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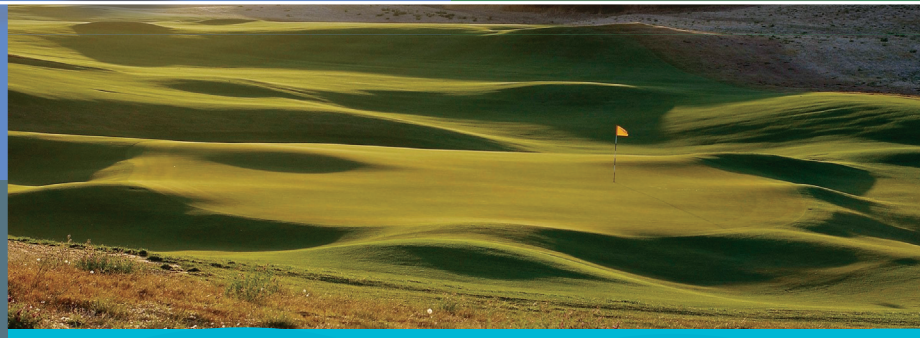

RESEARCH
- UWA kikuyu project
- Couchgrass cross-breeding

BY THE NUMBERS – AND LETTERS
Managing the Penn series bents under Australian conditions

FROM ST ANDREWS TO THE SAHARA
A technical officer's pilgrimage

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SPECIAL FEATURES

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In Every Edition

sharing experiences

March was a special month for me. I was fortunate to have my old man travel across from New Zealand to spend a few quality weeks during which time we took in the Formula 1 Grand Prix and played a few rounds of (bad) golf.

Having been in a different country from my dad for the past five years, you learn to make the most of these brief get togethers and we whiled away the time reminiscing and sharing our experiences of where our lives were at this particular juncture.

During his stay I took him down to Moonah Links on the Mornington Peninsula, home of this year's Australian Open. The golf was pretty tragic on my behalf – an 11 and two nines on my Open scorecard were enough to bring to me too my knees on Leigh Yanner's firm and fast Penn A1 greens.

So what does all this have to with Vol 7.2 of ATM? Two reasons. First, one of the great strengths of the Australian golf course turf management industry is the ability and willingness of its members to share with others their experiences for the betterment of the profession. Second, Moonah Links is one of a number of courses in Australia that has recently adopted the new generation Penn series bentgrasses.

In ATM's cover story this edition, eight of Australia's foremost superintendents share their management experiences with the new Penn bents. The feature examines a gamut of management issues ranging from thatch management and *Poa annua* control right through to the playability and presentation of these superfine varieties.

For those superintendents thinking of converting their greens to these bents, then this is a must-read article.

Elsewhere in this edition, which also incorporates further changes to the look of the magazine, Andrew Peart gives us a travelogue of his recent jaunt to the UK and Middle East. We have spared readers a hole-by-hole account of his first ever round at St Andrews, but he swears black and blue he posted an 82 (for the front nine anyway).

This edition's other special feature heads to Melbourne Grammar School's major new sporting complex Edwin Flack Park. Due to the many unique construction challenges the project faced, it is set to be entered into the ACEA Awards for environmental excellence. Construction manager for the project John Harding gives us an insight into this four year assignment.

Speaking of construction, John Neylan travels around the country for his AGCSATech Update, detailing some of the new and challenging golf course projects underway in Victoria, Queensland, Western Australia and New South Wales.

Finally, this edition's research section examines David Nickson's Australian first in the development of two new vegetative couchgrass cultivars, while Dr Lousie Barton outlines the University of Western Australia's new kikuyu research project.

Enjoy the read.

Brett Robinson
Editor

Contributors to Australian Turfgrass Management Volume 7.2

Rob Ashes (The Australian Golf Club)
Louise Barton (University of WA)
Martyn Black (Castle Hill CC)
Rick Brandenburg (NCSU)
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Rod Cook (The Grand Golf Club)
Mark Couchman (Cromer Golf Club)
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Brad Sofield (Gosnells Golf Club)
David Warwick (Avondale Golf Club)
Mark Warwick (Muirfield Golf Club)
Leigh Yanner (Moonah Links)

foreword thinking

AGCSA CHIEF EXECUTIVE, STEVEN POTTS

Welcome to the April-May edition of Australian Turfgrass Management Magazine. I have received some excellent feedback about the design changes made in the previous edition and I think you will all be pleasantly surprised with the further changes made this time.

During the first few months of 2005, the AGCSA has been working hard finalising a review of the association and the development of a strategic plan through to 2009.

The process included consultation with stakeholders, members and office-bearers of the AGCSA, and indicated a number of issues relating to the association requiring attention in the coming years. Those issues have led to the development of major strategies for the organisation to pursue in the near future.

The strategic plan does not outline every single activity the AGCSA will undertake in the next few years. It is deliberately issues-based and focuses on those issues identified as being critical to future good management and consequential success. That is not to say the AGCSA will ignore its day-to-day activities. On the contrary, by effectively dealing with these issues, the AGCSA will be better equipped to undertake its normal management and leadership roles.

Some of the issues addressed in the strategic plan include; the recognition of the profession; membership; communication; environmental management; education; Australian Turfgrass Management magazine; AGCSATech; AGCSA Board governance; Australian Turfgrass Conference; international golf course management associations; media; and the AGCSA website.

The monitoring of the strategic plan will be by the AGCSA Board and will continue to be included as an agenda item at each board meeting.

As we begin April, and ponder just how fast the year is going, the AGCSA is gearing up to host the 21st Australian Turfgrass Conference in Moama from 6-10 June. One of the major reasons that the regional program has been introduced this year is to encourage participation from regional turf managers, and to enable the bigger facilities to bring their assistants to expose them to the additional education and networking opportunities with industry peers.

This has been well received as we have already had many registrations returned. I would encourage everyone to take advantage of the early bird discount, which is in place until Friday, 15 April. If you have not received a registration brochure, please contact the AGCSA on (03) 9548 8600 or register online at www.agcsa.com.au.

This year's conference theme is looking at how to save time and money, which is a constant challenge for all turf managers. Keynote speakers for the 2005 conference include Dr Louise Barton (University of WA), Dr Don Loch (QDPI), Professor Ken Marcum (University of Arizona), Craig Day (Weddin Agricultural and Chemical Services), Terry Muir (Environmental Business Solutions), Jon Griffin (Griffin and Company), John Neylan and Andrew Peart (AGCSATech).

The keynote speakers will be covering budgeting, nitrogen leaching, correct spraying techniques, new warm-season grasses, water management plans, Kuwait experience and multiple water reuse (sewer mining).

The 2005 AGCSA Awards brochure has also been distributed and I encourage all superintendents to consider what they or their colleagues have achieved and whether they should be nominated in order for them to receive the recognition they deserve. The AGCSA Awards are the pinnacle of recognition for members of the golf course management industry.

In closing, as an additional benefit for members, the AGCSA has recently posted the updated Material Safety Data Sheets on the website in the member's only section.
Enjoy the magazine.

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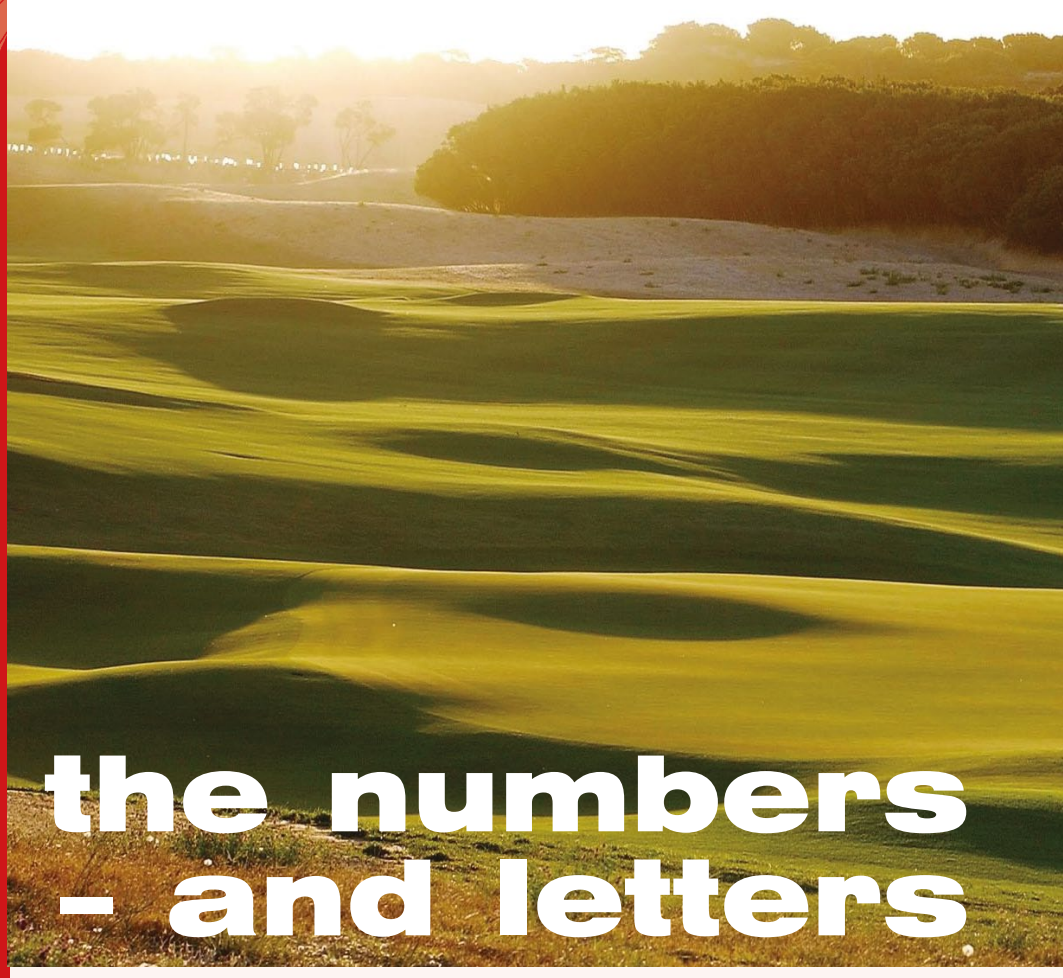


By the numbers – and letters

In the late 1990s, The Australian and Concord golf clubs in Sydney were among the first in Australia to convert all greens to the new Penn series bentgrasses. Since their successful introduction a number of courses have followed in their footsteps. In ATM's cover story, those superintendents tell of their experiences managing these new 'superfine' bentgrasses under Australian conditions.

Managing the new generation Penn series bents

One of the great strengths of the Australian turfgrass industry, and in particular the golf industry, is the networking between turf managers.

The Penn Pals group is a great example of the networking between golf course superintendents and the uninhibited way in which they share information with their peers for the betterment of the profession.

The Penn Pals are a group of Sydney-based superintendents who get together on a regular basis to discuss various management issues surrounding the new superfine creeping bentgrasses Penn A1, A4, G2 and G6.

The Australian and Concord golf clubs were among the first to use the new Penn series bents across the entire course, with the former adopting A1 and the later adopting A4.

