries were indeed fortunate in having John Crowther as theirs alone for many years. His recent book is an up-to-date, comprehensive guide to all aspects of golf club management, from draft contracts of employment to damage by driven golf balls.

Far from being dull and heavy reading, all chapters have a crisp, clear style, with many devoted to non-management stories and articles, some with full colour pictures. The author has used considerable 'inside' knowledge in compiling this book, benefiting from his years as national secretary of the Association of Golf Club Secretaries, and his continuing success in running the National Golf Clubs' Advisory Association. He was himself a secretary of a golf Club, and was a 4 handicap golfer for many years. He has always known that there was a need and a demand for such a reference book in the golfing world. One small sector, reproduced here, deserves exposure beyond these pages and should be posted on every Club notice board:

"The number of members in a Club may be 250 or 1,250. They all, as individuals, know how to do the job better than the staff and officials. They are experts in

BOOM SPRAYERS HANDBOOK



administration, accounting, green-keeping, the law, stock control, housekeeping, car parking, slow play and fast play. They all know how to produce fast true greens, deal with vandalism, make a profit, keep beer in top class condition, know where to buy wine at low prices and are able to cook and serve excellent meals at a third of their present cost. They, however, do not know how to pay their subscriptions on time, deal tactfully with visitors, mend pitch-marks on the greens, rake bunkers or understand the rules of golf or the handicapping scheme. They are, therefore, a special breed who need very careful administration and control. However, it is surprising how many of them are so friendly and pleasant and how good it is to work on their behalf'.

This hard-bound volume is a valuable working document for golf club secretaries, members of committee, and indeed any golfers interested in the management of their Club.

Managing Your Golf Club - The Facts and Skills of Golf Club Management, by John Crowther, is published by Harper Trade Journals (tel 071 261 1604) at £22.50 incl. postage.

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BOOKS

A Manual on Golf Course Construction, Turf Establishment and Cultural Practices, by James B Beard.....£22 inc. postage

Code of Practice for the use of Approved Pesticides in Amenity and Industrial Areas. A second edition of the 'Orange Code' - attractive, easy to follow presentation.£12 inc. postage

Specifications for a Method of Putting Green Construction, written by members of the USGA Green Section and edited by William H Bengeyfield.

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The members at Holtye Golf Club, on the borders of Kent and Sussex, have sound reasons to be proud of David Wood, their 31 year old head greenkeeper of just three years standing. To even the most casual observer it is clear that the Holtye course is in spanking condition – unarguably better now than it has been for most of its 99 years of existence. They can with every justification boast of David's achievements, not only for his bringing the appliance of science to this utterly charming course, but in capturing a veritable armful of major awards as the star student of the BIGGA approved Plumpton College, under the expert tutelage of David Blackmur.

Few, however, would have believed that the young junior golfer who joined Holtye in 1974 whilst still attending the nearby Sevenoaks Public School would develop into a major Club asset. No, they knew him then only as a keen youngster who played a mean game whenever studies permitted and who happily worked on the course during weekends at humble green switching, his first greenkeeping exposure. David has always been a keen golfer, playing now to a handicap of 11 and having been in single figures when calls upon his time were not as demanding as they are now.

Leaving Sevenoaks in 1975 with eight 'O' levels, David astounded his parents (his father is a schoolmaster) by announcing that he wished to make his way in the world of agriculture, beginning with a two year spell on a mixed arable and dairy farm. This decision was hardly surprising however, for his grandfather had been a farmer – indeed may well have been his guiding influence – and the family home was sandwiched between two lovely farms. The call of open air life had snared David early and he was determined to make headway, spending three years between 1980 and 1983 at Plumpton College whilst taking a National Diploma in General Agriculture. However, this young man was no run-of-the-mill agricultural labourer and in observing the general decline in agriculture he quickly moved into his own business as a garden landscaper and designer, his own boss at 22!

The creative aspect of landscaping was very much to David's liking and it is conceivable that he may well have progressed and, who knows, perhaps even entered into golf course design, but it was not to be. In his own words, "landscaping was a hugely satisfying business, but like so many one-man-bands I was doing too much for one, working all the hours that God created, but still not quite making enough profit to pay for an assistant".

