





A clever one-shot hole. Perhaps the finest hole of its length that exists on any golf course. The 15th at West Hill.

There are three great holes of this length in the London area, 350 yards or thereabouts. Of their kind unsurpassed. This, the 8th at Addington New, is perhaps the best of the three. The others are the 14th at Coombe Hill and the 6th at Wentworth.

The 6th at Cruden bay. This hole is only 445 yards in length, but the green is so constructed that it will not receive and hold anything stronger than a four/five iron unless the wind be against the player.

learn about golf course design, even though they had been playing top-level competitive golf for years.

Machinery became more readily available in construction of golf courses in the 50s for major earth movement work, and together with the trend towards the confused Anglo-American hybrid style, some particularly unattractive results were achieved. A popular feature was the raised convex green and sprawling shallow bunkers. Some really hideous mistakes were made, purely through ignorance. Thankfully, not too many such 'follies' were built in the British Isles, as was the case in the USA, with the excessive use of bunkers and cliches like island lake greens. One thing is certain; no golf courses following this style has become famous for its' good design. There had to be a point where people began to get tired of an accepted style, and as a result try to do something radically different in order to affect change. We must be thankful for this, I suppose. The 50s and 60s were depressing years for golf course architects and designers in the British Isles, (particularly so because of the austere post Second World War years). It was not until the late 60s /early 70s that architects and designers became accustomed to the capabilities and limitations of machinery in golf course construction and maintenance. An understanding, perhaps, of the principles which make a course great as opposed to being just a 'track' was again becoming apparent.

It is because of the influence of Colt and Trent Jones on modern golf course design that we now begin to see the quality of the finished product improve so considerably. Developers are much more demanding, expecting much more from a golf course architect. It is no longer enough for an architect to spend a day pegging out a route of the course with the developer and contractor, followed by the supply of standard green designs which could have been used on a dozen previous courses, never to be seen again until the invitations come for the champagne opening. He is employed as a consultant to provide designs, specifications and bills of quantities, responsible also for detailed contract management to ensure that the work is carried out to those designs. The financial aspect is also becoming an increasingly important consideration because many courses are now set up purely as business ventures, not as private gentlemen's Clubs. They have to provide the developer with a return on their investment. The architect can help the developer to achieve this by planning the most cost-effective way of building the course.

The golf course architect is therefore much more responsi-

ble for the work he produces. It is often said that a good contractor can make a poor design look good, though this should not be the case. An architect should never leave part of his job to the contractor, for he is failing in his responsibilities by doing this. He should be confident that his design and specification will work, whichever contractor builds it. Any contractor, whether he is a specialised golf course constructor or purely an earth-movement contractor, can build a good golf course. If there is proper design, a sound specification and bills of quantities to follow there is never reason for a poor quality course.

When a golfer plays a Colt or Trent Jones course he sees the obvious differences of how such design influences his game, and he compares this to other lesser courses. Only with the golfing public being able to play on courses like these will they start to demand better quality facilities. Then things will improve for all other levels of development, for no golfer enjoys playing off mat tees to temporary greens whilst walking quagmire like fairways.

This has gradually evolved into the current situation where not only does the golf course architect need to have a good understanding of design principles and construction techniques, but must also have a multi-disciplinary education, both theoretically and in practice. He will need a firm understanding of how golf is played and of the rules of the game, and the ability to apply his design principles to the romantic ideals of the client in order to make them work on site. He must have experience working on site in order to understand the problems which can occur because of careless design, or because of lack of research into existing site characteristics. Above all he should be aware of the capabilities of the complexity of machines being used to build the course and of the methods the contractor uses to achieve the desired effects demanded by both architect and developer.

A golf course architect has to understand the development of golf course design throughout the years, to appreciate the mistakes that have been made and learn from them.

The sign of a good golf course architect is one who can identify the good things in other designs and adapt these to his own individual style, whilst not plagiarising.

He should also be able to juggle all these disciplines at once without losing sight of the objective: to create a golf course that any level of golfer can find challenging and enjoyable to play, for it is this above all that will encourage a player to improve and to return to the game time and time again. • Continuing his series, Jonathan Gaunt will look next at a favourite architect, attempting to view his design philosophy and defining the style that characterised his work, giving him an essentially individual trademark.



Avoncrop Amenity Products have been appointed distributors in their trading area for the Barenbrug amenity grass seed range and the new Terralift range of complete organic fertilisers. These will complement their own new range of liquid feeds sold under the Turfgrow label, including their 18-0-0- fertiliser formulated for use on all types of soil and sand based constructions which have adequate reserves of phosphate and potash. Other mixes are readily available. Tel: 0934 820868.