In the lead up to the 2004 Centenary Australian Open, The Australian superintendent Rob Ashes hosted several other Sydney superintendents to discuss the management of the new bentgrasses and in particular the Penn series bents.

The following is a summation of the discussions that took place and the information is shared as a guide for the rest of the industry utilising these grasses.

As well as this meeting, seven superintendents from Sydney were canvassed for their experiences, while two Victorian superintendents – Martin Greenwood and Leigh Yanner – were also asked to give their thoughts as a comparison to their northern counterparts.

ESTABLISHMENT

One lesson that has been learned with the new bentgrasses is that they require reasonably high temperatures to establish quickly and high fertility.

During establishment they are gross feeders, but once established the fertility levels can be decreased considerably. Once emergence takes place they need to be fertilised every seven days or so using a 'starter' (e.g. 8:10:10) fertiliser at 1-2kg/100m^2 until there is a complete cover.

The new Penn series bents have a high tiller density, but this is at the expense of lateral growth. Where the old Penncross exhibits strong stolon growth with stolons extending out to 40-50cm in diameter, the new Penn bents will only grow out to about 20cm.

Consequently, the fill in rate can be a little slow particularly if there are weak or bare areas in newly seeded turf. Experience indicates that if the seeded area is damaged by washouts or

The 18th at Moonah Links on Victoria's Mornington Peninsula. All greens at the 36-hole Moonah complex were seeded with A1

wind damage, reseeding of the entire area will achieve a quicker result rather than waiting for the surviving plants to spread and fill in.

The establishment process and in particular forming a dense turf cover is influenced considerably by mowing. It is important to start mowing as early as possible and to get the height down as quickly as possible. In some situations, mowing has commenced at three weeks after seeding at a cutting height of 6-7mm and then reduced as quickly as possible to about 4mm.

During establishment, topdressing will be necessary to achieve a smooth surface, however, it is a good time to start a dusting program for thatch control. In AGCSATech research trials it was apparent that most of the thatch accumulation occurred in the first six to 12 months and if dusting is not started early there may be a thatch problem before you start.

WHAT THE SUPERS SAY:

"We had no problems with establishment. Seed was pre-germinated for four days prior to sowing. We found that frequent fertilisation really pushed establishment along very quickly." – ***David Warwick, Avondale Golf Club (DW)***

"Establishment was extremely easy. Some greens established in early summer came into play after four weeks (those in late winter took up to 14 weeks). When growing from sod it is imperative to deep scarify immediately when the roots have grown sufficiently down to stabilise turf. Topdressing can then occur." ***– Mark Parker, Concord Golf Club (MP)***

"Very slow lateral growth. Likes to establish in the warmer months and slow through cooler months." ***– Leigh Yanner, Moonah Links (LY)***

"We have found that we have a 10–12 week seed to play situation. The seed is applied using a drop spreader (therefore no pre-germ) and we are getting four day germination (seeding rate is 0.7kg per 100m^2 of product which equates to a true seed rate of 0.35kg/100m^2 as the seed is coated). Once germinated and at the 2-3 leaf stage we pump the fertiliser into them (Nutrafeed 23 @ 0.5kg/100m^2) every seven days until we achieve a height of cut of 4.5mm. We topdress greens prior to the first cut, which is at 7mm. Heights are reduced 1mm per week from 7mm to 5mm and then we go down in increments of 0.5mm or 0.25mm depending on response factors at intervals not exceeding one week." ***– Mark Couchman, Cromer Golf Club (MC)***

"Readily established by seed. The greens were ready to play between 8-12 weeks. We used preventative fungicide treatments during establishment." ***– Peter Schumacher, Elanora Country Club (PS)***

"All greens have been seeded and greens sown in the winter take three weeks to germinate whereas greens sown in the summer take 6-8 days. Best establishment has been achieved with first cut at 6-7mm no more than one to two weeks following germination. Weekly applications of quick release greens grade fertiliser are best eg: 16:3:6 at 1kg is fine. Don't worry about weeds as most will ▶

Sydney-based superintendents discuss management practices with The Australian Golf Club superintendent Rob Ashes (second from left)

mow out before opening day, however, hand weeding of some flat weeds is necessary. Winter sown greens take about 16 weeks to open and summer sown greens a little less. Greens will establish faster if cutting height is dropped very quickly. For instance, a green could be cut at 4mm in the fourth to sixth week." ***– Martin Greenwood, Kingston Heath Golf Club (MG)***

"Approximately 15 weeks for first two greens done in summer and about 16-17 weeks for the other two done in spring." ***– Mark Warwick, Muirfield Golf Club (MW)***

FERTILITY

The 'ideal' fertiliser program is very much determined on an individual, site-specific basis depending on traffic, wear, sand type and microclimate. A general comment that has been made is you have to "greenkeeper" the grass. That is, you need to observe it, note how it reacts to various treatments and fertilise accordingly.

However, a clear message was that these grasses do require a moderate level of fertility so as to achieve good recovery from wear and pitch marks and to maintain a high density turf to discourage the invasion of *Poa annua.*

Fertiliser programs did vary. Typical fertiliser regimes included;

- 1.8-2.2kg N/100m²/yr applied every 2-3 weeks;
- An NK ratio of 1:3;
- Using a slow release fertiliser at 1-2kg/100m²/month (NPK 15:0:18) as a base level of nitrogen;
- Applying liquids at 0.5kg-0.75kg/100m² (NPK 24:0:24) every two weeks;
- Maintain high calcium levels;
- Apply iron as iron sulphate at 0.06kg-0.08kg/100m²/month; and
- Soil conditioners such as seaweed extracts and humic acid based products.

A useful indicator for the fertility program was that from a 500-600m² green the expected quantity of clippings is about a quarter to a half of a catcher on a walk-behind mower.

WHAT THE SUPERS SAY:

"I spoon feed and only apply enough to gain the growth rate I require. I supplement with nitro form powder in summer. I have never bothered to add up the total N per year as it is only a statistic I hold little value in." ***– Rob Ashes, The Australian (RA)***

"We use a slow release as a base. Regular light feeding with N 500g/100m² every two to three weeks. K and Fe as above. Mg. 250g/100m² every six weeks" ***- DW***

"N rates are the key to producing good putting surfaces with A1. I use very low rates of N every 6-8 weeks." ***- LY***

"N rates have yet to be firmly established, however, with newly established greens nutrients tend to move through the profile quickly. I don't think lean and mean is the way to treat A1, as it would appear to require reasonable fertiliser rates to keep the sward thick." ***- MG***

"We only fertilise when needed, approximately 400g/100m² Nutrafeed 19 about once every four weeks." ***- MW***

MOWING HEIGHTS

Most superintendents were mowing six to seven days a week at a cutting height of 3-4mm for walk-behind mowers and 3-3.5mm for triplex mowers.

A noticeable fact with these grasses is that they can grow significantly over a day and because of their upright growth green speed can slow down. This is compared to the older and more prostrate cultivars that tend to lay flat and may exhibit an increase in green speed over a day. Daily mowing therefore becomes an important tool in maintaining a high quality surface.

WHAT THE SUPERS SAY:

"2.8-3mm are the year-round heights." ***- MP***

"If the grass is maintained at low N, 10.5 feet can be achieved at a cutting height of 4mm. I feel 3-4 mm is the perfect height." ***- LY***

"I cut at 2.5mm, however, I will be examining 3mm as the optimum height in the future." ***- MG***

"Anywhere between 2.5-3.5mm." ***- PS***

"We cut at 3.5mm. Optimum would be 3mm but we keep them higher to match the old greens." ***- MW***

"3mm all year around." ***- RA***

THATCH CONTROL AND CULTIVATION

Thatch control is the greatest concern for superintendents maintaining the superfine bents. As previously discussed, thatch accumulation can occur rapidly and this can result in less than ideal surfaces.

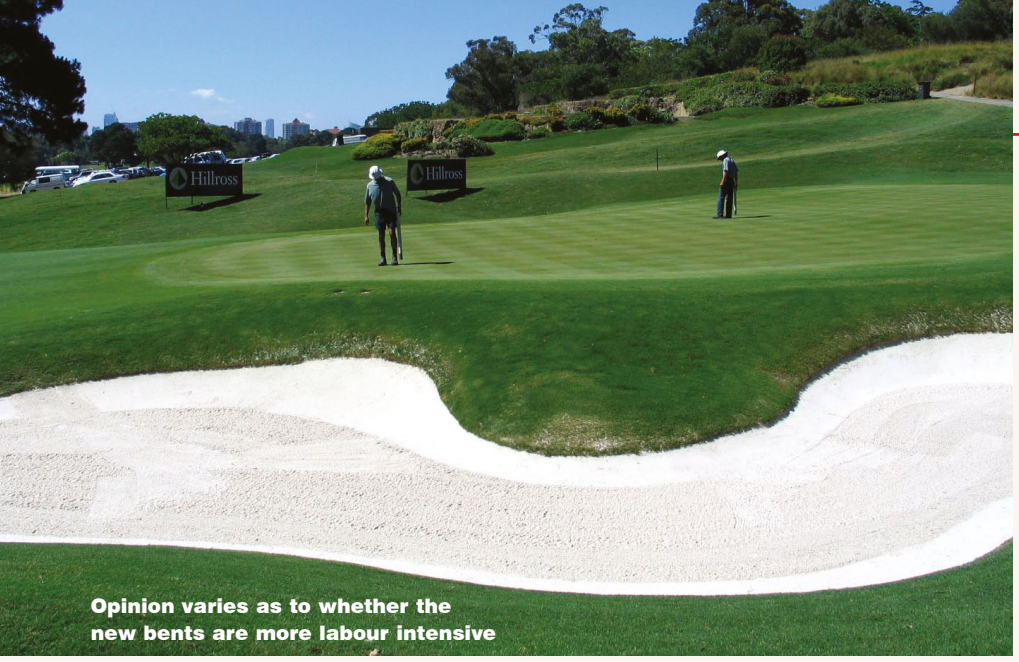
One question that was raised was, "How much thatch is too much?". Without being too trite, the questions that have to be answered are, is the thatch causing problems with water penetration and preventing firm, smooth and dry surfaces? If the answer is yes, then some form of cultivation is necessary. This, however, becomes an exercise in curative action rather than preventative.