The call of golf echoed again and early in 1989 David joined the greenkeeping staff at Holtye, a small team in which his obvious talent soon came to the fore. It may seem hard to believe, but within eight months he was offered the job of head greenkeeper – a meteoric promotion happily accepted.

Holtye is on common land, Par 66, 5,325 yards, nine holes of quite delicious heathland reminiscent of a miniature Ashdown Forest. The traveller comes upon it quite suddenly on the twisting main road between East Grinstead and Tunbridge Wells, its simplistic charm guaranteed to turn every head. It is carved through age old woodlands and is sparsely bunkered, thanks to clever green siting, with cross hazards of close cut heather through wide runnels – a legacy of old pack horse tracks. It is a haven for wildlife (look out for David's strategically placed bird breeding boxes), and is awash with silver birch, fir and gorse. One may be forgiven for forgetting that golf is the reason for its existence, for the numerous glimpses of nearby Ashdown Forest and stunning views of the North Downs can easily make one dismiss the less than perfect shot. It is a hugely popular course with 450 active members and its very popularity could have been its downfall.

With popularity comes activity, and the nine holes have

David Wood

been well hammered over the years, compaction being a continually recurring problem. David's programme evolves around relieving compaction and retaining the near 100% fescues and bents often found on heaths lacking any depth of top soil. It is typical heathland, weak and acidic, and David is of the opinion that not having automatic irrigation until very recently was the saviour of such fine turf. A greens irrigation system was installed in 1990, prompted perhaps by previous drought panics, but David uses this in a minimal way, giving the natural firm turf just enough moisture to keep the grass alive – no more, no less. He believes that over enthusiasm with fertilisers in the mid-80s was the cause of the dreaded *Poa annua* creeping into his greens, though he keeps this from becoming more than a minor irritation by natural minimalistic practices – ageless methods well taught at Plumpton. Even in late March the hand mown greens were looking healthy and putting quite beautifully – a credit to his clever maintenance programme.

Ninety-odd years of marching feet have taken their toll and David was at pains to point out that a programme of slitting, hollow tining and Verti-draining was an immutable necessity. Enthusiastically, he took me to where Colin Pryce was working with his Terralift compressed air subsoil aerator, hammer probing to a depth of up to 3ft and firing a seaweed based soil conditioner under pressure, into the soil profile. "I had seen the Terralift was complementary to Verti-draining, working wonders in relieving deep seated compaction on our fifth green, which was rebuilt a few years ago with decidedly dodgy materials and had always panned and behaved out of character", he said, "the whole nine greens are undergoing the same treatment now and I am sold on the efficacy of the treatment. The cost is £1,300 and takes about two days, but will be appreciated long after the price is forgotten" – sound recommendation indeed.

David reports directly to the general committee and keeps members informed with detailed but easy to understand course maintenance notes. Understanding is clearly the first step to acceptance, and David's members greet him with enthusiasm rather than as an opposing force out to get them!

Apart from day-to-day routine, David has the touch of an ecologist in restoring still more of the delicious heather. He is also carrying out a continuous programme of rebuilding pocket sized tees into areas which will more adequately cope with constant tee box changes and all tees will be sizably increased in time for Holtye's centenary year. His new construction is detailed (as one would expect from a landscaping expert), utilising sound practices and turved with Tiller turf, grown and lifted from a complementary growing medium. Whilst the tee building takes place, David is also installing strategic tee pop-ups himself, which makes him something of an irrigation engineer to boot. Nothing is left to chance and those tees already completed are looking wonderful. One hesitates to use the language of the real estate salesman, but they are of true championship quality and size, greatly improving playability.