■ Sports Ground Irrigation Ltd have been appointed distributors for the Hunter range of sprinklers including the new Golf range, these complementing the user-friendly CIC 1 and CIC 4 controllers. SGI Ltd are also offering dealerships in some areas, together with full technical back-up and a design service. Tel: 0858 463153.

■ Fairfield Turf have two new 'synthetic organic' fertilisers, claimed to be the only true demand feeds available in the UK. 'Lawn Builder' (22:3:3: + 1.6% Fe) is manufactured by a process called trionisation and utilises an expanded particle, impregnated both inside and out. With granules that are lightweight and small, incorporation into the sward is complete and is said to release all nutrients in a steady pattern over a growth period, thus avoiding surge. Made by the same process, 'Lawn Repair and Starter' is formulated to encourage regrowth of damaged turf and as a pre-turfing or seeding fertiliser. Tel: 06794 731.

■ ICI Professional Products announce the addition of Kings Horticulture, Colchester, Essex to their network of specialist distributors. Commenting on this, ICI Professional Products National Sales Manager, David Siddon, said: "the appointment of Kings Horticulture will provide our customers in eastern England with an increased availability of products and a major improvement in customer contact and service." Tel: 0708 223300.

■ The first ever HUXTRUK turf maintenance vehicle, designed and manufactured by Huxleys Grass Machinery of Alresford, Hants, has been purchased by Andover GC. This strong, modern vehicle, specifically designed with the British greenkeeper in mind, has a Perkins 23.5 hp water-cooled diesel engine, power steering and fully automatic hydraulic transmission. It takes the full range of Huxley turf care implements for aerating, spraying, brushing and load carrying. Tel: 0962 733222.

The Westurf Turfcare trade exhibition, organised by the South West and South Wales region of BIGGA, is looming up fast. The date for your diary is 29th April and the venue is Long Ashton Golf Club, Bristol. Gordon Child is the man to contact for more information – and to book your stand space. There's still some space available, but you'd better be quick. Give Gordon a call on 0803 844056.



All aboard the Huxtruk: from left, Eddie Fox, Chris Sturgess, Kevin Whatley, Mike Read, Alastair Fairweather and Tony Broad. ■ Recognising the problems faced by coastal bodies, Grasslands Turf Farm have developed a turf specially designed to be tolerant of salty conditions. A Blend of creeping red and hard fescues, bent and smoothed stalk meadow grass, it is a fairly fine turf with reasonable wear characteristics. Each cultivar used has been selected for its ability to persist in situations where salt from sea spray would scorch and perhaps kill the grasses more usually found in fine turf. The turf has survived two years of salt tolerance testing at the Sea Front Hotel and Golf Course, Hythe, Kent, a place known for gale driven soaking sea spray. Tel: 0679 67130.







ARTHUR considers automatic irrigation Straight talking JIM

Already many water authorities are warning of severe restriction in water usage this year following yet another long period of unusually light rainfall. Agronomist Jim Arthur offers some sound advice on automatic irrigation and on using the 'human' computer to good effect

reenkeeping is the bane of technocrats' lives, because it G is not, and never can be, an exact science. It does not lend itself to being governed by arbitrary standards (shades of DIN numbers, for those who have ever had anything to do with building courses in Germany), partly because there are no universally accepted standards of perfection - they vary not only with the type of course, be it links or heathland, parkland or frankly meadow, but even between courses in each category. If standards are set they must be maintained and checked. How, for example, can you possibly set a standard of perfection for putting surfaces, which is not only an emotive assessment, depending on whether one's eye is 'in' or not, but which is so often affected even in the very short term by weather and other non-controllable factors. Stimpmeters have minimal credibility except to compare speeds of greens at a set time or the same green at different times. All too easily they can become a rod for greenkeepers' backs - with demands that they achieve greens of set speeds.

I have maintained for over 40 years that chemical (not physical) soil analyses mean nothing and are of no help to any reasonably efficient greenkeeper, whatever his age or experience. Why spend fortunes to accurately determine, say, phosphate levels to the umpteenth decimal place, when

Let the rass tell u what u want o know

it has been known for nearly 90 years that we do not need anything other than bare minimal levels to support finer turf grasses. What do you do if you find you have phosphate levels well over 300 p.p.m. when you know you can grow the best fine turf grasses at levels far below 30 p.p.m.? The ideal



AD REF

'Overwatering is the cardinal sin of greenkeeping'

pH (level of soil acidity) is the one you have got!