Preventative thatch control is the preference and a dusting program from day one is the commonly accepted management regime. A typical dusting program would entail;

- Dust every 2-3 weeks and up to weekly for tournament preparation;

3-4mm is the preferred mowing height for the new bents

COURSE/SUPERINTENDENT	NEW (OLD)	CONVERSION/PROCESS	REASON FOR CONVERSION
 **Avondale GC NSW** *David Warwick*	G2 (*Poa*/bent)	2000-2005. Total new greens construction. Trialled eight different bents in a microclimate situation and G2 proved to be the best for our site.	New design
 **Concord GC NSW** *Mark Parker*	A4 (*Poa*/bent)	1997. Solid washed sod. Observed various trials across the USA on a 1995 study tour with fellow superintendents. Predominantly fine upright leaf growth a major improvement on previously available creeping bents.	Reconstruction of greens to change profile and improve design
 **Moonah Links VIC** *Leigh Yanner*	A1	Seeded. Three greens relayed since initial construction using existing turf. A1 was chosen at the start of construction by Thomson, Wolveridge and Perrett, with the help of Doug Robinson.	n/a
 **Kingston Heath GC VIC** *Martin Greenwood*	A1 (Egmont browntop)	Started November 2001. Total greens reconstruction (recently approved USGA flatpipe used extensively). Five greens and one putter to go. Visited courses in Victoria and NSW with the new As and Gs. Engaged John Neylan to help collate all information. This then went before the committee with John's and my recommendation. Club captain was a part of all inspections undertaken.	Previous variety disease prone, not heat tolerant and slow green speed. Wet sloppy greens in winter due to construction shortcomings.
 **Cromer GC NSW** *Mark Couchman*	G2 (*Poa*/bent - Penncross, 1019 and 1020)	Started October 2003 and expected to be finished by November 2005. Complete greens reconstruction. I can only ascertain from the club that their decision (made before I started) was based on reading of literature and also from testimonies from other courses.	Desire for better surfaces and uniformity. Desire also for greens construction/profile uniformity.
 **Elanora CC NSW** *Peter Schumacher*	A1 (*Poa* 90%/ bent 10%)	July 2002-December 2003. Seeded. Complete greens reconstruction to USGA specs. Nine month trial of A1, A4, G2, G6, L93, 1020, 1019, Penncross, Egmont, and mix of Crenshaw Pennlinks and 1020. Nothing between A1 and G2, but thought A1 had slightly better winter colour and just appeared to the eye to be slightly more dense.	More able to withstand Sydney's humid summers. The club wanted to upgrade.
 **Muirfield GC NSW** *Mark Warwick*	G2 (1020)	2003-2004 rebuild of four greens. Seeded. Determined upon results of trials at Castle Hill Country Club.	Rebuild and update greens.
 **The Australian GC NSW** *Rob Ashes*	A1 (Penncross/ *Poa* mix)	September 1999-January 2000. Trialled 10 varieties, set up by David Honeysett, to review the latest market trends well before we had intentions of re-surfacing greens. We took the tops off with a maxi roll cutter, added topdressing sand and rotary hoed to a depth of 300mm. Then fumigated. Surface compacted and greens returned to original shape with softer contours. A1 seeded.	Move to a tougher more sustainable *Poa*-free turf.



Opinion varies as to whether the new bents are more labour intensive

- Application rate of sand is 20-50kg/100m²/application;
- The sand must be as dry as possible;
- No particles greater than 2mm in size to reduce mower damage and to allow the sand to penetrate the surface;
- Use a drag mat made of synthetic grass to brush the sand in followed by watering;
- If possible, after dusting raise cutting height for one or two days (a second set of mowers help).

If there is a good dusting program in place, then heavy renovation and in particular scarifying is going to be unnecessary. Those superintendents who have heavily scarified the new bentgrasses find they are very slow to recover and provide a perfect seed bed for the invasion of *Poa annua*.

If there is a good dusting program in place, then mini-tyning and vertidraining maybe all that is necessary. Some form of tyning is required to break up any layers that may form during the dusting program and vertidraining with no kick provides good soil compaction control. Vertidraining every month has been found to be very effective.

The Hydroject has also been used to great effect for compaction control, particularly in the raised position as described by Dr. Bob Carrow *(Surface organic matter in creeping bentgrass greens, Australian Turfgrass Management, Vol 6.1, Feb-Mar 2004)*.

WHAT THE SUPERS SAY:

"Thatch must be managed by regular dusting operations. Regular verticutting at the wrong time can give you a good crop of *Poa*." ***- RA***

"I find that recovery from scarifying is unacceptably slow with the A4, so we rely on frequent dusting and mini-tyne three or four times per year. Some thatch is evident, but acceptable." ***- MP***

"I was told that thatch was a real issue, but to date this has not been the case. We have no real program of thatch control in place as yet because we still have different grass species to manage as well as different aged greens. We are sanding at about 2t/ha every two weeks. Scarifying showed poor recovery rate and *Poa* germination could be seen in the lines even after recovery. Mini-tyne two to three times a year to control thatch. We are looking closely at a program of brushing, which will be done selectively because of shade issues." ***- DW***

"As I am only into the first 16 months of this project I have been very mindful of thatch management, although low fertility rates have kept it in check. It is difficult to manage old and new greens and achieve consistency. The nursery green and one of the putting greens, which were sown 6-8 months prior to me starting and maintained under the same fertility regime as the "old" greens, do have, given their age, some significant thatch.

"Remedying the situation for us has been reduced fertility and light dethatching and regular dusting. In autumn and spring we do this about every two weeks with longer periods of three to four weeks in summer and winter. One significant point is that the G2 does not recover well from aggressive dethatching, especially with the current fert rates. How much is too much? It is hard to say, but I am aiming for somewhere between 10-20mm and will adjust up or down based on agronomic performance. We have also mini-tyned the greens once without too much disruption and with a fairly good recovery. We take every second tyne out too!" ***- MC***

"I have never scarified A1 and until a root friendly pre-emergent is available I would be reluctant to do so. Coring recovery is fine, being no slower than other creeping bents as long as 0.5 inch tynes or smaller are used. Recovery from ¾ tyning is slower." ***- MG***

"We are dusting greens every 14 days to bury thatch and firm surface. Oldest green is two years and current thatch level is about 5mm. No problems yet. Don't know how much is too much yet. Ask me in five years." ***- PS***

POA ANNUA CONTROL

The density of the new bents provides a natural barrier against the invasion of *Poa annua*. However, *Poa annua* still remains a concern with a combination of regular hand weeding and chemical applications providing the most effective means of control. Paclobutrazol appears to be the preferred chemical with some concerns that high rates of Endothal will set the bentgrass back.

WHAT THE SUPERS SAY:

"We use Exposan as a pre-emergent and light rates of Endothal to highlight *Poa*. Hand weeding is in practice. Will look at Scotts TGR if problem becomes to big too." ***- DW***

"Greatly reduced invasion compared with other creeping bentgrass varieties, attributed to the density of the sward. Hand removal required at peak times June through October. Generally six staff members for three hours every two weeks." ***- MP***

"The G2 gives such a tight and dense surface that *Poa* struggles to get a start. The staff hand weed greens as required. We do make a conscious effort to control *Poa* on fairways, tees and green surrounds to minimise the likelihood of invasion. I would say that the low fert rates also helps." ***- MC***

"Two applications a year of *Poa* Check and hand removal. No *Poa* problem as yet. Density of grass also helps prevent germination." ***- PS***

"We don't use chemicals at present. We're trying to clean down machinery before cutting. Hand weeding where necessary." ***- MW***

"The turf is dense but can still let *Poa* into the greens. I do not disturb the surface with traditional renovations, instead solid spike monthly with a vertidrain and dust every two-three weeks. *Poa* is controlled predominantly by handweeding and now we are using some chemical control (Endothal and Exposan). *Poa* resistant is probably the biggest myth to the untrained with the new bents, but people in the game know this is a myth." ***- RA***

PITCH MARKS AND RECOVERY

Pitch marks are a main concern with the new bents because of the lack of lateral growth and the failure of golfers to repair pitch marks correctly.

Most superintendents are resigned to the fact that repairing pitch marks is part of the


Hand weeding is a must to keep on top of *Poa*

regular maintenance regime, and during the Sydney meeting before the Australian Open, Rob Ashes demonstrated the equipment that he uses for repairing pitch marks.

WHAT THE SUPERS SAY:

"*Poa* is the clear winner in terms of reduced susceptibility and recovery from pitch marks. Greens improved significantly from susceptibility once dusting program started (one would speculate that the drier firmer conditions produced with dusting program aided in this area)." **- *MP***

"The A1 is very slow to recover because of its very little lateral growth. However, because of the dense nature of the grass you don't have the big crater-like pitch mark you sometimes get with 1020 or Penncross." **- *LY***

"It is generally accepted that in order for a pitch mark to repair quickly it must first be repaired…first problem. The best way to avoid pitch marks is to keep firm greens and educate members in the best way to repair pitch marks. A1 is not the best grass on earth as far as growing in pitch marks go and is therefore not well suited to small greens." **- *MG***

"I have found recovery to be quite good. The greens are quite hard which helps. We fix some marks before cutting a few times per week." **- *MW***

"Pitch mark recovery is slow and needs the help of extra work. We do this with the help of a device we have created – the lobzfix. This makes a huge difference, but is another job that has to be done. These grasses are susceptible to pitch marks due to the sheer density." **- *RA***

SURFACE PREPARATION, PRESENTATION AND LABOUR

Regular mowing, dusting and brushing all assist in providing high quality playing surfaces. In addition, superintendents are using a growth retardant such as Primo Maxx at 6-10ml/100m^2 to assist in preparing the putting surface.

WHAT THE SUPERS SAY:

"Presentation is of a high standard. Best results are with walk-behind mowers - smooth fast roll. Nice colour. They are more labour intensive in regards to *Poa* control and sanding, but less time is required for disease spraying and hand watering." **- *DW***

"Extremely good, however, I will note that a well maintained *Poa* at the right time of year (ie: not under stress) is hard to beat. An example would be the greens at NSW Golf Club. Gary Dempsey has these greens as good as it gets." **- *MP***

"The A1 is a terrific grass and when groomed for special occasions there are not too many grasses that can pass the overall performance. You need to have an excellent dusting program implemented, other than that, I feel they are less labour intensive because they don't have to be worked to achieve good putting surfaces." **- *LY***

"KHGC chose A1 because some of the G series exhibited a tendency to colonise, something that A1 has not done at this point ▶

The Penn bents provide a firm hard surface which promotes smooth ball roll

in time. The beauty of A1 is the harder that it is worked the better it responds and if it's done well the surface is true, fast and consistent. A1 is labour intensive. Dusting, hand weeding and cutting are the big requirements if a pure surface is desired. It would be my estimate that between 20-30 per cent more in resource allocation is required. They provide a surface that can be worked to a high level, has good heat tolerance and stress recovery." ***- MG***

"Far superior to anything that we have here and the members are more than happy with the new greens." ***- MC***

"The standout! The A1 has the smoothest ball roll of all the new bents. It's the golfer's grass. I believe they are no more labour intensive unless you want to make them that way by cutting short and dusting to get the best surface possible." ***- PS***

"Greens always look good unless nutrition is down. Putt very well. The only thing is they get a lot firmer than the old greens. Not as labour intensive yet as they are still young, but more scarifying and light topdressing will be done in future." ***- MW***

"We are very happy with our choice. It is very strong and can take a beating such as Australian Opens. Labour requirements are no different to the old greens as I worked them hard to get a good surface. We were always spraying something to control the *Poa* in the old ones and nearly killing them, then bringing them back to life. So I think it balances out. They are worth the effort; your greens are the focal point." ***- RA***

DISEASE RESISTANCE AND MANAGEMENT

"We have found that there is less incidence of disease. We do spray preventative when we are spraying old greens curative. Algae is an issue though due to what I believe is the density of the canopy and the fact that the surface does retain moisture within that area. Not a major problem though." ***- MC***

"The only real problem I've encountered is Take-all patch and a bit of moss." ***- MG***

"Very resistant. Some mild fairy ring problems and some very minor dollar spot, otherwise nothing." ***- PS***

"The G2 is very good with disease. So far we've only had a small amount of dollar spot and brown patch. Algae is the only thing that gets in after rain." ***- MW***

"I have never suffered from dollar spot, but have experienced pythium, brown patch, fusarium and Take-all patch" ***- LY***

"Have seen brown patch. Pythium has been minimal. Dollar spot does need to be treated but only minimal." ***- DW***

"Preventative pythium control and no major problems. A lighter fertiliser program can bring some fairy ring. Algae and moss can also be an issue in wet periods." ***- RA***

CONCLUDING THOUGHTS

Leigh Yanner: "I am a big fan of A1. I feel I have constantly high quality putting surfaces throughout the entire year. However, I have seen A1 at different courses and they all present and look different because growing conditions vary so much. I would support any club wishing to implement A1. However, the superintendent needs to have the machinery to prepare and maintain it. They will need to purchase a dusting unit, have groomers or a brush set up on greens mowers and have a good supply of sand for dusting.

