

# Learning & Development

## Greenkeeper Education and Development Fund



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Golden and Silver Key Membership is available to both companies and individuals.

For details, please contact Rosie Hancher on 01347 833834 or via [rosie@bigga.co.uk](mailto:rosie@bigga.co.uk)

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## SAMI COLLINS, HEAD OF LEARNING AND DEVELOPMENT, PROVIDES AN UPDATE

It's unbelievable to think that Christmas and Harrogate Week are both just around the corner. I have lists galore for everything you can possibly imagine so that hopefully nothing gets forgotten!

The Continue to Learn Education Programme has been very well received and places are selling fast on the workshop programme, keeping Rachael busy processing the booking forms. We will see the welcome return of some of our best selling workshops and the introduction of new subjects that aim to ensure you are equipped to handle the management tasks expected in today's commercial environment.

## An Introduction to Golf Course Design

This interactive, two-day workshop will study detailed design methods for greens, tees, bunkers, construction and irrigation. Lead by Simon Gidman and Howard Swan, delegates will prepare a nine-hole layout of a golf course and also look at one hole from their own golf course, analysing its design and how improvements could be made. One design will be selected and delegates will be given the opportunity to produce the renovated green in model form.

## Environmental Management

This two-day workshop will provide a practical, holistic and interactive look at Environmental Management. Tackling areas including the development of an ecological management plan, waste management, energy efficiency and environmental legislation. Delegates will also have the opportunity to request topics to be included in the course by completing a pre-workshop questionnaire.

## Health and Safety for Greenkeepers

An interactive two-day workshop designed to address current health and safety issues. It will focus on how to enhance your Health and Safety planning and recording and will identify common hazards and the issues surrounding them. A practical safety tour of the Queen's Suite and an overview of the BIGGA/GCMA Safety Management System will be included.

## Are Your Finances Below Par?

This one-day workshop is for Golf Course Managers, Golf Professionals and Club Managers and will explore the wider context of finance within the golf industry. The workshop will cover issues such as the impact of external forces on

financial decision making; the flow of finance; capital and revenues budgets; analysing risk and cost benefit analysis. The workshop leaders will encourage active participation and will illustrate theory with practical examples.

## Managing Relationships at Work

The role of a manager is challenging enough without having to deal with conflict among members of your team. This two-day workshop will examine and help to resolve those challenging relationships that can occur in the workplace. Presented in an engaging and informal environment this is a 'must attend' workshop for all those leading and managing teams.

## The Minefield of Appraisals!

Appraisals are recognised by leading management gurus as the most powerful and useful tool for managing a successful and efficient team when conducted and used in an effective manner. This one-day workshop will help delegates to understand the importance of appraisals, how to conduct them and how to use the outcomes to make a difference.

## Stress Awareness Workshop

Stress can cause untold problems within the workplace. This one-day workshop will help delegates recognise stress in themselves and others and will provide a practical guide to developing skills and strategies for change.



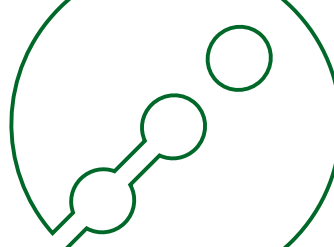
The Continue to Learn Seminar Programme The Seminar Programme commences on Tuesday 22 January 2008 and offers a wide array of subjects for all who are attending Harrogate Week. A discount scheme is in place for bookings of two or more seminars:

No. of Seminars	1	2	3	4	5	6
Full Price	£25	£50	£75	£100	£125	£150
You Pay	£25	£40	£55	£60	£65	£72
Discount %	0%	20%	27%	40%	48%	52%
Discount £	£0	£10	£20	£40	£60	£78

For a full list of seminars please visit [www.harrogateweek.org.uk](http://www.harrogateweek.org.uk)

To check availability for any of the Continue to Learn Workshops and Seminars contact Rachael Duffy on: 01347 833800 ext: 522.