David's BIGGA connection began three years ago, being a perfect mixture of active golf participation (he won the prestigious Ransomes Trophy at Ganton, represented BIGGA in the Kubota Challenge in 1990 and played for England in the Ransomes International Challenge at Fulford in 1991), along with dedicated work for the Kent section as their treasurer and secretary, taking the latter mantle from John Millen – a tough act to follow. His earlier committee work at college has stood him in good stead and he is now on the regional board, being the spokesman for Kent. Long term



New tee: the 2nd at Holtye Golf Club

'Few would have believed that the young junior golfer who joined Holtye in 1974 whilst still attending the nearby school would develop into a major Club asset'

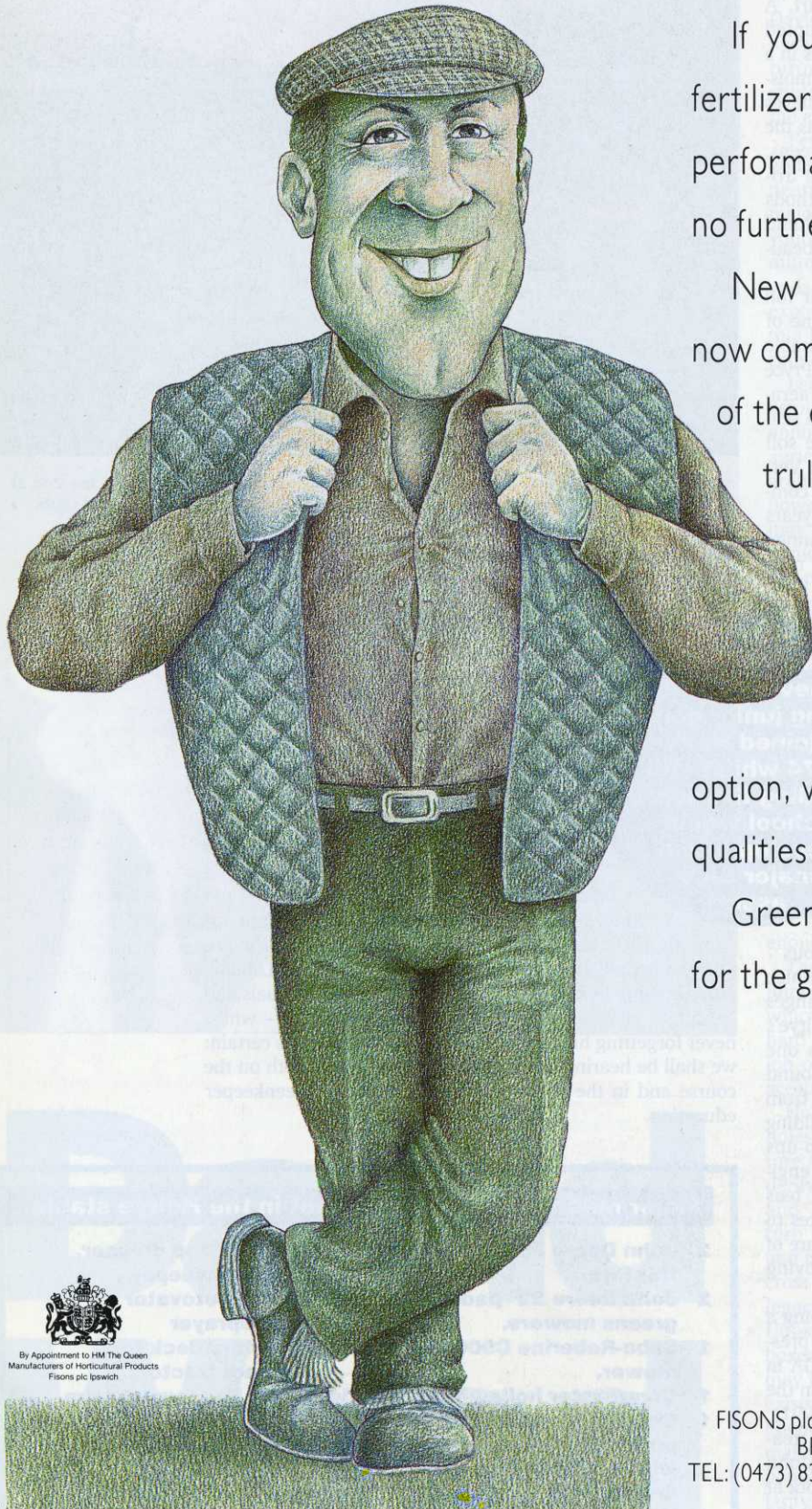
aspirations lean toward serving at national level, which he hopes might come "when I've enough experience". It would be remiss to gloss over David's academic record, for in recent times he has achieved the rare and coveted distinction of being the first ever greenkeeper to take the nationally awarded City and Guilds Silver Medal – the Top Student of the Year Award presented by the examining body itself, the City and Guilds of London Institute Examination Board. Last year he won the BIGGA Cup and Tankard for Best All Round Student (Phase II) in Greenkeeping and Sportsturf Management at Plumpton and he is currently engaged in Phase III, a busy man in every way.