"A few myths I heard was that the A1 was an aggressive grass and that you couldn't control the thatch. I think this is true when maintained like the older bents or similar to the N rates the Americans suggest. However, if the correct maintenance practices are implemented early, they are no different to any other bent."

Mark Parker: "Selection of grass species should be predominately based on consistency. In my opinion, if a club only intends building several greens over a long period, the existing grass species should be maintained. If a club has consistent *Poa* greens, why put in several bentgrass greens that will undoubtedly play differently, and also create different turf management requirements.

"If all greens are to be re-surfaced, I can only recommend trialling the grasses in your own conditions and under your own management regimes, along with seeking advice from fellow superintendents. At the end of the day, the quality of the playing surface has a lot to do with budgets and the turf manager's ability more than the selection of grass species.

"Read the facts and make your own observations. In summer time there is reduced disease incidence and better recovery from damage during the late summer period. Holding tournaments in February are far less stressful in hot humid conditions, with improved playing conditions during the January/February months. This is possibly not an issue in temperate to cool regions."

Mark Couchman: "I think that some of the articles out of the US can be derisive and cause angst among some people. We as a collective group need to put things into a domestic frame that can help people to make a more informed decision if they are thinking of converting/changing grass type."

ACKNOWLEDGEMENTS

ATM is grateful to the following for their contribution to this article: Rob Ashes, David Warwick, Mark Warwick, Peter Schumacher, Mark Parker, Mark Couchman, Leigh Yanner, Martin Greenwood and John Neylan.

The last two Australian Opens have been fought out on A1 greens and will again in 2005 as the Open returns to Moonah Links

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At the first modern Olympics in 1896, athlete Edwin Flack broke new ground by becoming the first Australian to win an Olympic medal. Over a century later, a sports complex in Melbourne bearing his name has broken new ground in the art of sportsfield construction. John Harding from Cardno Young outlines Melbourne Grammar School's challenging Edwin Flack Park project which has come to fruition over the past four years.

Melbourne Grammar's Hi-tech Turf

Edwin Flack Park

For the first time in more than 140 years, Melbourne Grammar School (MGS) committed itself to a major land purchase and development away from the school's senior school campus in South Yarra, Melbourne.

The school's aim was to create a high quality, multi-purpose sporting facility to cater for a number of its 1800 students located over three campuses, providing for:

- A premier AFL football and cricket field
- A premier synthetic hockey/tennis surface
- A soccer/rugby/junior cricket field
- Vehicle access and parking
- An amenities pavilion
- Spectator viewing mounds
- Passive recreational spaces with shade, seating and landscaping

Some of Melbourne's older schools have undertaken similar projects, maybe not to the same standard or quality required by the school's headmaster, former Australian Test cricketer Paul Sheahan, and certainly not located within a 10 minute bus drive from South Yarra.

A commercial real estate friend said that a 'Greenfields' industrial site in Port Melbourne is conservatively worth about $500 per square metre which rounded off comes to about $37 million. So where do you find seven hectares of land for sporting fields within 10 minutes of Melbourne's CBD at a reasonable price?

MGS used its very good judgement, courage and determination to acquire at the right price, remediate and eventually develop to a high standard a seven hectare landfill site in Todd Rd, Port Melbourne.

The school's first challenge was to obtain planning approval from the City of Port Melbourne. The next challenge was to find and appoint a civil engineering consultant capable and experienced in complex environmental issues, constraints with major services, geotechnical concerns and capable

The main AFL oval at Melbourne Grammar's recently completed Edwin Flack Park and (inset) the synthetic tennis and hockey facility

of delivering high quality sporting facilities.

Cardno Young were engaged as the head consultant for the project to provide masterplanning, design, documentation, contract administration and project management. A design team was put together with help from sub-consultants Coffey Geoscience, AGCSATech, Bligh Voller Nield (architects), Murphy Design Group (landscape architects), Sportsvision Consultants (floodlighting) and Hydroplan (sportsfield irrigation).

The project was programmed to start construction in June 2001 with Akron selected as the head civil contractor. Akron had worked with Cardno Young previously on the reconstruction of Moonee Valley Racecourse and construction of athletics tracks.

THE ISSUES

The foremost issues with the Todd Rd site were:

- Old sand quarry
- Land fill site
- Negotiations with service authorities for "buildover" of major services (gas transmission pipeline, Bass Strait oil pipeline, high voltage electricity, fibre optic cable, sewers, water pipelines)
- Tidal water table
- Poor ground conditions (Coode Island silt)
- Foundations for buildings and high tolerance structures
- Limited storm water outfall
- Exposed site
- Industrial visual and noise

The environmental issues were many and included:

- Nutrient stripping/retardation/wetlands ponds required for turfed fields
- Clay capping to seal off landfill
- Methane gas disbursement systems
- Floodlighting spill minimisation
- Wind amelioration

BUILDING ON A TIP

A "Greenfields" site this was not. Cardno Young's principle designer Rod Weeks directed the design of the project, while the client contact was MGCS property manager James Burton, an exceptionally hands-on person and an important member of the project team.

Ray Young, the managing director of Cardno Young, was able to bring to the project a wealth of knowledge on the latest requirements for conforming sports surfaces. Ray takes overall responsibility for the management of most of the company's high profile sporting projects.

Specialist equipment was used to shape the rubbish to subgrade levels throughout the site and densify the landfill material which was made up of domestic waste, building rubble, industrial waste, green waste and the odd EH Holden car body.

Extensive use of geosynthetic materials was used to identify, bridge, drain vent, reinforce and support the underlying landfill.

The striking pavilion building and caretaker's cottage designed by Bligh Voller Nield were founded on friction and concrete piles. Some of the pavilion's concrete piles penetrate through 13 metres of rubbish and then some 27m of Coode Island silt before finding solid ground.

Most of the really serious work is underneath what is now the surface of the sporting complex. Unless you were involved in

Bulk earthworks on the landfill site began in August 2001

every detail of the design and the construction of the new MGS fields, it is very hard to appreciate the amount of engineering design and construction work hours involved in the remediation element of this project.

The fields had to be brought to a stage where we could actually begin to construct foundations to accept building structures, roads, and car parks, soft and hard landscaping and of most importance premier sports surfaces.

SPORTS SURFACES

A landfill site is subject to ongoing settlement in the form of compaction, compression, corrosion and creep. Ongoing settlement issues can be 'engineered out' to a point with the use of flexible joints in drainage, irrigation, and other services.

Solid structure interfaces with the landfill areas and localised settlement can be controlled to an extent with innovative solutions, and buildings can be on piled foundations.

How do you construct an FIH-certified synthetic hockey field and nine tennis courts with ±2mm tolerance on a rubbish tip? You can topdress a turfed field. How do you topdress polyethylene yarn, a specially imported shock pad from Germany, asphalt and road base?

The Cardno Young design team and Coffey Geoscience came up with an inventive solution for addressing the problem for ongoing settlement under the hockey pitch and tennis courts – construct a 1m deep geosynthetic reinforced recycled concrete pad beneath the hockey pitch footprint, load it up with 30,000 tons of imported clay and other materials and leave it to compress for 12 months to induce the equivalent of about 30 years of settlement.

Close monitoring of the synthetic field during and after construction still indicates nil settlement in the area.

TURFED FIELDS

AGCSATech played an important role in this project, having worked with us on many projects including Stadium Australia, the Sydney Cricket Ground, and Randwick Racecourse.

The soil profile for the AFL oval and the junior cricket/rugby/soccer oval was placed on a consolidated clay subgrade and included:

- Automatic irrigation
- Subsoil drainage collector system
- A growing medium with a perched watertable
- Stolinisation with Legend couch *(Cynodon dactylon)* oversown with a perennial ryegrass

Soil testing procedures were very strict and the following test was required on a regular basis throughout the delivery process:

- Particle size analysis using USGA specs
- Soil pH and total dissolved salts
- Soil water content and holding capacity
- Saturated hydraulic conductivity
- Bulk density
- Moisture release curves

The growing medium was sourced from a sand quarry in Lara near Geelong. A large quantity of the material delivered to site was rejected and sent away to be re-blended. Design tolerances for the growing medium were 0mm and 10mm.

The pH of the soil was naturally balanced with very good moisture retention and drainage qualities. No dolomite or poultry manure was required to amend the secondary layer of the soil profile.

The profile depth was 0.3m with the design hydraulic conductivity specified to a 300mm/hour minimum.

Stolonising of the AFL field took place in November with a good strike rate. The Legend couch loved its new environment right from the start - so did all the weeds and rogue grasses that established themselves between Christmas and New Year.

Construction maintenance of the newly planted sportsfields became a major issue, and it soon became evident that it was essential that the MGS groundstaff became involved as soon as possible.

MGS employed Paul Johnston to be the resident caretaker and groundsman. Paul has done a marvellous job of nurturing the new turfed sportsfields and surrounds.

