



Chris Yeaman, of Swanston GC, in Edinburgh, has come up with an interesting old photograph taken in the mid '80s during a trip by Scottish greenkeepers to the Ransomes factory. Included among the assembled group are some familiar faces captured in their prime of life, including current

Scottish Regional Chairman, Jimmy Neilson, South East Region Board of Management member, George Barr, Ray Day and Steve Dixon. Also in the picture, eighth from the right, is Eddie Holt, of Dunnikier Park, Kirkcaldy, who has since died but for whom a memorial trophy is played each year.

Nixon gives thanks for vote of confidence

I am writing to express a big thankyou to all involved with BIGGA and Toro for organising and providing a trip of a lifetime to the USA. I will never forget the way I have been received and looked after since winning the Toro Student Greenkeeper award.

I would also like to emphasise the professionalism of BIGGA and Toro, they both put a great deal of work and effort into improving our

industry and because of this, I was proud to represent them in the USA.

Lastly, I would like to thank Askham Bryan College for putting me forward for this award and providing me with a first class education, and a special thanks to Mr Steve Prinn (course tutor).

Steven Nixon
Toro Student of the Year

Kubota challenge tees off

The inaugural Kubota Golf Club Challenge event has got off to a flying start with a full entry of 500 teams representing golf clubs from throughout the UK.

Being played over a series of five knockout matchplay rounds culminating in a Grand Final at Woodhall Spa Golf Club in October for the 15 remaining clubs, the Kubota Golf Club Challenge is an all-new golf tournament for teams of two players comprising the Secretary and the Head Greenkeeper of each competing golf club.

Tournament organiser, Sporting Concepts Ltd, said that the event is proving a tremendous success, having been over-subscribed by more than 100 entries in its very first year.

Rene Orban, Deputy-Managing Director of Kubota (UK) said, "Kubota has established an excellent working relationship over many years with golf club secretaries, greenkeepers and Course Managers. This tournament further reinforces our commitment to UK golf clubs and those who work in them."

A clearer outlook...

Shropshire-based All Glaze has introduced a nationwide on-site fitting service for the replacement of broken cab glass using Amma-Glas, a clear plastic glazing alternative to glass. Not to be confused with perspex, Amma-Glas offers:

- Excellent impact strength, withstanding the impact of errant golf balls and low tree branches, thus offering the machine operator a safe working environment.

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Amma-Glas is available in clear and tinted, replacing any flat and some curved glass. For further information contact All Glaze. Tel: 01691 658752 Fax: 01691 670201.

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News from Patisson's

The Oakland Tee Marker is a brand new product from Patisson's. Made from recycled waste polystyrene but with a wood effect, it is extremely durable and environmentally friendly. The body of the Oakland is colour impregnated so that if the surface becomes worn it is not noticeable. The ends are painted white with vinyl numbers and the marker is fitted with a single aluminium peg which is both resistant to erosion and can be easily put into the ground.

The Windsor Tee Marker is part of the Windsor Tee Collection which consists of a divot box, tee marker and a litter bin. They are all made from moulded plastic. It will hold a plate for course or sponsorship details and is hollow so that it can be filled with sand or water for ballast.

The Sarrell Roller has been a part of the Patisson's range for some time but it has been joined by a one and two drum version which are expected to be popular with people needing to aerate a small area of land.

Patisson's has appointed Matthew March to its Sales team. Matthew will be looking after Patisson's ClubCall members as well as the trade export side of the business.

Boost for Huxleys

Huxleys has received keen interest and important orders from a number of prominent golf courses since taking on exclusive responsibility for the supply and installation of Campbell Turf.

Among the first customers to specify the advanced synthetic turf as a replacement for natural and artificial surfaces on golf tees and pathways were Marriott Hotels - Meon Valley, near Southampton; St Pierre, near Chesham; and Dalmahoy, near Edinburgh.

The most recent of the installations is at Dalmahoy, where eight Campbell Turf winter tees have been installed - four on the East Course and four on the West.