# Membership



MEMBERSHIP

## VANESSA DEPRE, MEMBERSHIP SERVICES OFFICER, PROVIDES AN UPDATE

### BIGGA E-Newsletter

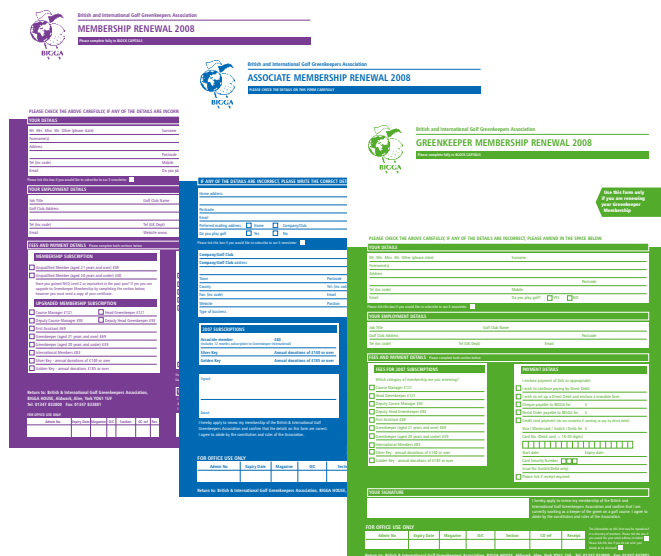
We will be launching an e-newsletter soon to keep you all up to date on BIGGA affairs.

If you would like to subscribe to our E-Newsletter just send me an email on: [vanessa@bigga.co.uk](mailto:vanessa@bigga.co.uk) with E-news as the subject.

Any suggestions concerning the content would also be appreciated.

### Time's Running Away

Don't forget to get those renewals in as soon as possible if you don't want to lose the BIGGA membership benefits you are currently getting. If you've lost your renewal form just ring us and we'll send you a new one.



If you don't want to pay your subscription fee all in one go you can pay us in five or 10 instalments by Direct Debit. If you want a Direct Debit Instruction form get in touch with us on: 01347 833800 and we'll get one to you immediately.

If you are paying your own BIGGA Membership subscription fees you can apply to the tax office for a refund of 23% of the subscription amount. If you are a Head Greenkeeper or Course Manager paying £121 then this could save you nearly £28.

This is because BIGGA is recognised by the Inland Revenue as a legitimate professional body. Membership fees to such bodies are eligible for tax relief. All you need to do is get a form from us and send the completed form to your local tax office.

If you are retiring or leaving the trade, you don't have to say goodbye to your BIGGA Membership. There are many different types of memberships that BIGGA can offer you -

For retiring greenkeepers BIGGA offers Retired Membership with full benefits or Retired Membership with limited benefits.

If you are leaving the greenkeeping profession why not join BIGGA as an Associate Member so you can still be a part of the Association.

For more information on any of the above you can give us a call on: 01347 833800

### BIGGA WELCOMES

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## 20–24 January 2008

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The Minefield of Appraisals!  
Environmental Management  
Are Your Finances Below Par?  
Noise & Vibration Management  
Managing Relationships at Work  
Current Environmental Legislation  
Introduction to Golf Course Design  
Terms and Conditions of Employment  
Responsibilities & Managing Exposure  
Pensionforce: Acknowledging the Message  
Workplace Bullying: What You Can Do About It

*To register, book education or find accommodation, visit*  
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# TIME TO TALK

[www.bigga.org.uk](http://www.bigga.org.uk)

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AND CHECK OUT THE LATEST CHAT FROM THE GREENKEEPING INDUSTRY



# RECONTOURING YOUR PROBLEM GREENS

By Tim Butler

**Severe contours and slopes on golf greens are a commonly found problem, leading to limited locations for hole placement, excessive wear in certain locations on the green and frustration among many golfers.**

We have all played on courses where at least one hole was almost impossible to play, with golf balls often landing nicely on the green only to roll miserably off. This problem, I have found from experience, is often apparent on older courses, which, when designed, were playable due to high mowing heights practised at the time. However mowing heights of one-tenth inch are now common and ball roll-speeds have increased dramatically.