Construction of the AFL field stormwater retention tanks

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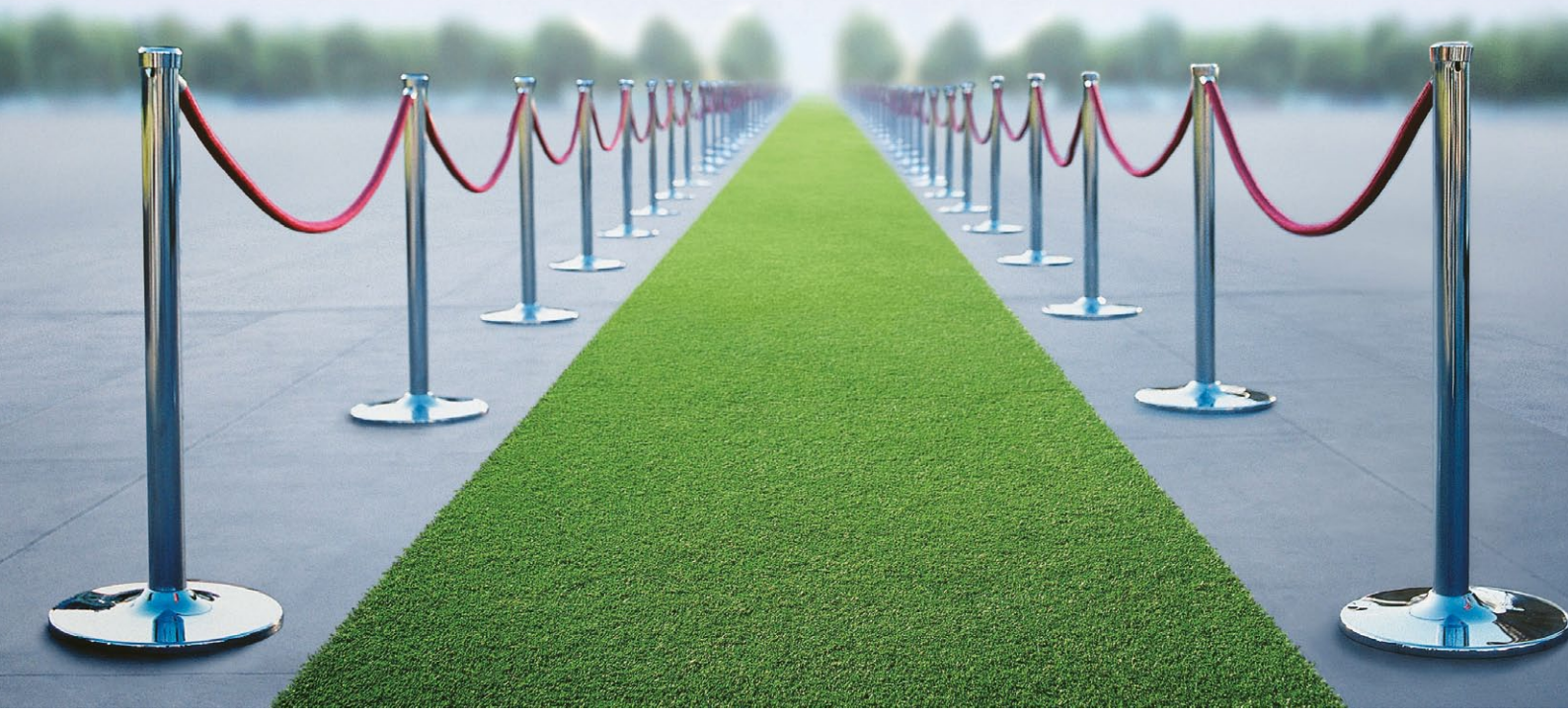

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Cricket wicket construction

Tony Ware from the MCC supervised the construction of the cricket wickets (five on the AFL oval and one on the junior cricket oval. Tony used conventional materials (eg: Merri Creek soils) on a drainage blanket. Washed Legend couch sod was used to turf the pitches.

RETENTION, DETENTION AND SITE DRAINAGE

The existing outfall to the City of Port Philip stormwater drainage system was less than adequate to take the catchment produced from seven hectares. A system of water retention and detention devices was devised to store major runoffs from the site in the event of flooding and then to slowly release the water into the council drainage system.

A 0.7 megalitre retention tank was constructed under the AFL oval to retain water and then pump it through a rising main into a wetlands system which will also work as a detention system. The synthetic hockey field and car parking areas were also designed to detain water.

Early in February this year, Melbourne experienced over 150mm of rain in 24 hours, with over 140mm of rain collected in the rain gauges at the new Todd Rd complex. All sportsfields and surrounds were fully functional the next day.

Speaking with MGS head curator Jim Katanos shortly after, he said: "After the floods at the start of the month we had another 20mm of rain in a very short period and the sportsfields were playable within 10 minutes. The pitches are playing beautifully."

EDWIN FLACK PARK

Melbourne Grammar School's new sporting facility was officially opened by Victorian Governor John Landy on 24 August, 2004.

Costing in the vicinity of $15 million, the complex was renamed Edwin Flack Park in honour of Melbourne Grammar student and runner Edwin Flack who won the first ever Australian Olympic gold at the first of the modern Games in Athens, 1896.

Such were the envionmental issues that needed to be overcome, the project is set to be entered into the environmental projects category at the upcoming 2005 ACEA Awards for Excellence.

ACKNOWLEDGEMENTS

John Harding is the Victorian manager for Cardno Young and was construction manager for Edwin Flack Park.


The completed AFL oval

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St Andrews' Hell bunker in all its glory. The Old Course boasts 112 bunkers all revetted

The sand course at Almadi Golf Club in Kuwait

From St Andrews to The Sahara

A Technical Officer's Pilgrimage

In January, AGCSATech technical officer Andrew Peart represented the AGCSA at the 2005 BIGGA conference in the UK. During his stay in the wintry North, he swung by Open venues St Andrews and Royal Liverpool, while on the way home he touched base with a number of Australian superintendents who now maintain some of the finest courses in the Middle East.

The BIGGA conference is held every year in Harrogate and this year included the international summit of superintendent associations from across the globe.

The first two days of the conference were dedicated to either one or two-day workshops. Themes for the two-day workshops were soil science, communication and course design, while the one-day workshops focused on course preparation for tournaments and irrigation principles.

I attended the one-day workshop on course preparation techniques at the professional level presented by Jon Scott (US PGA Tour's vice-president of agronomy) and Richard Stillwell (chief greenkeeping consultant on the PGA European Tour).

The European Tour employs four consultants to oversee course preparation for 37 events, whereas the US PGA employs nine agronomists that cover 106 events from three tours (PGA, Nationwide and Seniors).

Overall the workshop gave a great insight into course preparation. Key elements of the presentation were that the role of the agronomist and superintendent is a partnership and not a takeover by the former. The importance of timing was also illustrated to ensure all agronomic procedures were correctly timed.

Staff issues were also vitally important. Staff must be kept motivated in the lead-up to the tournament and be allowed to take ownership of specific holes or roles. Secondly, if volunteer staff are brought in they should not be given roles that regular staff normally carry out.

Green speeds must be consistent, with variations of up to six inches on the stimpmeter being acceptable. Lastly, a greens roller is used for putting surface smoothness not firmness.

The BIGGA seminar series ran from Tuesday to Thursday with a total of 12 half-hour presentations. These were generally light on for technical information and some were presented by trade members who focused a lot on their own products. As well as local speakers there were also representatives from Canada, the United States and myself.

The tradeshow was probably the main focus for most superintendents and their ground staff. It is reported to be the largest associated tradeshow in Europe, with over 160 companies represented.


The famous St Andrews clubhouse

INTERNATIONAL SUMMIT

Following the conference, representatives from superintendent associations around the globe converged for a one-day meeting. Representatives came from America, Canada, Britain, Sweden, Ireland, Holland and FEGGA (Federation of European Golf Greenkeeping Associations) as well as representatives from the R&A, Sports Turf Research Institute (STRI) and Government Training Committee (UK).

Issues discussed included the formulation of global environmental management guidelines as well as guidelines that support the overall role of the superintendent.

Preliminary drafts of these had been put together by phone hook ups that had occurred on previous occasions.

An international website was launched www.gcsaa.org/igcm that will include meeting outcomes, contact details for all associations, as well as international dates for upcoming events. The summaries from all associations present during the summit tended to focus heavily on education initiatives.

2005 & 2006 OPEN CHAMPIONSHIPS VENUES

Following the conference I visited the 2005 and 2006 Open Championships venues St. Andrews and Royal Liverpool. ▶

The spectacular approach to the 3rd at Doha Golf Club in Qatar

ROYAL LIVERPOOL

I visited Royal Liverpool with a past associate from the STRI. The main intention was to play golf but when the 9am temperature was -2^{o}C there was little to be gained in trying to post a decent score.

The course is typical of a true links course. It was nearly totally devoid of any vegetation other than grasses and is particularly flat. In summer the course takes on a much different appearance when the fescue grasses in the rough are at least knee height as opposed to no more than ankle height in winter.

When weather conditions are not conducive to playing on the normal greens, winter greens are in play. They are cups cut into the fairways about 20m short of the green.

The cups are cut in November. Unlike temporary greens used in Australia, these winter greens do not receive any additional cutting or topdressing and therefore you are simply putting on the fairway surface. However, due to the limited growth of the fescue during winter they actually provide relatively true putting surfaces, although very slow even on frozen turf.

The putting green surfaces are a mixture of bentgrass, fine fescue, *Poa annua* and patches of ryegrass and fog grass. Species composition did not appear to be a huge concern as long as ball roll was consistent.

The preferable tee grass composition is fescue and bent. Over the winter there is often moss invasion and this is alleviated with an application of lawn sand in early spring that is a combination of ammonium sulfate, iron sulfate and sand. This provides the tees with nutrition, moss control and some topdressing.

The fairways are a mixture of fine fescue, bentgrass, ryegrass and *Poa*. Fescue is the preferred species and the fairways are managed to provide the fescue with the best possible growing conditions. This means they receive minimal nitrogen fertiliser as more fertility would tend to promote ryegrass, which is seen as a weed and heavily discouraged. The main source of nitrogenous fertiliser applied would be a liquefied manure fertiliser maybe twice a year.

The fairways also had a small percentage of broadleaf weeds, which included parsley piert. Generally, small percentages of weeds are acceptable as long as they do not interfere with playability or do not out-compete the favoured species.

The roughs are being encouraged to comprise of the endemic species of fine fescue grasses and marram grass. In disturbed sandy sites these are the first species to regenerate. From a pure ecological viewpoint this would be the ideal scenario for the majority of rough at Royal Liverpool, however, it is slow growing and reasonably intolerant of traffic.

All the bunkers on the course have revetted faces and are being reconstructed prior to the 2006 Open. The preferred grass species to use for this is fescue due to the woody nature of the fescue thatch. Two-inch thick sods are cut into slabs 40cmx15cm wide and stacked around the outside of the bunker to form the bunker edge with each layer of sod placed about 1-2" back from each other.

The imposing undulations of the 2nd/16th green at St Andrews

ST ANDREWS – OLD COURSE

St Andrews Links Trust is comprised of five 18-hole courses (the Old Course, the New Course, the Jubilee, Eden and Strathyrum - the first three are regarded as championship courses) and a nine-hole course known as Belgrove. The Trust is on 675 acres of land, of which 46 acres is a turf nursery.

The first thing you notice being in St. Andrews on a Sunday is that the Old Course is closed. This tradition has dated back centuries and is a constant reminder that the golf links belongs to the people of St. Andrews. Even dogs are allowed.

Then there are the seven huge double greens. There are four single greens on the course (1, 9, 17 and 18). The 18th is quite large as all greens are, but very rectangular in shape. It is believed that Old Tom Morris designed it this way due to the difficulty in turning machinery in the late 1800's.

The greens are dominated by fescue, creeping red and chewings, to the rate of about 70 per cent. There appears to be around 20-25 per cent bent and 5 per cent *Poa*, rye or Yorkshire fog *(Holcus lanata)*. Although the greens were cut at a generous 5-6mm, the surfaces were still very firm, possibly frozen.

The 5th/13th double green was regarded as the largest green in the world, however, has been eclipsed by the 13th at The Montgomerie in Dubai (see pg 24). Its size, however, can still not be underestimated and to cut it with a walk-behind mower would mean covering a distance of some 7.5 miles.