"We are delighted with the all-round improvement," commented Dalmahoy's Director of Golf, Brian Anderson. "I play off the surface myself and it is just like striking the ball from a good lie on natural turf."

Installed on the par threes on Dalmahoy's two 18 hole courses, Campbell Turf not only looks and feels like grass, giving golfers the ability to control the ball through the air, but the material will also accept a normal tee peg pushed into the pile.

Huxleys will be pleased to provide full information, quotations and details of other Campbell Turf installations in the UK on request.



Toro Scottish dealers A M Russell have scooped a hat-trick of successes in the turf maintenance equipment manufacturer's latest annual dealer awards. The Edinburgh-based firm ran off with the top accolade of Best Overall Dealer, as well as picking up the award for Best Sales Increase and producing the Salesman of the Year, in the shape of Alistair McRobert. The award for Best After sales Service went to A T Oliver & Sons, in Kings

Langley, Herts. Winners were presented with their plaques by Graham Dale, Managing Director of Toro distributors Lely UK, and Bob Buckingham, The Toro Company's European Sales Manager. Pictured from left to right are: John Cockburn, A T Oliver's Sales Manager; Director Joe Zawinski and Managing Director Brian Goudie, principals of A M Russell, Graham Dale, Bob Buckingham and Alistair McRobert.

Full range on offer at new academy

Work on the six hole Greenkeeping Academy at the Berkshire College of Agriculture for which the first turf was turned by then BIGGA Chairman Pat Murphy last year, has begun in earnest.

J & E Ely are the contractors. They have worked with the College previously and have close links with the architect, Donald Steele & Co., and many of the Rootzone sponsors including Banks Amenity Products and Bardon Aggregates.

The majority of trees were planted and the broad fairways shapes were cut over the winter.

The irrigation supply will hopefully incorporate the use of grey water and will demonstrate all types of systems from valve in head gear driven through to impact heads. These heads have been sponsored by Toro, Rainbird, Hunter, Watermation, Weathermatic and Nelson via suppliers. The consultancy has been sponsored by York Martin & Co.,

The greens have been designed not only to challenge golfers, but also to show the problems that certain shapes create for maintenance. The architecture also shows the green shapes approximately repeating the period of their construction.

The green constructions cover the 20th century. They include 1900s soil based Tom Morris shaping; 1920-30 clay boiled green.

A great deal of sponsorship has been received. For example the perched water table used by Donald Steele & Co. is sponsored by Banks Amenity products and Bardon Aggregates. The UGSA type is sponsored by Hepworth Minerals and Chemicals Ltd. The modern Dutch green which uses full sand rootzone has been sponsored by Roffey Ltd. who have also sponsored the recycled materials green finally a tee will be constructed using a hi-tech foam based system sponsored by Greenscape (UK) Ltd.,

The areas will be seeded with greens and tees sponsored by Mommersteeg Ltd.

Considerable time has been given by the Industrial Liaison Team, these include Malcolm Peake, and Martin Gunn, of Temple Golf Club; Allan Collis, of Castle Royle, and Ray Clarke, of Harleyford Golf Club.

Michael Bonallack, Secretary of the R&A who have been major sponsors, will open the Academy officially in the autumn of 1998.

Rain Bird set to fly stateside

Rain Bird has signed an agreement with American Golf to be the exclusive supplier of irrigation equipment to the world's largest golf course management company.

American Golf operates more than 260 private, resort and daily fee golf courses and practice centers in the U.S. and the United Kingdom.

The three-year agreement allows the exclusive use of Rain Bird products on all American Golf new course irrigation system installations and/or major renovations to existing systems. It is estimated that American Golf will use Rain Bird products in nearly 20 new course irrigation system installations in 1998.

"American Golf is very pleased to be teamed up with the golf industry's leading irrigation software and whole goods company," said John Meyer, American Golf's Director of Fleet Management and National Accounts.

"Rain Bird's exceptional products and expertise will help us continue our commitment to providing the most superior maintenance possible at our courses nationwide."

Ken Richardson reports on how things are hotting up, as competition deadlines loom...