When many older courses were built, green-speed was also not an issue. In recent years, though, the 'need for speed' has really caught on among many golfers and to be honest many greenkeepers and course managers are faced with desperate plights to maintain quality playing surfaces in situations where the hole can be located in only a very limited number of areas.

The first thought that springs to many people's minds is reconstruction, yet in reality this is not feasible for many courses. Most course managers do not have the luxury of being allowed to close particular greens for many months on end in order to facilitate complete reconstruction. And the cost is prohibitive to many in the industry.

This is where the concept of changing the contours of problem greens comes into play. The idea revolves around slightly changing the architecture of problem greens to make them more playable with less severe slopes. I realise that certain courses will not be able to change their green architecture due to historical reasons. But there will be a large number who will probably be able to slightly alter their problem greens without overly changing the character of the course.

## THE PROCESS

I have come across a few golf courses that have had similar problems and decided to try this method. They include the Chevy Chase Club in the USA.

The concept starts with carrying out a detailed study of problem greens to get an understanding of the slopes on the green.

At this stage, a sportsturf agronomist with a deep knowledge of rootzone specifications needs to be brought in to get an in-depth understanding of the soil physical analysis. The agronomist needs to find out as much information as possible about the existing rootzone because some rootzone material will need to be acquired if it is decided to raise part of the green profile. It is imperative that one finds out the exact percentage of course, medium, fine, very fine, silt and clay particles that are present within the rootzone. Once this is done, the agronomist should be able to source a rootzone material or get a rootzone mix blended for the purpose. If the selection process is not carried out properly, then the project will likely turn into a failure within a few years.

Areas that are excessively high may possibly be lowered and low areas may be raised. Grade stakes are put in place to ensure that slopes and grades are delivered. Basically the turfgrass in areas that are planned to be changed should be stripped off to a depth of about a half to one inch (2). As this is being carried out, each sod strip should be numbered to



ensure that it can later be laid back exactly in the position from which it was removed (2).

Any material removed from high areas is usually kept to fill in low ones, provided that the rootzone is suitable and contains low organic matter levels and so on. It is imperative that the underlying gravel and drainage layer on the green is not disturbed during the work and extra care must be taken to keep heavy machinery off the green.

If rootzone material is added to low-lying areas, then adequate rolling or compacting is needed to minimise settling effects prior to re-installing the green sod. In some instances, courses may opt for new sod instead of the original, which is all right provided that care is taken to ensure that the thickness of sod will match in with depth allowed for on the rootzone.

Issues with differences in grass colour are often experienced when sod is imported into the course. This colour difference, likely due to nutrition, will disappear over time. Once the sod has been set in place, some shrinkage is likely and scalping from mowers should be avoided in order to keep weeds out and aid recovery.

Once the sod is in place, sand dressing is usually applied to the sod seams and good irrigation carried out. The aim is to get the sod rooting as quickly as possible, so that the green can be opened up. Once rooting

occurs, core cultivation and heavy top-dressing are often applied to open up the rootzone, reduce any compaction and promote rooting (2).

Slight settling is likely and a heavy top-dressing programme may be needed to level off the surface. Great care must be taken of remodelled areas to ensure that rooting mass increases rapidly allowing the green to re-open as quickly as possible.

#### RESEARCH

The first thought that might spring to many people's minds is the issue of changing the depths of the rootzone profile. Many golf greens are constructed to USGA specification with a 12in rootzone sitting on top of a gravel layer. Some may feel that lowering the high spots and raising the lower ones on their greens during the recontouring project may have an adverse effect on water movement through the rootzone.