It is by the same argument that erudite papers trying to set levels for golf course irrigation by using obscure and largely academic standards, based on data from agricultural sources, serve very little purpose. Even in the States, much of the abstruse calculations on how much water to apply relate to sand-only greens where there is effectively a 100% drainage rate, which eliminates one imponderable factor applicable in all other applications.

In the end, as such papers admit, the *decision* must be made by the man in charge ie. the head greenkeeper, who may be guided by some aids but who relies on the best of all computers – which lies between the ears of most of the species Homo sapiens! Moisture meters will never tell us how much to apply, but they can be very useful in giving a relative (ie. comparative) measure of soil moisture content at varying levels with a more representative sample of checking profiles when changing holes. It is no good waiting until the 'shine' on fine turf indicates severe stressing due to heat and drought. By then it is too late; but if it has occurred then we must break the rules and water heavily and aerate deeply to restore the root zone moisture.

There can be little fundamental disagreement with various statements on irrigation, such as:-

• start late in the season, as cold wet greens start growth much less quickly when the weather improves than dry ones. Late means May rather than April, which is a winter month in the UK.

• finish as early as possible to go into winter with dry greens, even if this means accepting the problem of a late drought!

• the main problems in the UK and Europe are of poor drainage and over-watering, not of drought.

• the soil moisture level must be maintained as uniformly as possible. Soaking surface soils with bone dry conditions below is asking for *Poa annua* and thatch to take over. In other words, never let greens dry out completely, but never saturate them. Again easier said than done, but intensive *deep* aeration helps.

• "Overwatering is the cardinal sin of greenkeeping" (Al Radko's immortal words!)

water should never be used to make greens soft and holding.

 water is simply used to keep grass alive, not to make it green or even to make it grow.

What would be far more useful than trying to work out the theoretical calculations based on general (and therefore non-specific to each individual course and thus relatively useless) criteria – which frankly are not understood or believed by the majority (including me!) and cannot easily be measured – would be to agree methods of getting the best out of pop-ups.

One of the worst heresies to emerge from a northern seat of 'learning' a decade ago was their advice to thoroughly soak greens (with pop-ups) once a week and then let them dry out before watering again. This most emphatically is not only wrong but demonstrably impractical. Suppose a normal irrigation time in drought is 10 minutes per green nightly. To apply this quantity once a week means 70 minutes per green – or for 19 greens an irrigation cycle of 11 hours – and this is not counting the tees and approaches. Clearly the problem would be when to find time to let the members play. So these bright lads suggested watering six greens one night, six greens two nights later, and the last six at the end of the week. How does one play a course with six rock-hard greens, six soggy bogs and six in between? All this is a relic from the days of hose and sprinkler watering in day-time, not principles but expediency.

Not only is such a system impractical, but this is the best way I know of losing the capillary connection between deep root zones and the surface – and then it is the devil's own job to restore it, even with the aid of wetting agents. Any practical horticulturist let alone greenkeeper will know that frequent light showers at night are better for plants than infrequent torrential thunderstorms or cloud-bursts.

Of course, there can be no arbitrary rule covering all eventualities, but the general principle is that with pop-ups one waters to the minimum level needed by the *wetter* areas – say up to 2,000 litres per 600 square meter green (perhaps a different duration for different greens, shaded or exposed to the wind, as the case may be) *every* night in drought. This, I accept, leaves dry areas too dry, so what can we do?

Turf Irrigation Services, the UK's leading golf course irrigation contractors not only take full responsibility for the design, supply, supervised installation and commissioning of new and updated automatic watering systems, they also provide comprehensive, post-contract service and maintenance facilities.

Of recent date, Turt Irrigation Services' clients include Wisley Golf Club, Bowood Golf Club (Wiltshire), Denham Court Golf Club, Royal Birkdale Golf Club, The Belfry and the Oxfordshire Golf Club. For information please contact Graeme Francis...



AD REF

'It is well to remember that water is not only predictably going to be scarce, it is also going to be much more expensive'

If the dry areas are dry because they are missed by the pop-ups in a poorly designed old system, then increased irrigation time will only make the rest of the green too wet while the dry areas stay dry. Clearly the answer must be to hand water with an open hose, especially on raised areas, with penetration aided by using wetting agents if need be and backed by intensive aeration. The best designed pop-up system at it most efficient can only apply water uniformly – and yet we do not want *uniform* coverage on featured greens, with different areas having different demands. Hopefully, we shall no longer hear members criticising head men for hand watering "when we have spent so much money in giving him an automatic system"!