A sporting chance

This month sees the deadlines for entry to three of BIGGA's major competitions, ie the TORO Award for Greenkeeping Excellence and Student Greenkeeper of the Year Competitions and the BIGGA Golf Environment Competition in association with Amazone Ground Care and Rhone Poulenc Amenity. The entry deadline is 31 May for all three competition so make sure that you have a chance to win by making sure that your entry is sent to BIGGA HQ by the closing date.

The TORO Award for Greenkeeping Excellence

The search to find the 1998 winner for the TORO Award for Greenkeeping Excellence is hotting up. You still have time to nominate your choice, however, as entries need

to be at BIGGA HQ by May 31, you need to make sure that your nomination is in the post, today.

Does your Head Greenkeeper deserve to be recognised for his efforts? Does your club want to win a TORO 3000 series triplex mower? Do you want to visit the GCSAA show in Orlando and the TORO factories in Minneapolis and California in February 1999 for free? If the answer to any of the above is yes then fill in and return an official entry form or telephoning Ken or Sami on 01347 838581. Remember, this competition is open to all Head Greenkeepers/ Course Managers. Initial judging, to select up to eight finalists will take place during June/July, by a panel of experienced, retired head greenkeepers, led by Walter Woods. The National Final

will be held in Harrogate on 25/26 October.

TORO Student of the Year

Entries for the TORO Student of the Year competition need to be at Aldwark Manor by May 31, 1998. Regional judging will take place during the week commencing July 27 when a panel of three judges will select up to eight national finalists. The National Final will be held in Harrogate on October 25-26 alongside the TORO Award for Greenkeeping Excellence Final. Make sure that your college or training provider submits an entry for this prestigious competition and you could win the TORO Scholarship for 1998, attending the University of Massachusetts for a six weeks turf management course as well as visiting

the TORO factories in Minneapolis and California.

The BIGGA Golf Environment Competition

This year, 1998, is the second year that BIGGA has run this Competition in association with Amazone Ground Care and Rhone Poulenc Amenity. Golf clubs throughout Great Britain are beginning to the benefits of entering which at the very least can give your club a detailed environmental survey and action plan. However, if you win then your club could win the £5000 first prize and the added bonus of being recognised as the top environmentally managed golf course. Complete your application form today and send it to BIGGA HQ or contact Ken or Sami for further details.

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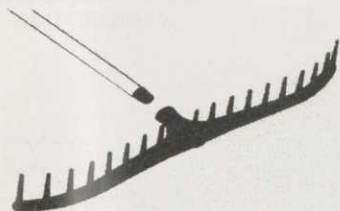
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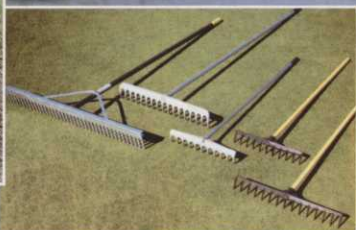
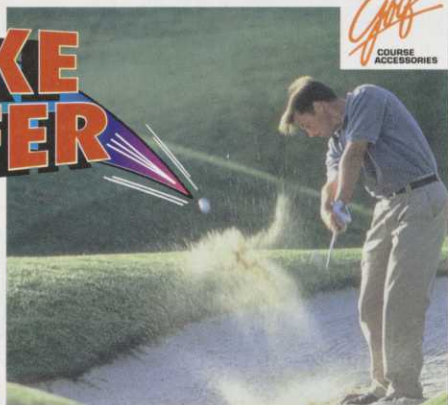
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Ad Ref 431



This month, Geoff Steel gives advice to those wishing to invest in a TESSA...

Saving graces

TESSAs (Tax Exempt Special Savings Accounts) provide excellent low risk savings for tax payers. Introduced by the Government to encourage savings, they offer tax free returns on deposits with a bank or building society. Normally 20% tax is deducted from the interest in a savings account, but in a TESSA the interest is paid without any tax deduction.

Savings can be from as little as £10 per month but £3,000 can be saved in the first year, plus a maximum of £1,800 in subsequent years up to £9,000 in total. The savings must be for a five year period.