As well as the sheer size, there are some imposing undulations on many of the Old Course greens. The 2nd/16th green has some huge mounds and the 3rd/15th quite a distinct swale. The 11th and 17th greens on the other hand are relatively flat and narrow but are protected at the front by the famous Strath and Road Hole bunkers, just two of 112 bunkers around the course.

The fairways and rough are dominated

by fescue. As with Royal Liverpool, ryegrass is seen as an unwanted species, even to the extent of plugging it out. It is proposed that after this year's Open, superintendent Euan Grant will trial some selective herbicides to rid it from the course.

The R&A works closely with the STRI regarding the protection of areas of ecological importance for Open Championships. Due to the heather being severely checked during the 2000 Open, the STRI has dictated that for this year's event the ropes will be outside the stands of heather, allowing for the regeneration of the species.

Because of this, much of the gorse on the Old Course has been severely trimmed with a flail mower to allow better visibility for spectators. After the tournament, a gorse management plan drafted by Euan will start to reduce much of the woodiness that has developed within the bushes.

During winter there are a few strategies to alleviate excessive wear to the course. The first is through the placement of the pins. During winter only one temporary green is in play, the short par 3 11th . The rest are as normal with many pins placed close to the edge of the green so golfers don't have to walk all over the green.

Secondly, balls must be played off small strips of artificial turf if they land on the fairway. Balls finding the semi-rough or rough can be played as they lie. This is an attempt to reduce fairway divots, although there still appeared to be many divots in the fairways.

THE MIDDLE EAST

As well as my time in the UK, I stopped off in Qatar, the United Arab Emirates and Kuwait. The purpose was to visit courses in Doha, Dubai and Kuwait City which were being maintained by Australian superintendents.

DOHA GOLF CLUB, QATAR

This course occupies 150 hectares in total, of which 60 hectares is grassed. Facilities include an 18-hole championship course, a fully lit nine-hole academy course, a large practice putter, practice tee and the Qatar Golf Academy.

The course was designed by renowned architect Peter Harradine and opened in 1995. Harradine's design and philosophy relies on the natural preservation and enhancement of existing sites to create a unique course for a particular location. If there is one word to describe this course, unique would be it.

The natural features of the desert have been preserved and enhanced with the inclusion of artificial lakes, some holding potable water (treated by desalination plants for irrigation) and others containing sea water.

The site is extremely rocky and construction involved excavating and crushing most of the rock before the natural dune sands containing a small percentage of clay were used to cap this base material.

The course is totally grassed with a combination of Tifgreen and Tifway. During the cooler months, greens are oversown with 6kg/100m^2 of *Poa trivialis* and the roughs and tees are oversown with perennial ryegrass at 150kg/ha. For the 2005 Qatar Masters, a small approach area in front of greens has also been oversown with *Poa trivialis*. Due to the extreme summers (>40^{o}C) transitioning out the oversown species is not an issue.

Missing the fairway can be fraught with ▶

danger as there is only a small area of grassed rough between the fairway and desert. For the Masters, the grassed rough is cut as follows; a triplex-width cut at 25mm (short rough), another at 50mm (step rough) and outside that at 100mm (long rough) before the grassed surface disappears into natural sands and gravel of the desert, where the ball must be played as it lies.

Water supply to the course is generally not a problem as potable water (desalinised) is pumped on a consistent basis. The irrigation system was designed to pump 3000 gallons a minute. This is achieved from six pumps and three jockey pumps, of which five main and two jockey pumps are in operation at any one time. This allows the entire course to be watered in 12 hours using up to 6500m^3 of water per night (3000m^3 over winter).

The maintenance team comprises Ranald McNeil and his assistant Darren Shaw. Michael Styles oversees the irrigation system as well as much of the outside landscape contract work, and Hamish Rumane is project coordinator. As well, each nine has a foreman and another 40-odd employees (mostly Indian, Sri Lankan or Bangladeshi).

In total, the groundstaff would tally around 70 when the landscape workers are included. Landscape projects which the golf club is also involved with include the Al Arabi Sports Complex, Al Sadd Stadium and Khalifa Stadium, home of the 2006 Asia Games.

Doha hosts two major tournaments for the year – the 36-hole Qatar Open (amateur) and the Qatar Masters, a co-sanctioned event with the European and Asian tours. The Masters was first played at Doha in 1998 and is one of the longest layouts on the European Tour. The 18th (played as the 9th for the Masters) is the longest hole on tour at 634 yards.

Greens are cut at 4mm for the tournament and do not run much faster than 10 – 10.5 feet due to a couple of exposed greens. In 2002 a severe sandstorm caused the cancellation of the first round when 2mm of sand was deposited on all holes. With adequate irrigation that evening, the event started the next day.

THE MONTGOMERIE, DUBAI

The Montgomerie, as the name suggests, was designed in part by Colin Montgomerie and also Desmond Muirhead. It is very much a resort type course with wall-to-wall grass and landscaping.

All tees, fairways and roughs on the course are Tifway that are oversown in October/November with ryegrass. All but the outer 2m or so of the grassed areas are oversown, however, this policy may change as the final look is incomplete once the ryegrass has matured.

The course is shut for three days to complete overseeding. Greens and tees are done on the first day, followed by the front nine fairways and roughs, then the back nine on the third day. The oversowing rate is relatively high to produce a lot of weaker plants aiding a successful transition.

All greens have been planted with Floradwarf, an ultradwarf bermudagrass, and are oversown in winter with *Poa trivialis* at 9lb/1000sq.ft. It is done in a staggered operation with initial seeding at 6lb/1000sq.ft and then 10 weeks later another 3lb/1000sq.ft. The overall performance of the Floradwarf has been reported to be less than impressive and it is the view of the management that it should be replaced with Tifeagle.

The course has 14 lakes of which the vast majority are groundwater filled. The greatest concern to the course is that with all the recent development around Dubai and the necessity for amenity lakes, groundwater levels are continually dropping.

The course is now watered with treated effluent after initially being watered with desalinised town water. The first year's water bill with town water was around 9 million dirham ($A3.5million) but with treated effluent and better management, this figure has dropped to about 3 million dirham ($A1.3m).

The quality of the treated sewage effluent water is very good and the course can easily be watered in one night. Similar to Doha, the pumping capacities are staggering. The pump station at The Montgomerie is capable of delivering 5000 gallons per minute.

The par 5 18th is quite spectacular not simply for the layout but how much it cost to construct. It is reported that the 18th cost as much to construct as the entire front nine. This can be explained by the huge dam that runs through it, which is completely lined as it was once the irrigation dam filled with desalinised water. Then there are the six large concrete bridges to allow access to all points of the fairway, as well as all the associated landscaping and bunkering.

The construction technique for the course was to shape the entire fairway and tee bases and then cap them with 300mm of 'sweet soil'. This is a local material with a higher percentage of silt and clay to the natural sand, to give the growing medium some extra water and nutrient holding capacity.

The greens are a USGA construction with 20 per cent peat added by volume. However, this was a little adhoc at construction and it has taken two years to get all greens to perform the same way.

The Montgomerie boasts the largest green in the world, the par 3 13th. It is 58,000sq. ft (about 6200sqm) or the equivalent of nine greens in size. It can be played from tees positioned 360 degrees around the hole and the green is shaped in the outline of the United Arab Emirates.

Staff numbers are not an issue, with about 51 on staff (all Pakistani), although that includes 18 gardeners for the 38 acres of garden beds, and six mechanics.

The 18th at The Montgomerie purportedly cost more to construct than the entire front nine

THE DESERT COURSE AT ARABIAN RANCHES, DUBAI

This course was designed in conjunction with Ian Baker-Finch and the Nicklaus Group. Situated on about 200 acres of sheer desert landscape, the course has tried to retain much of this feel. Only about 30-40 per cent of the course is grassed with Tifway and the rest remains as a desert landscape.

Obviously the greatest concern in such an environment is sand movement onto the course. This has been achieved by watering

the desert to not only keep the sand moist, but to also encourage the growth of typical desert plants.

Fairways, roughs and tees had all been oversown with perennial ryegrass and had gone to the extremities of the grassed rough. The management of the edge of the rough and desert interface has changed on the Desert Course. The original plan was to have a clean edge of grass and sand but now the couchgrass has been allowed to encroach out into the desert.

Given the amount of sand (desert) on the course, there is no distinction between a wasteland bunker and a traditional bunker. It has been stipulated that if the Desert Course wishes to host a European Tour qualifying event, it must enclose all greenside bunkers so they are not regarded as wasteland bunkers.

The greens are sprigged with Tifeagle and not oversown. Even in the middle of winter they still present a very good putting surface although they had become quite purple in colouration and there was little recovery from pitch marks or where the cups had been cut. It is likely that the greens will be oversown for the following winter especially when golfer numbers are expected to rise.

The 2nd at The Desert Course at Arabian Ranches, Dubai

The 'desert' is constantly raked with bunker rakes for both an aesthetic look to remove wheel marks and footprints. The course has a balancing role of working out how penal the rough should be given the nature of the shrubby desert plants. The more plants the more penal the course plays given the ball can easily come to rest six inches off the ground in any one of them.

Once there is more building development around the course, the number of shrubs could be reduced dramatically as the houses will prevent some buffering of the prevailing winds that causes sand to blow onto the course.

THE SAHARA, KUWAIT CITY

The Sahara golf course (which was featured recently in Vol 6.6 of ATM), has been designed by Peter Harradine, with 12 holes constructed ▶

Raking the desert in Dubai

inside the racetrack of the Kuwait Equestrian and Hunting Club.

This has posed some difficult design elements given that the course could not detract from sight lines of the punters. Most of the course therefore is actually beneath track height with the highest point of the interior 12 holes being at track level. As the course is by no means flat, a huge amount of earth was moved during construction.

The entire course has been hand sprigged with Sea Isle 2000 seashore paspalum. At the time of my visit all grassing had finished with some holes nearly having a full cover. Others that were planted late in November still appeared bare, however, the material was present and ready to move when temperatures heated up.

Winter temperatures are a huge limitation for the growth of paspalum. From late November to mid February temperatures can be similar to a Melbourne winter with maximums around 15-17^{o}C. During January there is little that can be done except patiently wait until temperatures warm up. It was planned to apply some potassium (potassium nitrate), to encourage growth as soon as temperatures became warmer.

While there had been little activity on the golf course over December/January, it had given superintendent Mick Kelly the opportunity to source a reasonable workforce from the Philippines. He had organised about 20 Filipino workers, which will include an assistant superintendent, mechanic, spray operator and other people skilled with machinery. The rest of the labour force, probably around 25, will be sourced locally from the Gulf countries.

The fairways and tees were constructed from local sand with two amendments incorporated to help retain moisture and improve nutrient retention. The sand, however, tends to crust quite severely and water penetration can be difficult once the surface dries out. This was particularly evident after 40mm of rainfall fell within 12 hours and a substantial area of newly sprigged ground was washed away.

Due to the lack of area on the course, the intended areas for bunkers have not been shaped but levelled with the fairway construction and grassed. Once mature, these areas on the course can be used as a source for plugging or other sprigging. The bunkers are then formed after that.