Where does a high-flyer like David set his sights? Despite his unbelievable modesty I fancy that Europe may well beckon before too long, for those Europeans have a penchant for British technical competence and seem ever willing to offer both challenges and generous pay structures. Looking at his bulging library of well-thumbed fine turf manuals and stealing a glimpse at his recent examination work – whilst never forgetting his practical expertise – one thing is certain: we shall be hearing much more of David Wood, both on the course and in the continually active world of greenkeeper education.

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When Jim Parker, owner of the new Bank House Golf and Country Club, just outside Worcester, was contemplating the design of the golf course, his step-father who lives part of the time in Florida told him "Plenty of lakes, Jim, that's the answer!"

The first phase of eleven holes and a spectacular necklace of seven lakes set in 120 acres of countryside, which is being manicured and moulded into an attractive par 72 course together with a driving range is now being completed. The second phase of the remaining seven holes and six lakes, which includes building a tunnel under a secondary road, will be undertaken during 1992.

A spokesman for Laser Civil Engineering said: "We were certainly intrigued at the prospect of including so many lakes. Such high water storage is, of course, very commendable these days and this does not reduce the level of water in the lakes because there is so much water being induced by the circulating pump from lake number seven to lake number one".

Only a small pond fed by surface water existed at the start when Ocmis Irrigation came on the scene in March 1991, about four months after work on construction had begun. They devised a system of water management involving the re-circulation of water from the bottom lake (number 7) to lake number 1 by weirs and sluices to lake number 2 where the water is abstracted for use on greens and tees. Water falls from number 1 to number 8 lake by gravity and is pumped back through a sunken pipe line. There are manual hydrants for approaches and fairways. The course will not flood because the same pipes which feed by gravity would also take water off the site. The lake at the second hole holds seven million gallons and there is a waterfall between lakes 2 and 3.

Head greenkeeper David Kelly, who has had American experience and was previously at Bearstead, Maidstone, expresses his delight: "The Pencross creeping bent now on the putting surfaces requires plenty of water", he says,



WATERSPORT

KEN JOHNSTONE adds weight to the controversial use of lakes in British golf course design and describes a new course where *thirteen* will make up the landscape

adding, "it's great to have all these lakes and it certainly helps us to irrigate specific areas whenever we like, for even though the irrigation system is fully automatic and irrigates the greens and tees at night, we can still plug into the system manually with a hose". David has just joined BIGGA ➔ 28

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Above: Jim Parker, left owner of the new Bank House Golf and Country Club, with course designer Bob Sandow. Previous page: young trees in place in a lake setting

27 and has as his first assistant, Robert Bishop, a very keen BIGGA member, who came from Evesham. Arthur Young, who assists full time, has considerable local connections which have helped in the development plans.

Some of the hedgerows have had to go but trees have been saved and more will be planted. The Malvern Hills provide a fine back-drop and the spire of Worcester Cathedral and the tower of Bromsford Chapel pierce the skyline. Swans move, oblivious to the world of golf, on lakes two

feet deep containing trout and carp, with lilies setting the scene. It is not only aesthetically pleasing, there is a strategic challenge too.