Having said this, I would like to talk firstly about two difficulties that arise on many courses: localised dry spot (LSD), and black layer. Localised dry spot is found on all turfgrass types and rootzones, but is particularly prevalent on sand-based rootzones. LSD is caused by soil particles becoming coated with organic substances, which repel water, causing the soil to dry out and preventing rewetting (Vargas, 2006, Pers. Comm.).



This condition is naturally-occurring and I know from experience that many course managers throughout Ireland and the UK are spending a lot of money on wetting agents and cultural practices, trying to control this phenomenon. Black layer is a common problem on sand-based rootzones. Chemically, black layer is a deposit of metal sulphides, which form when hydrogen sulphide gas reacts with metal elements in the soil (1). Black layer occurs under anaerobic conditions. Research by Nektarios et al. (1999) reported that drainage in golf green rootzones is not always uniform and that, in an unsaturated rootzone, water may move laterally along the rootzone/gravel interface to lower areas in the green rather than vertically from the rootzone into the gravel layer (3). This may lead to dry areas forming at high points and saturated zones in lower areas on the green (3).

Due to this problem, research was undertaken at Michigan State University under the guidance of Professor Kevin Frank to look at the influence on water movement through the profile, of building a variable depth rootzone on a golf green. The rootzone was 8in deep in high areas and 16in in low-lying parts of the green. The green was fitted with time domain reflectometry probes to measure soil volumetric water content.

Results showed that modifying the depth of rootzone mix improved the uniformity of volumetric water content across the surface of the putting green. This shows that success can be achievable if very careful planning is given to a recontouring project. It is critical, though, that raised areas do not receive more rootzone, as this may lead to more localised dry spot issues. It is also important to remember that, during normal construction activities, a rootzone depth of at least 12in is given from low to high areas (3).

Recontouring golf greens is commonly practised with varying degrees of success. This process may help to improve the course from both a playability and management viewpoint and reduce the large expense associated with reconstruction. However, a specialist agronomist is vital to ensuring the future success of a recontouring project.

#### ABOUT THE AUTHOR

Tim Butler is studying for a PhD degree in Turfgrass Science at both University College Dublin, Ireland, and Michigan State University, USA. Contact Tim at [timmbutler@hotmail.com](mailto:timmbutler@hotmail.com)

#### REFERENCES

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# EQUIPMENT WASH-OFF

*Water Management Legislation by Tim Earley*

## **ARE YOU AWARE NEW GROUNDWATER REGULATIONS ARE NOW IN FORCE?**

With the extensive list of environmental and water protection regulations, it would not be surprising, if you are unsure of what regulations are in force, how this impacts your golf course and what you need to do to ensure compliance.

As ignorance is no excuse, hopefully the following will make interesting reading. That said, this is at best a simplified overview of complex and changing legislation and does not constitute legal advice!

Environmental protection legislation was issued many years ago and has been progressively added to in the intervening period. The confusion arises in that many of the additional Acts do not replace existing legislation, but merely reinforce it. It is not therefore possible to go to one reference point.

## **CURRENT WATER MANAGEMENT LEGISLATION**

To give a flavour, the primary legislative Acts you are expected to be in compliance with include the Environment Protection Act 1990 and Water Resources Act 1991. These Acts have been regularly added to in recent times. Recent notable additions include the Environment Act 1995, the Groundwater Regulations 1998 and Water Act 2003. In addition

there are a number of European Directives in force (e.g. Groundwater Directive 80/68/EEC), which everyone should be in compliance with. This list certainly makes for good bed-time reading!

## **WATER FRAMEWORK DIRECTIVE**

Current water management legislation is widely acknowledged as patchy and inconsistent, liable to lead to confusion. The new Europe-wide Water Framework Directive intends to resolve this by rationalising and updating existing legislation with consistent legislation for the whole of Europe. Implementation of The Water Framework Directive began in 2006, with enactment of the new legislation currently planned to start in 2009 and completion of implementation by 2015. However, in case anyone thinks they can delay doing anything until 2009, preparation of this new legislation is bringing a new emphasis and increased attention to potentially polluting activities and the current legislation in force will be actively enforced.