Being wall-to-wall Sea Isle 2000, the rough will probably be left short as the paspalum becomes quite spongy and nearly impossible to play from if long. Certainly a possibility in the winter will be to oversow the rough with ryegrass to create a deeper rough.

Areas outside the rough will probably be planted with shrubs and grasses, at least within the racetrack so as not to block the view. Holes outside the track (5,14,15,16,17 and 18) will probably be quite densely planted with palms and other similar species.

A possible limitation to maintenance of the course will be during horse training when maintenance work will not be able to start inside the track until training has stopped at 8am. Training is not all year round but is during winter months when it is also prime golfing time due to far more tolerable temperatures (temperatures get up to 56^{o}C in summer).

While temperatures can be oppressive for staff, the turf is also under a fair bit of stress. It has been calculated that 12mm of irrigation will be needed over the site each night to replace evapotranspiration.

The course has an underground water tank that can hold about 3.5-4 megalitres and a pumping station that delivers 2500 gallons per minute. There are three ornamental lakes on the golf course but these are filled with groundwater rather than the treated sewage effluent (TSE) used for irrigation.

The TSE has a salinity of 700ppm and few other negatives. It will be possible to water the course with the groundwater if there is ever a problem with the TSE, however, the TSE is preferred due to less wear and tear on machinery and infrastructure.

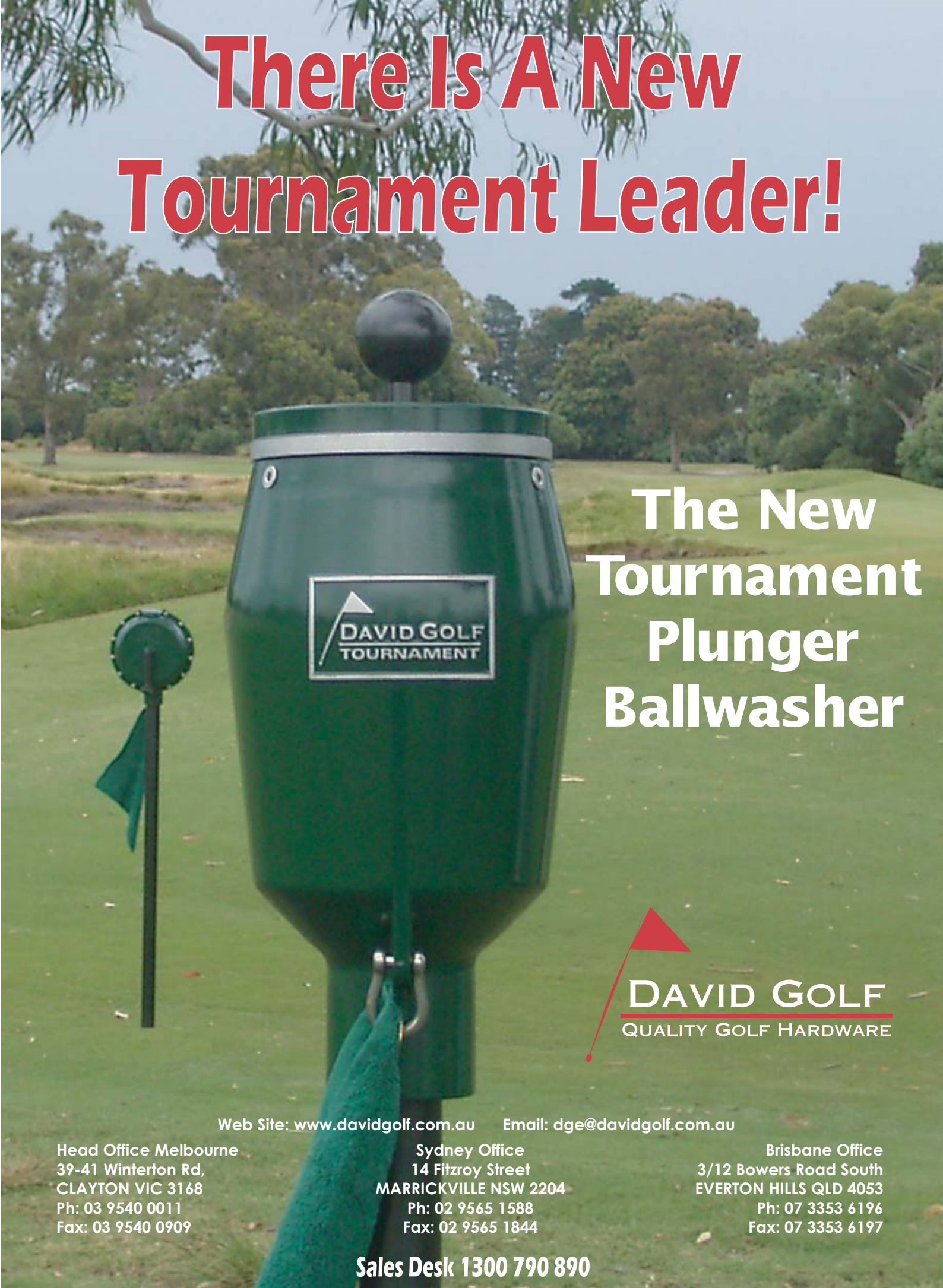
While in Kuwait, I also visited the Almadi Golf Club which is owned by the Kuwait Oil Company and is a traditional sand course. Pegs are positioned down the fairway that signify the boundary. If your ball is within the pegs you can play your ball off a piece of synthetic turf. However, if your ball is outside the pegs you must play it from the sand.

The sand greens appeared to provide a firm and true putting surface and were simply swept at the conclusion of the hole. Somehow I feel the Sea Isle 2000 fairways and greens of The Sahara will be a great improvement to golf in Kuwait.

ACKNOWLEDGEMENTS

I would like to extend my thanks and appreciation to all those who gave up their time to show me around their extraordinary golf courses during my travels, as well as the AGCSA Board and its members for the opportunity.

At the Sahara in Kuwait, bunkers are turfed over first and formed later due to space constraints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AGCSATech Update

BY JOHN NEYLAN

In his latest instalment of AGCSATech Update, John Neylan takes a trip around Australia and outlines some of the new golf course projects underway and their unique construction challenges.

The impressive bunker complex on the 17th at Pacific Harbour Bribie Island

Over the past few months, AGCSATech has inspected several golf courses under construction, and they all have different aspects that are of interest. Whether it be soil type, location, grass selection or environmental challenges, they all offer something new.

ST ANDREWS BEACH (VIC)

This golf course has a spectacular topography and architect Tom Doak has worked it well with the natural landscape that is so typical of the Mornington Peninsula. Superintendent John Geary, formerly superintendent at Frankston Golf Club, and his staff have done an incredible job in grassing the course and having it almost ready for play in just on 12 months.

Of particular interest are the quality of the Penn A4 greens, the use of fine fescue and bentgrass in the surrounds, and the Legend couchgrass on the fairways.

The golf course has used the native sands for the greens and tees, with Basamid as a fumigant. Given that methyl bromide is almost gone from the turf industry, it has been interesting to observe the success of Basamid as an alternative.

As well, there is an extensive revegetation works program, including the growing and propagating of thousands of native plants for establishment around the course.

PACIFIC HARBOUR BRIBIE ISLAND (QLD)

The site of this course was a flat, featureless former pine plantation, and architect Ross Watson is creating a rolling links style course that will cater for both the short hitter and the low handicapper.

Project manager Rick O'Loughlin and construction superintendent Marcus Hartup have done an excellent job to date. A feature of the construction has been the attention to detail, with a clean finish as each hole is completed.

In terms of grassing, Tifeagle has been used on the greens, an old favourite Wintergreen on the fairways and Plateau has been used around the bunkers. Plateau was selected by Ross Watson as a means of stabilising the bunker surrounds where native grasses could be established without being overrun by the couch. The prostrate growth habit of Plateau has served its purpose well.

PORT BOUVARD GOLF CLUB (WA)

This golf course is perched on the coast, and if your game is going badly then you can take a quick dip in the Indian Ocean. This course does provide a certain 'wow' factor with its views. The course is designed by Jim Wilcher of Golf By Design, and the construction is being managed by Trevor Strachan along with superintendent Darryl Outhwaite.

One of the great challenges of this site is

the water quality, with high salinity requiring a high level of management on the bentgrass greens. The bentgrass variety L-93 has been used to great effect, and is coping well with the salinity.

MAGENTA SHORES (NSW)

Magenta Shores is another coastal course constructed that has a range of features including an old landfill, remnants of a rutile mine, important remnant native rainforest, as well as the scourge of the NSW coast, bitou bush.

Bitou bush, with its aggressive growth, yellow flowers and high seed production, was planted originally for dune stabilisation and is now a major environmental weed.

The construction of the golf course has involved extensive bitou bush clearing and dune revegetation, which is under the control of environmentalist Anne Clements. It is interesting to note that without the golf course development, there may have been little done to control the bitou bush, or preserve the unique natural vegetation of the site.

Golf course architect Ross Watson is

Magenta Shores superintendent Kenton Boyd gets practical while testing bunker sand

relishing being able to work on such prime natural golfing country. The superintendent is Kenton Boyd, previously of Fox Hills Golf Club, and is now well involved with final grass selection and construction issues.

USE OF EFFLUENT WATER

A successful seminar was held in late February at Barwon Heads Golf Club to discuss results of the trials that have been undertaken over the past three years.

During the seminar we discussed the formulation of the environment improvement plan (EIP), the site-monitoring program, and the bentgrass/*Poa annua* trials.

The EIP, as it is known in Victoria, is the management document that each course must produce, describing the site conditions and how the effluent water will be managed in a sustainable manner. It is both a risk management document and a manual of best practice. We discussed the fact that the EPA is currently undertaking site audits, and that the course is following the EIP.

Issues were raised concerning the strictness of the guidelines on the reuse of effluent and the imposition this causes from a ▶

BY JOHN NEYLAN

One of the par 3s at St Andrews Beach

golf course operational perspective.

As we discussed, operational and infrastructure changes often have to be made to accommodate the use of effluent water. Particularly where the water is less than Class A quality, there are restrictions that are designed to minimise golfer contact and the movement of effluent water outside of the golf course boundaries.

This highlights the importance of the EIP in identifying key areas of risk, whether it is adjoining properties, uncontrolled public access areas, ensuring that water storages are completely leak proof, as well as protecting workers.

The development of the EIP and similar documents has raised issues in a number of states. Depending on who develops the document, it can, at times, have bias towards engineering and health issues and only provides scant regard to the long-term management of soils and turf.

It has become apparent on some sites that the salinity and soil conditions have not been appropriately addressed, and there are now significant turf management challenges ahead.

The key to a good EIP is to incorporate all the disciplines so that effluent reuse is sustainable, and does not cause site degradation.

QUEENSLAND AND SOUTH AUSTRALIA FIELD DAYS

In early February, AGCSATech was invited to the GCSAQ and SAGCSA field days. I attended the GCSAQ day at Gainsborough Greens Golf Club (superintendent Justin Kelly), while technical officer Andrew Peart attended the SAGCSA day at Glenelg Golf Club (superintendent Daryl Sellar).