Playing the tenth (Par 4, 310m) you drive between lakes 2 and 3 landing on a wide fairway, with lake number 2 comfortably to the right. Two of the lakes are in play. The ninth is a splendid dog-leg with a carry across the water of 150 yards. You cross lake 4 (lakes 4 and 5 both have an island which come into play) – it being a very reasonable width even for the high handicapper – or you can lay-up after about 50m. You then play alongside lake 5, which is on your left.

Course architect, Bob Sandow, says, "I was not really taken back when I was asked to incorporate as many as thirteen lakes into my design. In fact, it is something I am getting used to, though admittedly not always so many, for all over the world there is growing emphasis on lakes for golf courses. No more so, of course, than in the USA, where they are very popular. One of the most famous examples is at Augusta National; and in South Carolina for the most recent Ryder Cup millions of TV viewers saw the spectacular lake orientated course at Kiawah Island. Here at home we also have the example of The Belfry, where lakes figure at the 10th, 17th and the impressive 18th".

He goes on to say "When a course is built on a comparatively small area like Bank House – 120 acres for a par 72 and Driving Range – one has to apply a safety zone and trees and lakes are ideal. "It is a very well installed system and when one considers the urgent need for water storage, there is further good sense in using lakes in the design of the course".

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Asset or liability?

DAVID HEMSTOCK considers the merits, or otherwise, of water features on golf courses and looks at planning, design, construction and maintenance

As with many other aspects of the golf course, the pros and cons of water features are an emotive subject, more often than not producing an emphatic for or against, with rarely a display of indifference.

We all seem to have an almost instinctive affinity for water: ponds, lakes, streams are an attraction in being mysterious, changeable and always drawing attention. Any Club with water on its course (formal rather than casual) should view it as a valuable asset. Those without would do well to consider the value of establishing a water feature to add interest and variability to play, to improve the views, to encourage wildlife diversity, to serve a purpose, say irrigation, drainage or even fire fighting to name but a few – or indeed all of these.

Historically, water features are important. Our island once had many more areas of exposed water than it does now, particularly in England, but innumerable ponds have been in-filled, with streams, running ditches and springs piped for convenience. There is an element of maintenance involved with any open water, arguably less than that of an equivalent turf area perhaps, but still representing a commitment which if not carried out may result in an eyesore rather than an asset.

Time casts the cloud of doom over many such areas, slowly and often unnoticeably, as siltation, shading by trees that have increased in size and changing water inputs have

their effects. A greenkeeper needs to have another string in his bow – that of water area management – if he is to keep the whole of the course in thriving condition.

The arguments against? Well, as a number of greenkeepers have put it to me in the past, they have enough on their plate without the regular donning of waders to cope with black sludge, blocked outlets, midges and water weeds. Fair comment, but many such problems can be avoided with good planning at the construction stage. One bad experience with an ill-conceived water feature should not condemn water features forever and if you are unfortunate enough to have a very demanding area of open water, perhaps there is a way of reducing the maintenance requirement, for instance, in a pond which requires regular cleaning, one that may be suffering from leaf-fall and a build up of organic matter which cannot break down quickly enough, because conditions are not right for biological decomposition eg. trees are blocking out light and aeration is not sufficient.

These problems suggest that presenting a good water circulation is essential to provide oxygen for healthy water. If flows have reduced for some reason (many spring supplies are not what they used to be due to the recent low rainfalls), then perhaps rainwater harvesting can help supplement water inputs. By this I mean directing more surface run-off or drain flow by actively diverting these flows in



Pond under construction: clay seals are not necessarily easy to form. Vertical faces require special treatment

29 ➔ some way. Alternatively an aeration pump helps to keep water healthy and conditions stable whilst also providing the interest of bubbling water. Of course, there is bound to be a maintenance element involved in the upkeep of an aerator and a potentially expensive power supply necessary to install, but they are worthwhile.