## **Summarising the current position:**

### **ENVIRONMENTAL RISK ASSESSMENT**

The Environment Agency require that an Environmental Risk Assessment should be undertaken for every facility regardless of size. Environmental

risk assessment and the management of risk are the bases for preventing pollution of the environment. In particular, when designing new facilities, the Environment Agency stress that emphasis should be placed on hazard prevention rather than risk management. (i.e. avoiding the problem in the first place). This requirement has taken on a new urgency following the recent wide-spread flooding.

The Environmental Risk Assessment should take account of:

#### **Hazard Identification**

Polluting materials handled (e.g. fuels, detergents, chemicals etc.)

#### **Possible Scenarios**

Consider what could go wrong (e.g. spillages, leaks, vandalism, flood).

#### **Impact of possible Scenarios**

The potential scale of the incident and environmental impact (e.g. leak, flood)

#### **Likelihood of Scenario**

Occurring How likely an incident is likely to happen (e.g. are you in a flood prone area?)

#### **POLLUTION PREVENTION GUIDELINES**

Until the Water Framework Directive is implemented, the current legislation is supported and enforced through a series of Pollution Prevention Guidelines (PPG's), emanating from the Groundwater regulations 1998. Twenty plus guidelines have been issued to date addressing specific activities known to cause pollution.

Several of these PPG guidelines directly impact the operational activities

of golf courses, including refuelling, chemical handling and equipment wash-off:

e.g.

PPG 2 - Fuel Oil Storage (revised Feb 2004)

PPG 7 - Refuelling Facilities (August 2004)

PPG 9 – Pesticide Handling (replaced by DEFRA Code of Practise)

PPG 13 – Vehicle Washing and Cleaning (revised July 2007)

For example, the new regulations require that washing operations must be carried out in a designated, kerbed area which drains to the foul sewer, or A CLOSED LOOP RECYCLING WASH-OFF SYSTEM MUST BE USED. If neither of these options is installed, there is a little-used third option available of installing a sealed collection tank for off-site disposal by waste disposal specialists, but this is not realistic in most cases as it becomes prohibitively expensive every time it rains!

#### **PERSONALLY LIABLE**

Regular cleaning of maintenance equipment is essential to ensure the long life of expensive equipment. In addition, chemical sprayers require washing and flushing out after applying pesticides and fungicides. This wash-off water potentially contains a range of serious contaminants, including; oil, petrol, diesel, grease, pesticides, fungicides etc.

It is now a criminal offence to allow certain substances including mineral oils, detergents and chemicals to enter surface drains, watercourses or Soakaways. If you are not complying, you are personally liable for breaking the law, with the threat of a fine of up to £20,000 and imprisonment for a serious infringement! Even if a case does not go to court, the cost of





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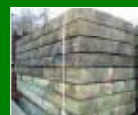


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repairing the damage still has to be met, which could be very expensive (e.g. replacing fish which have been killed).

### ENVIRONMENTAL CONCERN

Environmental concern is easy to understand as golf courses routinely handle quantities of 15 litres upwards of concentrated pesticide at a time when filling a chemical sprayer. The Environment Agency advise that as little as 0.5 litres of neat pesticide is sufficient to exceed the permitted limit of the whole of London's water supply! The consequences of an uncontrolled spillage are, therefore, easy to imagine.

These new regulations now strictly control the amount of contaminants in groundwater to levels that are nearly undetectable. The Environment Agency's latest detection equipment can reliably trace the source of pollution to parts per billion. If the club has failed to make proper provision and an accident occurs, the livelihood of the Head Greenkeeper and the reputation of the golf club is potentially being put at risk.