All banks and building societies offer TESSAs but interest rates can vary widely. It is important to shop around to get the best rate.

Checking on the current published rate, one High Street name who regularly advertises as being good for savers is paying 6.6% on £3,000 savings. Another well known bank is paying 7.75% on the same amount. Over five years this can amount to a very significant difference in the returns.

There is a company called Money Facts that publishes the up to date interest rates of all the banks and building societies.

Anyone can obtain the current information by faxing them on 0336 400238. Calls cost 50p per minute and there are currently eight pages of information. Alternatively you can telephone me on my free telephone line 0800 783132 and I can provide a selection of current interest rates on offer.

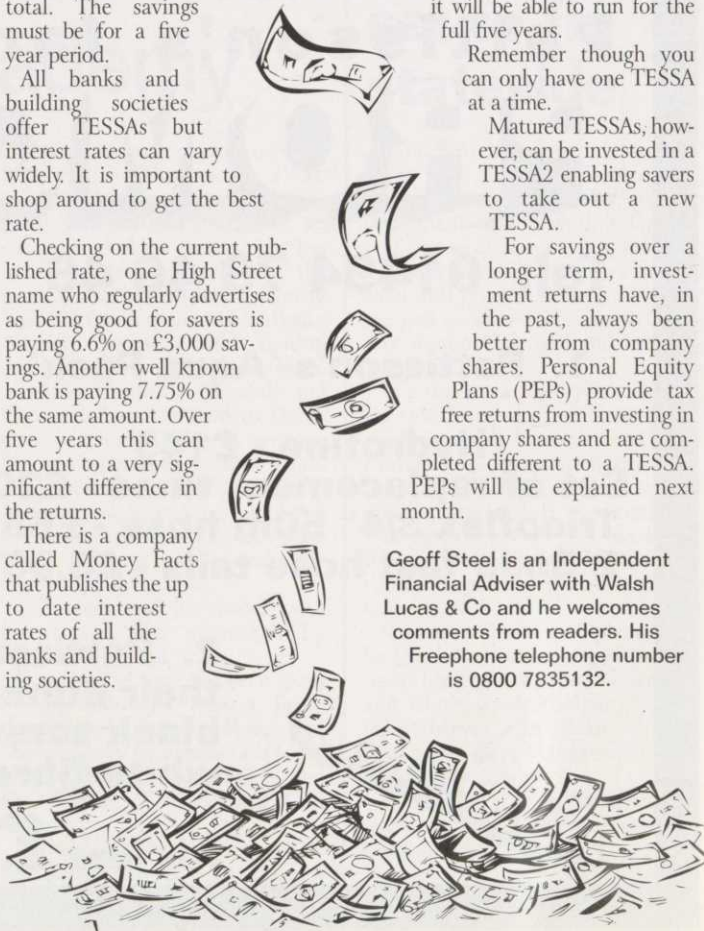
TESSAs are to be replaced by the Individual Savings Account (ISA) in April, 1999. The new ISA is more restrictive for savers in a bank or building society and anyone thinking of starting tax free savings should start a TESSA now. Once started it will be able to run for the full five years.

Remember though you can only have one TESSA at a time.

Matured TESSAs, however, can be invested in a TESSA2 enabling savers to take out a new TESSA.

For savers over a longer term, investment returns have, in the past, always been better from company shares. Personal Equity Plans (PEPs) provide tax free returns from investing in company shares and are completed different to a TESSA. PEPs will be explained next month.

Geoff Steel is an Independent Financial Adviser with Walsh Lucas & Co and he welcomes comments from readers. His Freephone telephone number is 0800 7835132.



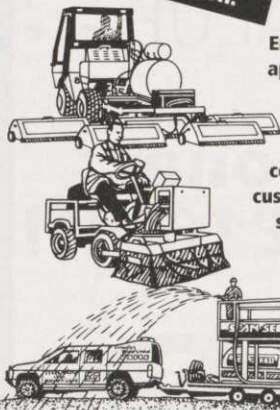
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**Roger Holt, of Agenda Training Limited,
looks at the Managers' safety role**

Crash courses

The Supervisor's and Manager's role in safety has been recognised as crucial to the success of business operations for many years.