Sedimentation of water areas may actually indicate bank instability and erosion upstream, particularly if increased peak flows are occurring due to, say, a new intensive drainage scheme or hard surfaced area (car-park, housing estate, etc). Off-site problems affecting the course are often tricky to negotiate solutions, and so perhaps controlled collection of sediment in advance of the pond/lake/brook may be the answer, by means of a small lagoon which slows down flow velocity and causes deposition. High nutrient levels caused by applying too much fertiliser and its subsequent leaching also causes excessive weed growth and other problems, such as algae blooms (which, in the worst cases can be toxic). This, coupled with water which is too shallow, can lead to serious weed problems. Again, water circulation and aeration, aided by deeper water, helps control the problem.

Moving now to new water features, there are those who object not just to maintenance needs, but to the very concept of water on the course. We are all aware of how unnatural and excessively formal and penal water can be, particularly in the hands of some American-style designers. Timber-edged and amoeba-shaped, they may be simple to maintain with a clean break between water level and mown edge, but are they British?

Formally-edged ditches and brooks are easier to maintain and positively discourage the socks-off brigade, who may indulge in a spot of impromptu, aeration of water whilst

'What to do with that strip of mud when water levels drop...'

holding up play. A definite edge and deep water leaves no one in any doubts what to do.

Concerning banks, a particular problem is what to do about that unsightly strip of mud which appears as water levels drop, either through evaporation losses or drawdown by irrigation. A large surface area will give less drawdown for a given amount of water abstraction than a small area, but evaporation losses will be greater. Typical evaporation losses can amount to 0.3 metres over the summer and when coupled with irrigation use can make a pond look fairly sad by the end of summer.

The National Rivers Authority, when considering an application for abstraction of water for irrigation, may stipulate that the summer base flow from the supplying source must be maintained, meaning that all water must be collected in winter with potentially very little reliable summer replenishment. This has implications on cost of construction with expensive regulatory structures being required, but also heightens the drawdown problem. Edging the water with crushed stone (rip-rap), slabs, blocks and textiles etc., is effective as a disguise but is again expensive, given the generally large area and circumference involved.

Why not place a 'tank' or steep-sided reservoir, purely for the purposes of irrigation, away in a corner where unsightliness does not bother anyone? The design will have to be carefully executed, but this now applies to most water areas. The NRA should be consulted on all work to main water-courses, including drain outfalls, foot-bridges etc, and you may also require an impounding licence for a proposed pond or lake. Planning permission will also be required, thus levels will have to be calculated; along with drawings of the pond, cross-sections, inflow/outflow etc. and an assessment of cost produced, including the method of sealing. Of course, the obvious but occasionally un-addressed question of where the initial filling water will come from must also be decided.

It is easy to be too optimistic on the latter point, particularly with the low winter rainfalls we seem to be experiencing. Drains which flow reliably may mysteriously stop for all sorts of reasons, indeed this is happening at present. Thus reducing losses through seepage by adequate sealing is important. The cheapest method of sealing off on the right soil type is to compact and puddle clay. Done traditionally by scooping out soil, throwing a bale of hay into the middle

and allowing cattle to do the poaching or puddling for you, heavy machinery is the preferred method now. Weight, high ground pressure, smearing action and good, fairly high moisture content of the correct type of soils are essential to form a good seal. Subsequent to this the clay seal must always be covered by at least 0.3m of water or protected by a layer of soil, gravel etc., where it is periodically exposed to the air. Otherwise it will shrink and crack and the seal is lost. This is a lesson which has been well learnt, often from constructors who did not pay enough attention to sealing work.

On sandier or more free draining sites, the rule that 'you get what you pay for' applies. Polyethylene or PVC is commonly used as a waterproof lining, but needs protection from sunlight or it will harden and be easily damaged. A life-span of 10 years or more is possible if the correct gradients, jointings and laying methods are used. Heavy duty grades cost up to £10/m². Butyl rubber is tougher and potentially has a longer life costing over £5-6/m² for 80% Butyl + 20% EPDM. It does not require a soil cover, but can look ugly without. Other proprietary membranes are available, eg. reinforced and coated polyethylene or polyester reinforced bitumen, etc with costs which can be as low ➔ 32

On sandier or more free draining sites, the rule that 'you get what you pay for' applies