### DOES AN OIL/WATER SEPARATOR COMPLY?

No, an Oil/Water separator is not adequate to handle the discharge from the golf course wash-off area, unless this discharge is to the foul. An Oil/Water Separator is designed for the settling of heavy solids and separation of free hydrocarbons, which it does very well. It does not have the technology to remove chemicals, which are routinely used by golf courses or emulsified hydrocarbons (oils) resulting from the addition of detergents during washing or using a pressure washer. It will also not treat another critical pollutant, Biochemical Oxygen Demand (BOD) which is caused by organic substances, including grass clippings washed off the equipment.

### ENVIRONMENTAL ACTIVITY CENTRE

A major innovation to guarantee the removal of any risk of groundwater pollution from golf course maintenance activities has been introduced by a company called Waste2Water. A number of other systems are available from alternative suppliers, although Waste2Water claim the advantages of their Above-Ground system include ease of maintenance and, in the event of flooding, there is no risk of release of partially treated contaminants, which could potentially arise with gravity-fed oil water separator/underground systems.

The Environmental Activity Centre simply consists of a concrete wash pad sloping into a collection sump. On the periphery of this area, installation of as many potentially polluting storage/activity areas as possible is recommended. This includes the diesel tank, chemical store, chemical mixing tank, old oil storage etc. At the hub is the Biological Recycling Wastewater Treatment System, which takes care of spillages of oil, petrol, diesel and chemicals etc., converting them to harmless carbon dioxide and water.



### CREATING YOUR OWN ENVIRONMENTAL ACTIVITY CENTRE

Creating an Environmental Centre could not be easier. This can be as simple as installing your diesel tank on the edge of the pad with the Recycling Wash-Off System installed at the heart of the operations area, often retro-fitting into an existing area to minimise the budget. The Biological Recycling System removes all contamination risks, reduces water usage by a massive 90% and tidies up one of the worst aspects of golf course maintenance. Three in one can't be bad!

If you would like further information on the Waste2Water System or a copy of the Pollution Prevention Guidelines please call. Tel 01782 373 878 / E-mail: [info@waste2water](mailto:info@waste2water).



# IMPORTANT CHANGES TO PESTICIDES LEGISLATION – AN UPDATE

*Jon Albutt takes some time to explain the ramifications behind the recent EU decision not to endorse an amendment which would have seen chemicals banned on all amenity areas*

**The EU Parliament, at its full plenary session on October 22, 2007, voted against an amendment to prohibit the use of pesticides in all public amenity areas; it also voted to adopt the, “Thematic Strategy for the Sustainable Use of Pesticide” with some minor amendments to Article 11.**

Over the next months there will be a lot of work in the EU Council Committees to clarify the detail of exactly what this means to all users of pesticides for the future. Under the current timescale these changes must be in place within member states own legislative structures by the end of 2010. The UK already has in place arrangements that meet many of the proposed changes via our statutory and voluntary schemes. The most significant aspects of the new Directive are:

## **ARTICLE 5 - TRAINING AND EDUCATION**

Define a minimum standard of training and certification for users and advisors. Restrict pesticides to professional users, who should be aware of the risks and hazards of the use of pesticides.

Since the introduction of FEPA and COPR in 1986, we have had statutory controls in place with clear guidance on the need for Certificates of Competence. Under the Voluntary Initiative we also have the National Register of Spray Operators (NRoSO) Scheme whereby certificated spray operators, and their supervisors and managers, can maintain their qualification up to date by the process of continuous professional development (CPD) – This scheme is unique to the UK. So far the uptake of the NRoSO Scheme in amenity horticulture has been very poor and although by no means certain it is likely that this type of scheme could well become a statutory requirement, we must wait to see the detail of the Directive.

## **SPRAYING EQUIPMENT**

All new equipment will conform to environmental safety standards. All equipment in use to be inspected annually. Records to be kept for the life of the equipment.

Under the unique UK voluntary scheme the National Sprayer Testing