EXPAND YOUR GOLF BUSINESS IN EUROPE

- Visit over 100 Exhibitors
- Learn about the latest products and technologies
- Save money by taking advantage of exclusive GCE offers & discounts
- Golf information seminars
- Prestigious Golf Investment & Development Conference

Golf Course Europe '93 is the premier European meeting for golf course and resort design, construction, maintenance, irrigation, equipment, and golf club management. It is the only European exhibition that brings together all the big names in golf and offers visitors a complete and comprehensive view of the industry. The GCE '93 Golf Investment & Development Conference will feature all the leaders of the industry, the European Golf Federations and renowned experts on golf course development, investment, financing and operation. Don't miss out on this important golfing event.

Register today!

Five Key Reasons to Attend
- All the big names in golf will be at GCE '93—Toro, Rain Bird, EZ-GO, Textron, Nicklaus, Palmer, Dye, KPA, Player, Waterman, Hunter...
- Make valuable contacts and expand your business on the GCE '93 exhibition floor.
- Be on hand for exciting new product announcements from leading vendors.
- Compare features, benefits and pricing on the most comprehensive array of golf products, equipment, and services.
- Improve your position and expand your golf business by learning from our conference speakers on operation, financing, and investment in European golf developments.

GOLF COURSE EUROPE '93
DECEMBER 1-3, 1993
PALAIS DES CONGRES, PARIS, FRANCE

☐ YES! I am interested in expanding my business in Europe, and want to exhibit at GCE '93. Please send me a free exhibitor package.

☐ YES! I would like to attend the Golf Development Conference. Please send me a free conference program and speaker listing.

☐ I would like to visit the exhibition.

Name
Company
Address
Code Postal
City
Country
Tel
Fax

Please return this coupon by Fax (or mail) to: GCE '93 – GEE 6, Hart Street, Henley On Thames, Oxon RG9 2AU, United Kingdom
Tel 44-491-517900 • Fax 44-491-410321

The cause of such root breaks is simply identified. It is almost always due to changing the top dressing in physical character and quality. This most commonly occurs when heavy sanding had earlier been carried out, often in a misguided attempt to firm up soft, soggy putting surfaces. There is one golden rule in top dressing and that is that it should be consistent. Ideally it should be the same as the root zone, but in our less than perfect world this is not always possible or sensible. With new greens built with specially mixed, sandy, humus-enriched root zones, it is sensible and easy to use the same mix for top dressing to ensure a consistent and uniform profile right down to the stone carpet. If however, as I always do, I have seen recently, the root zone is very unsatisfactory (in a specific case something like 25% of fines and virtually no humus, poor draining and root inhibiting) what do you do? It would be silly to use a humus-enriched sandy top dressing, as the roots would have no incentive to delve deeper for nutrients, and improved surface conditions would encourage shallow rooting annual meadow grass. Using the same awful root zone mixture would seal the surface and cause flooding, poor drainage after rain, and soft putting surfaces. Pure sand is the alternative — and inevitably causes root breaks.

Worse still, when heavy sanding starts to show problems, advice is unwisely proffered to change the mix — and then one really is in trouble. After a fairly short time, the grass lives on the top. There is no attraction for roots to penetrate sterile and often compacted (because humus-free sands and soils become destructured and consolidated) layers beneath. This in a way is comparable with a perched water-table green where successive layers 'fill' with water, and when the total water holding capacity of that layer has been reached then the water can flow to the next layer (as its weight...
THE UNWELCOME BREAK

by JIM ARTHUR

overcomes the surface tension of the strata above). In this case, however, we are upside down! The largest particles are on the surface and there is no attraction for water or roots to penetrate inhospitable compacted lower levels. Roots cease, or move laterally, there is no anchoring or stability and a clear root break shows. Such root breaks persist for many seasons. Intensive deep aeration may help, but is often counter-productive because the turf is so weakly anchored that it tears up. Anyone who has Vertidrained greens with a root break will have all too lasting memories of the disturbance, especially if there has been some slitting beforehand. But one has to be cruel to be kind and persist, which means telling one’s members well in advance what to expect – and the reasons why they should be understanding.

As with so many problems in greenkeeping, this is self-inflicted – and the tragedy is that those responsible for the disaster (be they ignorant advisers, inexperienced greenkeepers or interfering green committee men) will have moved on – often to repeat their heresies on other courses.

In severe cases, when frequent deep aeration would leave the greens looking like a battlefield, it may be necessary to lift the turf, (if it will lift mechanically, which is not always the case), cultivate the turf bed (taking the opportunity to ameliorate a structure-less soil with humus worked intimately and deeply into the root zone) and then after proper preparation of a turf bed replace the turf (or improved quality turf).

If your greens have been mismanaged by predecessors, e.g. by heavy sanding, then it is not always wise to switch to an organic rich top dressing, as in a year or so the buried sand layers will cause a break.

In the case of new greens it is sensible to match the top dressing with the root zone ‘analysis’. If you have been silly enough or unlucky enough to have taken over American type pure sand greens, then you must stick to pure sand of the same physical analysis – and this means that such greens have limited powers of retention of water and nutrients and if not ‘fed and watered’ regularly and intensively, they will die. If you feed, you will end up with Poa annua. The moral is don’t start ‘feeding’ when old so and so was ‘peat mad’. There, even longer ago, is the time when we were using the wrong sand – or charcoal. One can even date the ‘rings’ and say with confidence that 30 years ago ‘someone’ was doing the wrong things but that ‘someone’ is probably not any longer capable of being got at! Ah well, such is life. But beware of being the same miscreant being criticised in 30 years time! Follow sound greenkeeping practices and do not chop and change and the grass will thank you by developing a deep, uniform root system, with no trace of root breaks and all their attendant problems!

Looking at the profiles of hole cuts can be very revealing. It is like the annular rings on a tree trunk. Look, 20 years ago, there is a thick black band when old so and so was ‘peat mad’. There, even longer ago, is the time when we were using the wrong sand – or charcoal. One can even date the ‘rings’ and say with confidence that 30 years ago ‘someone’ was doing the wrong things but that ‘someone’ is probably not any longer capable of being got at! Ah well, such is life. But beware of being the same miscreant being criticised in 30 years time! Follow sound greenkeeping practices and do not chop and change and the grass will thank you by developing a deep, uniform root system, with no trace of root breaks and all their attendant problems!

BUY DIRECT

Why pay the middle man? Buy direct from our quarries at competitive prices. Nationwide deliveries. All mixes to your specification. For prices, samples and analysis please contact:

JEAN at WHITE MOSS SAND QUARRY (Cheshire) on 0270 884288
Root Zone  •  Top Dressing  •  Sand  •  Soil (Screened)  •  Peat (Screened and As Dug)

JULIE or JENNY at BETLEY ASH & AGGREGATES on 0270 820426
Ash (Black and Red)  •  Drainage Media  •  Ash based Soil  •  Granular Fill

Our products are currently being supplied to major golf courses and construction projects nationwide.

ALL MATERIALS FROM OUR OWN QUARRIES

GREENKEEPER INTERNATIONAL September 1993 11