A Company's commitment to Health & Safety is made in a number of ways, through its Policy Statement, its adherence to legislative requirements and through the design of jobs which fully recognise hazardous steps.

Once these are identified job training can be designed and safety campaigns mounted to ensure that, as far as possible, staff accidents and dangerous occurrences are minimised. Daily identification of hazards and risks which can occur is a vital plank in the management of safety and can be overlooked if a culture of continuous attention is not maintained.

Qualifications for safety professionals have long been widely accepted as a commitment of business to this area, but many firms do not have a full-time or part-time person in this role.

However, a qualification for managers has been developed by the Institute of Occupational Safety and Hygiene called the Managing Safely Certificate. This important qualification gives supervisors and managers a range of skills and techniques to improve this vital area and underpins the commitment of the business to safety.

There is no doubt that the cost of accidents and lost time will continue to rise and larger firms are now looking for evidence

of commitment to staff safety and welfare as a condition of dealing with suppliers.

The course, which is delivered over a three day and a two day module, incorporates the firm's safety procedures and covers the following topics.

- The legal framework for health and safety at work.
- The nature of commonly occurring hazards.
- Human behaviour which affects safe working.
- An indication of risk and why incidents, damage and accidents occur.
- The communication of health and safety.
- Revision and course assessment for certification.

The assessment is by a written paper and a short project related to the delegate's work place.

In order to discuss further how you can profitably take this crucial next step please ring Jean John on 012082 831973 or Roger Holt on 01203 696511 at Agenda Training Limited.



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Roland Taylor looks back (but does not remember!) to the days when greenkeepers used scythes to get a quality finish on their greens.

Would you scythe your green?



It's dawn and the sun is just breaking through the mist that shrouds the courses. A heavy dew sparkles on the greens, it is an ideal time for mowing and the greenkeeper and his staff prepare for another day. There is no roar of an engine firing-up, just the sound of stone against metal.

The year is 1890 and any form of mechanisation for many golf courses is still a long way off. Scythes keep the grass short and early morning is the best time to use them. The wet grass stands well to the blade. Mowing with a scythe required a great deal of skill, but in the right hands a reasonable surface could be achieved, although it was far from the immaculate playing surfaces of today.

Budding's patent gives us an idea of what it looked like - "circular sears, bare places and equalities con-

tinued for several days". The operation was slow - it took three men a day to cut an acre and then the clipping had to be brushed up and the green rolled. There were also long delays as golfers played the green.

For some, a salvation was available - but it was expensive. Although it was mainly the rich who played golf, money for maintaining the course was in many cases not readily available. Numerous companies had adopted Budding's cylinder mower design both here in the UK and in the USA, so there were plenty of mowers to choose from. The one favoured by most of the greenkeeping fraternity was the 'Greens Silens Messor Deluxe'. Built in Leeds, this mower had what was then a unique feature - it was self-sharpening. When the blades became dulled you simply reversed the cylinder drive

and they were sharpened - backlapping had arrived!

Although we do not know how many cuts per yard this machine produced, the finish was far superior to scything, and raking-up was eliminated. An 18" model cost £7.10s (£285 at today's prices) so it was relatively expensive.

Progress in the development of professional mowers was slow. This is probably due to the limited number of machines a manufacturer was likely to sell. An essay written by a greenkeeper in a 1929 competition illustrates the conservatism that was prevalent at the time. He states that he prefers the Greens Silens Messor and would not use a motor mower on his greens. Another entrant lists among his equipment the Ransomes Certes. This had been introduced in 1924, specifically for mowing fine

Would you
scythe
your green?

turf, and was to continue in production for 34 years.

Ways to increase productivity were being sought and a Mr Worthington of Shawnee, USA patented a power unit for taking three hand greens mowers (the forerunner to the triple mower). Known as the "Overgreen" it enabled one man to mow 18 greens in a day, but the machine was cumbersome and far from easy to operate. There was no way of lifting the mowers, so each half of the green had to be mown one way. The big benefit was that it released labour for other jobs.