Clearly, daily inspection is needed to check coverage – even of malfunctioning heads, but more usually wind-effect and run off on slopes. Moisture meters can confirm what the eye suspects, but none will tell you how much to apply. "If in doubt, don't" is still a very good rule. We should perhaps take our cue from weather forecasters, now being urged *not* to bemoan rainfall. We must learnt not to be frightened of drought – remembering that with skilled, experienced greenkeeping and a strong nerve, it can be used to get rid of a deal of rubbish!

Sadly, while bent and especially fescue will never be killed by drought alone, there is very little margin between checking and killing *Poa annua* and beginners have often been over-enthusiastic in their crusade against *Poa annua*, ending up with crisp dead grass and suffering accordingly.

Finally, it is well to remember that water is not only predictably going to be scarce but it is also going to be much more expensive. Claimants who insist that only the installation of fairway watering can give a better (and better quality) cover on thin fairways on sandy soils fail to understand that we play golf on turf *not* colour, and our native grasses bleach but never die in even severe droughts, though I accept that today's intensive traffic may put it under severe stress. Fairway watering over-generously used can severely cut back on the run of the ball, which matters more here where we play golf on the ground, compared with the States where it is played largely in the air.

The answer is to aerate intensively and to top-dress generously with humus-rich, moisture retaining materials such as fen peat, a policy used for 25 years on all the championship links with great success.

If there is insufficient water - or, worst still, a ban on its use is imposed - then turf which has adapted to a high watering routine will suffer severely. Impounding over the winter sounds an ideal way and is blessed by the National Rivers Authority, but if such impounding lakes double as water features in play, then as they are exhausted the effect of playing over a muddy, weed infested hollow is not brilliant. If we concentrate on greens and tees and *especially independently* on approaches, we can forget fairways in almost every case.

All in all, irrigation is not capable of being controlled by the book and there is no substitute for an experienced eye to suggest how much and when to irrigate. Skilled water management is the key factor in greenkeeping. Anticipation, as in all greenkeeping, is the secret and this can only come with experience. In its absence, it is better to under-water than over-water, but the grass will tell you what you want to know if you only have eyes to see.

FLANDERBLADE LTD

A family firm with over twenty years experience (eleven as our own company)

We design, supply and install irrigation systems

Maintenance contracts available within the Home Counties and the London area

Call Mr or Mrs Laker Tel: (0903) 724545. Mobile: (0831) 200072 Flanderblade Ltd., 20 Whiteacre, Littlehampton, West Sussex BN17 7JA

FULL MEMBER OF BTIA

Prime Watermen Ltd

WANGFORD · BECCLES · SUFFOLK NR34 8AX. TEL: (050 278) 481. FAX: (050 278) 729

QUALITY EQUIPMENT - RELIABILITY

PRACTICAL ENGINEERING - VALUE FOR MONEY

These are what you can expect when you choose a Weather-matic irrigation system designed and installed by PRIME WATERMEN LTD.

To benefit from these and our wealth of installations experience – contact us now on 050 278 481

IRRIGATION BY PRIME - COMMITMENT TO RELIABILITY AND SERVICE



AD REF

283 GREENKEEPER INTERNATIONAL March 1992 37

New weather station monitors the elements and promises no more wasted water

new, sensitive yet relatively simple weather station - which virtually eliminates the risk of over-watering - has come onto the market.

According to irrigation engineer Gary Parker, the man responsible for this innovation, the weather station is already arousing interest from clubs who have seen its specification.

Available under the brand name of Aquaflow, the weather station is compatible with the Aquaflow controller, which has been on the market since the mid-1980s.

Designed to continuously monitor local weather conditions, the Aquaflow weather station logs temperature, barometric pressure, solar radiation, rainfall, relative humidity, wind speed and direction.

This data is fed to the irrigation system's computerised controller where it is related to the system's hydraulics - sprinkler spacings, arc of coverage, set run times, and so on.

Allowing for site factors, the controller digests the information provided and automatically adjusts the watering program to provide only the amount of water necessary to meet ET requirements.

By exercising this time degree of control, the weather station relieves greenkeepers of the chore of constantly having to update run times to keep pace with the vagaries of the weather.

Field tests, carried out last year, have surpassed expectations, says Parker.

"Not only does it allow greenkeepers a greater

flexibility, it overcomes vague, rule-of-thumb calculations. Results have shown that the weather station is capable of a seasonal water saving to the order of 15-30%."

In addition to saving water (and reducing water costs), the weather station helps lower pump station power consumption - and charges. This is also reflected by reduced operational wear and tear to the whole of the irrigation system and therefore, maintenance.