Although the first commercial petrol powered mower had been introduced in the early 1900's, another three decades passed before the first fine turf machine for greens was introduced. Even then, greenkeepers were reluctant to change. Many were worried about the weight, and the possibility of oil or petrol being spilt. The Lloyds Pegasus was a lightweight

machine with a one horsepower engine that provided power only to the cutting cylinder. At normal walking pace it was said to produce a 105 cuts per yard.

Ransomes quickly followed with their Certes and, in 1952, introduced the Auto Certes, which was self-propelled.

Over in the United States, things were also happening and in 1970, Ransomes imported the Hann Tournament Triplex which they later manufactured. At the time, it must have seemed a world apart from what had gone before. The operator rode instead of walking. Cutting greens would never be the same again.

Over the last two decades, golf has become the most important sector for the major manufacturers of professional grass cutting equipment. As a result, competition has led to a considerable amount of money being spent on research and development. The combination of this, modern engineering technology and materi-



als has taken the cylinder and bed-knife cutting principle virtually to its zenith. Two other introductions, hydraulic drive and small diesel engines have been major contributors to the development of today's machines.

While it is good to have a choice when considering new equipment, the plethora of greensmowers now available can make selecting a machine more difficult and time consuming. A look around the marketplace and reading available literature is the first step towards the final decision.



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Pedestrian operated greensmowers

It is generally considered that this machine is still the best for getting as near to a perfect finish as possible, providing one has the labour and time available. What appears to be the modern approach is for a triple to be used to regularly mow greens, but for special events the pedestrian comes out.

A close look at the specification of most pedestrian greensmowers on the market reveals a lot of similarities. Sizes range from 18" up to 24" and engines vary only in the name on the label. In addition to quality of cut, features to look out for at a demonstration include handlebar design, control layout,

balance, straight-line tracking and noise levels. Grooming reels for removing surface stems and rotary brushes are available as an optional extra.

There is one model with a floating cutting unit that is said to be an advantage on heavy, undulating or stepped greens.

Ride-on greens mowers

The modern greensmower is a sophisticated piece of precision equipment and there are plenty of features to look out for. Unlike the pedestrian machines, there are con-

siderable differences between the brands now available.

Initially, weight and ground pressure were cause for concern (echos of the past). Designers have addressed these problems and today's machines use the latest technology and materials to distribute the loads and keep weight to a minimum. It is worth sorting through the literature for all makes of triple greensmowers, as there have been some interesting developments in recent years.

Mower heads

Very few greens, if any, are perfectly level, so a degree of both horizontal and vertical movement is necessary to avoid turf damage. Methods of mounting the units vary, with some manufacturers mentioning steering to avoid marking or scuffing when turning.

Power

Every type of power source is now covered with a choice of petrol, diesel or electric. Noise level is an important factor and engine manufacturers have addressed this aspect. The results are power units that produce a higher torque at lower rpm, and as a result, both noise and vibration are reduced. Noise emission levels are worth checking out between different models.

Ergonomics

The greensmower has got to be one of the most important pieces of

equipment on the course and, like all precision machinery, the more comfortable an operator feels and the easier it is to use, will reflect in the results. Seat positioning and adjustments, levers and pedals siting and console layouts all play their part and need to be taken into account when comparing different makes. Driving position and general layout can vary considerably. Other features that should be on the list for consideration include:

- Range of optional equipment
- Ease of interchange of attachments
- Monitoring systems, including engine and whole machine
- Safety features and early warning systems such as hydraulic oil leakages
- Maintenance and accessibility
- Availability of replacement parts and back-up service
- Operator training
- Finance packages to spread the load

The Demonstration

While this enables one to access a machine's ability it is also an opportunity for those who will use it to find out if they feel comfortable operating it, so everyone should be involved.

Third party endorsement

Supplier will furnish names of existing users but it should be borne in mind that they are likely to be



very satisfied customers. It is also worth doing your own thing and asking questions at shows and area meetings of the type of equipment other greenkeepers are using and its performance and reliability. I am sure you already do this.

The greens are the most focused point of every course. It is where the game is won or lost and where a greenkeeper's skills are most judged. A craftsman always buys the best and you deserve and need the best to keep ahead. Make sure you get it.

Finally, next time you fire up the latest greensmower with all its high tech spare a thought for your predecessors a 100 years ago, swinging their scythes in the early morning sunlight.



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Dr Stephen Baker, Head of Soils and Sports Surface Science at the STRI, examines suspended water table greens construction

Kept in

The suspended or perched water table method of golf green construction is now widely used, for example forming the basis of the USGA (United States Golf Association) construction method. However few people understand exactly how the suspended water table (SWT) works and this is important as the physics of water movement and water retention determine the advantages and disadvantages of SWT greens. Abuse of some of these soil physical principles, particularly in terms of material selection and quality control, can turn a potentially very successful method of golf green construction into a wet, water retentive putting surface or conversely one susceptible to drought stress that is very hard to manage.

How does water move in golf green profiles?

The movement of water in any soil is influenced by a number of forces acting in different directions. It is a bit like tug of war on the individual water droplets; if the force in one direction is greater than the force in the opposing direction then water will move in the direction of the greatest force. The first major force is gravity and just like the effect on Isaac Newton's apple this force will pull water downwards. If there was no opposing force, all water would drain out of a rootzone very quickly, taking soluble nutrients with it, and our putting surfaces would quickly revert to a mass of dry sand or soil.

Fortunately there are opposing forces and indeed forces that can be manipulated by our selection of rootzone materials and the depth of the rootzone layer. The forces acting against gravity are firstly the surface tension of the water and secondly water adhesion to soil particles. Surface tension occurs at the interface of air and water because of the forces attracting the water molecules together and, combined with adhesion, these capillary forces are sufficient to hold water in the soil. Think back to school days and you may recall physics lessons in which fine capillary tubes were put in a beaker of water - water would rise in the tubes and the finer the hole in the tube the higher would be the column of water. If you think of the pores (ie the spaces between sand and soil particles) in a golf rootzone as a series of capillary tubes this is an important first step in understanding the suspended water table.

Although most water movement is

downwards under the influence of gravity, there are times when the capillary forces are greater than the force of gravity an upwards movement will take place. A good example occurs if you put columns of dry sand in a container of water. Water will move upwards by capillary rise in exactly the same manner to the capillary tube the finer the sand the higher will be the level reached by the water. In a fine sand water may rise 300 mm (1 foot) or more but on a coarse sand the amount of rise may only be 100 mm (4 inches or less). Have a look also at stockpiles of sand drying out after heavy rain - particularly if the particles are uniform in size there is often a distinct line separating the drier sand at the top and the moister, therefore, darker, sand below. Yet again the same principle - the height of the line is determined by the grain size distribution of the sand.

Rates of water flow in porous materials

The other main factor that is important in understanding water movement in golf green profiles is to consider how quickly water will flow in pores of different sizes. If the pores are saturated (ie completely full of water) the situation is straight forward - the larger the pore or tube the faster the flow rate. Indeed the flow rate increases dramatically with pore size thus a fine sand may have saturated hydraulic conductivity of 500 mm/hr, while the comparable figures for a coarse sand and a gravel are in the order of 5000 mm/hr and 100,000 mm/hr. On the other hand as a soil dries out water is first lost from the largest pores thus water movement has to take place through finer and finer pores and thus flow rates decrease dramatically.

In the case of a gravel drainage layer, flow rates vary considerably depending on the moisture content of the gravel. When there is heavy rainfall and the gravel is close to saturation, water entering the gravel drainage layer moves quickly through the gravel to the underlying drains. However once water is lost from the large pores water movement can only take place along very thin films of water held tightly against the sides of the gravel particles and the rate of flow is virtually zero, certainly less than 1 mm per day.

The main process in the formation of a suspended water table results from the balance that occurs after initial drainage between capillary forces that

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