"If only for environmental considerations, I believe the users of irrigation systems have an obligation to safeguard against wasting water especially on golf courses," says Parker. "The weather station provides a positive means of conserving water.



Watermation Ltd Tongham Road, Aldershot Hants GU12 4AA Tel: (0252) 336838 Fax: (0252) 336808

G.B. IRRIGATION LTD.

DESIGN, SUPPLY, INSTALLATION, SERVICE OF IRRIGATION SYSTEMS AND EQUIPMENT

> IRRIGATION? A NEW COURSE. A SYSTEM UPDATE. A SERVICE CALL. A PRESEASON CHECK.

WHATEVER YOUR IRRIGATION NEEDS, RING Gordon Bennington NOW!

G.B. Irrigation Ltd. 0425 473329 or 0836 259356

MAIN & SOUTHERN OFFICE: 25 Fernwood Close, St. Ives, Ringwood, Hants BH24 2NQ Phone/Fax 0425 473329 NORTHERN OFFICE: 119/121 Gateford Road, Worksop, Notts S80 1UB Phone/Fax 0909 473999

AD

REF 352

AD

REF 355

GOLF COURSE, SPORTS PITCH OR LANDSCAPE IRRIGATION, NORTH-WEST COUNTIES

Thinking about the many benefits to be gained from having an automatic watering system? A word with Irri-Serve will help you reach the right decision, economically.

A new system? Up-date? Extension or modification? We will be pleased to give you objective advice – backed by practical experience gained in the field – and all for just the price of a telephone call! Speak to Irri-Serve today or write...

Unit 9, Twin Lakes Industrial Park, Bretherton Road, Croston, Preston PR5 7RF Telephone & Fax: (0772) 601534



AUTOMATIC WATERING?

WE CAN...

Design, installation and after sales service are integral parts of the complete golf course irrigation package offered by ISS. The remainder? Extensive technical and practical 'Know-how' gained through years of satisfying the needs of golf course architects, developers, construction specialists and golf club committees...

New Systems, extensions or up-dating existing equipment – you name it, we can do it! Phone, fax or write to arrange an exploratory discussion – we will be pleased to meet you.



ISS (Irrigation Contracts) LTD.

Unit 6, The Bourne Centre, Salisbury Business Park Southampton Road, Salisbury, Wiltshire, SP1 2NY Telephone: (0722) 412510 Fax: (0722) 413025

TORO IRRIGATION AREA DISTRIBUTORS

Dickensian treatment for the man who asked for more

■ One particularly spiteful piece of vindictive skullduggery has been reported, that of a head greenkeeper of several years standing being demoted (in title) for no other reason than the little Caesars operating at his particular course want no truck with recommended pay scales. "Hitherto you will be known as 'groundsman' for the course" was their retort to his polite request that BIGGA pay scales be considered as a basis for any future pay negotiations. The poor man, poor in a literal sense, is paid the miserly sum of £8.800 per annum.



Flying Divots

The inaugural meeting of the Association of European Professional Golf Designers was held in February, brought into being by their collective frustration for recognition, coupled with their inability to become members of the longestablished British Institute of Golf Course Architects, which does not accept professional golfers. With some 40odd professionals now

involved in course construction they may well have a point, though as ex-Ryder Cup player turned designer, David Thomas, pointed out, some players' names carry more weight with developers than expertise. Without added comment, I am reminded of the words of the undisputed greatest player of all time, Robert Tyre (Bobbie) Jones, who wrote of his association at Augusta National with Alister Mackenzie: "I think Mackenzie and I managed to work as a completely sympathetic team. Of course, there was never any question that he was the architect and I his advisor or consultant. No man learns to design a golf course simply by playing golf, no matter how well."

It was good to see Tom O'Brien looking decidedly perky at the recent BTME and to learn that through his having received so much support from his peers over the Royal Birkdale post-mortem into the condition of the greens at The Open, he has agreed to remain with the Club until his scheduled retirement in two years.

■If there was an award for catchy captions, Paul Worster, head greenkeeper, Lillybrook Golf Club, would be collecting the glittering prize. His nifty throwaway line: If you know manage turf in the west, you can manage Westurf says more to me than reams of promotional bumph. Like the wise section secretary for the South West that he is, Paul knows that Bristol is a good place to be on April 29th – how about you?

Golf Course Construction

- New Golf Courses
- Alterations
- Drainage
- Irrigation
- Sand Slitting Our best advertisement is our work







AD

REF

338