At the GCSAQ day, we discussed root diseases and the problems of 'summer decline'. This provided a good follow-up to some investigation work AGCSATech had undertaken following advice from Dr Bruce Clarke when he was in Australia last year for the 20th Australian Turfgrass Conference in Melbourne. It was pleasing to hear that several superintendents had instigated some of Dr Clarke's recommendations.

In South Australia, Andrew spoke on winter conditioning, which tied in well with his picture collection from his recent trip to the UK (see article on page 22 – From St Andrews to Sahara).

Dune restoration at Magenta Shores

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Well-respected turfgrass breeder David Nickson is in the final stages of having two new vegetative couchgrass cultivars evaluated for Plant Breeders Rights. Fellow agronomist John Neylan outlines this Australian turfgrass breeding first.

Nickson breeds a new future

I have been fortunate during my years in the turf industry to visit turf research facilities in the USA, and I have always been interested in what new grasses have been developed.

Having inspected many trial plots, particularly those in the National Turfgrass Evaluation Program (NTEP), I have come to appreciate the superior quality of couchgrass varieties in Australia.

It started initially with Greenlees Park and Wintergreen, and then Windsorgreen was developed by Peter McMaugh through irradiation and genetic mutation techniques.

In more recent times, new selections such as Legend, Conquest and Riley's Supersport have been introduced into a wide range of sportsturf applications.

In the USA, couchgrass programs have involved the development of the dense, fine textured hybrids for use on golf courses and seeded varieties for more general sportsturf applications.

Of those cultivars used on golf course fairways and sportsfields, there are few that match the quality, adaptability and ease of management of the Australian selections.

Following this tradition of developing new couchgrass cultivars, there is an Australian first in the development of two new vegetative cultivars as the result of a cross-breeding program, followed by progeny testing and selection.

Responsible for these new cultivars is Victorian turfgrass breeder David Nickson, together with the assistance of Peter McMaugh and Dr Arden Baltensperger from the University of New Mexico.

I have been fortunate to know David since he

BY JOHN NEYLAN

Victorian turfgrass breeder David Nickson currently has two vegetative couchgrass cultivars being evaluated for Plant Breeders Rights

came to Melbourne as course superintendent at Peninsula Country Club in the city's south-east. Over the years of discussing the issues of the turf world with David, I have always admired his keen scientific interest in turf and, in particular, the development and application of new grass types.

The product of 20 years scientific interest and work has finally come to fruition with the breeding of these two new couchgrass cultivars.

The development of new turfgrass cultivars is a long process, particularly when it involves cross-breeding different plants, collecting the seed, growing the individual seeds to mature plants, selecting the best of these and then undertaking field trials.

David started collecting couchgrass plants from the Peninsula Country Club with mentor Peter McMaugh in 1985. Plants were selected from patches that demonstrated superior turf density, quality and winter colour retention.

David has always travelled widely and has developed an enviable group of contacts among the turfgrass scientific community. Dr Baltensperger, from the University of New Mexico, is a turfgrass breeder who has assisted David in this breeding program.

In 1987, Dr Baltensperger started a breeding program using the couchgrass plants collected in Australia, with the aim of producing seeded couch varieties.

The progeny were assessed in trials at Peninsula Country Club and the variety Princess was released for commercial use. Princess is possibly the best of the seeded couch varieties with excellent density and turf coverage.

In the AGCSATech trial plots at Lakelands Golf Club it has been far superior to the other seeded types that are more open textured and lack winter density.

The progeny of this first cross was back-crossed to Wintergreen and the cultivar C5 resulted. C5 was included in the National Couchgrass Trials *(Neylan and Robinson, 1997)* and rated highly in trials that included Wintergreen, Windsorgreen, Legend and Santa ana.

In 1997, C5 was crossed with Wintergreen and the seed harvested. In 2000, the individual seeds were germinated on blotting paper and individual seedlings transferred to pots. Selections were made, with plant numbers reduced to 30 and then planted into field plots for further evaluation at Evergreen Turf Farm in Pakenham, Victoria in 2002.

During 2003, two of the plants (DN9 and DN12) were selected for Plant Breeders Rights (PBR) evaluation through Dr Don Loch (Department of Primary Industries, Queensland) for registration as cultivars.

PBR are exclusive commercial rights to a registered variety. The rights are a form of intellectual property, like patents and copyright, and are administered by the Plant Breeders Rights Act (1994).

Only new or recently exploited varieties can be registered. A new variety is one which has not been sold with the breeder's consent, while a recently exploited variety is one which has been sold with the breeder's consent for up to 12 months in Australia.

To be eligible for protection, the application must show that the new variety is distinct, uniform and stable. That is, the new variety must be distinct in at least one characteristic from any other variety of common knowledge. For example with DN9 and DN12, a comparator could be any other couchgrass already available.

Uniformity relates to the number of off-types (ie: plants that do not conform to all the distinctive characteristics of the variety) that may occur in a variety.

For a new variety to be considered uniform, it must not exceed a maximum number of off-types according to the PBR table for uniformity. Stability is a measure of how true to description ▶

The DN9 cultivar plot at Evergreen Turf Farm in Pakenham

The DN12 cultivar is fine-medium textured and has high density

a variety remains after repeated propagation.

To obtain acceptance of an application and provisional protection, it must be established that there is a *prima facie* case that the variety is distinct from all other varieties of common knowledge.

To obtain a grant of PBR, the applicant must verify these claims normally by conducting a comparative test growing which include the new variety and the most similar varieties of common knowledge.

David Nickson, under the guidance of Dr Loch, has undertaken extensive trials measuring various growth characteristics such as stolon extension rate, internode length, leaf width and leaf length.

When a PBR application is made it is a requirement of the PBR Act that an accredited qualified person is employed to assist in the comparative trials and the application. This person (in this case Dr Loch,) in collaboration with the PBR office, accepts responsibility for all aspects of the comparative trial, including the choice of comparative varieties, experiment design, collection of data, statistical analysis and preparation of a description of the variety.

DN9 and DN12 are also being evaluated in the Victorian Golf Association's turfgrass trials at Metropolitan Golf Club (superintendent Richard Forsyth) where they have exhibited good winter colour and a high degree of heat and drought tolerance.

DN9 is fine textured, has excellent lateral growth and has exhibited excellent winter colour. The proposed name, subject to PBR, is Winter Gem.

DN12, on the other hand, is fine-medium textured and has high density which is related to the very short internode length. It also has good winter colour and the proposed name is Grand Prix. Both varieties will have a wide range of applications, in particular for tees and fairways.

With the final PBR work now being done, the new cultivars should be commercially available within 18 months.

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Establishing kikuyu plots at Shenton Park

Managing Kikuyu Under Australian Conditions – UWA Research Project

Improved information on nitrogen fertiliser use and the control of mat and thatch in established kikuyu has been identified as a research priority for the Western Australian turfgrass industry. The University of Western Australia has initiated a new study investigating practises to maximise turfgrass quality, while minimising nitrogen leaching and mat accumulation.

Australian turfgrass managers are seeking more cost efficient and environmentally acceptable approaches to manage turfgrass. Applying fertilisers, irrigation, mat and thatch control all contribute to the cost of managing turfgrass, and depending on the approach taken, can also pose a risk to the environment.

Our understanding of turfgrass management practices and their effects on the environment is based mainly on data from cool-season turfgrasses grown in the Northern Hemisphere. Therefore, the overall aim of the University of Western Australia's (UWA) three-and-a-half year Kikuyu Research Project is to optimise nitrogen fertiliser and mat control management practices for kikuyu under Australian conditions.

SPECIFICALLY THE PROJECT WILL:

- Assess if optimising nitrogen fertiliser management maximises turfgrass quality while minimising nitrogen leaching and the accumulation of mat and thatch (Experiment 1);
- Determine if mat and thatch accumulation effects turfgrass water-use (Experiment 2); and
- Compare non-destructive and destructive methods for controlling and managing the accumulation of mat and thatch in turfgrass (Experiment 3).

EXPERIMENTAL APPROACH

The project is being conducted at the UWA Turf Research Facility at Shenton Park, WA. The site includes a variable-speed travelling irrigator that allows water to be applied at known rates as calculated using an on-site weather station.

Plots have been established from turfgrass of two ages – 20-week-old turfgrass ('young' turfgrass), and 20-year-old turfgrass ('old' turfgrass). The 'young' turfgrass was newly grown sod, cut to a depth of 15mm, while the 'old' turfgrass was cut from a golf course fairway to a depth of 50 mm so as to include a mat layer.

Parameters measured in the experiment will be compared with those at selected industry sites. Management techniques relevant to the turfgrass industry will be used at both the experimental and industry sites, so that information provided by the research can be utilised by end-users.

EXPERIMENT ONE

The effects of nitrogen fertiliser management on clipping production, turfgrass quality, mat and thatch accumulation, plus nitrogen leaching from kikuyu of varying age will be determined in this experiment.

The study includes two turfgrass ages, three nitrogen application rates (50, 100 and 150 kg N/ha per year), and three fertiliser application frequencies (twice a year, four times a year and every four weeks). There are three replicate plots per treatment, plus turfgrass plots that receive no nitrogen fertiliser. These nitrogen rates and application frequencies

represent the range of practices used in Perth for maintaining established kikuyu turfgrass.

The effect of nitrogen fertiliser regimes on nitrogen leaching will be evaluated using soil lysimeters installed in each treatment plot. Lysimeters comprise of turfgrass grown on a column of soil (250mm in diameter by 900mm in depth) with a container at the base for collecting leachate. Leachate is collected weekly, the volume measured and a subsample collected for total nitrogen, nitrate and ammonium analyses.

EXPERIMENT TWO

The aim of this experiment is to determine if the accumulation of mat and thatch alters water use and water infiltration rates of kikuyu turfgrass of two ages.

The study includes two turfgrass ages, three nitrogen application rates (0, 50 and 150 kg N/ha per year), and three replicates per treatment. Nitrogen fertiliser will be applied four times per year. The effect of mat and thatch accumulation on water use (i.e. evapotranspiration) will be assessed using 'weighing lysimeters' installed in each treatment plot.

EXPERIMENT THREE

The effectiveness of methods for controlling and/or managing mat and thatch accumulation in kikuyu turfgrass of varying age will be determined in this experiment.

It will investigate the impacts of control methods on mat and thatch accumulation, water infiltration rates and turfgrass growth and quality. The study includes two turfgrass ages, five mat and thatch control techniques (none, scarifying, coring, dusting, and coring plus dusting), and three replicate plots per treatment.

The effect of these different control

The 'old' turfgrass was cut to 50mm

techniques on mat and thatch accumulation will be assessed by measuring the depth, density and organic matter content of the mat and thatch. These parameters will be measured immediately before applying the control treatments, and then at regular intervals after applying the treatments. Other factors known to influence mat and thatch accumulation will also be measured, including soil aeration and soil pH.

BUILDING ON PREVIOUS RESEARCH

A number of research studies have been conducted by the UWA Turf Research Program, since 1996. These studies have investigated:

- Irrigation requirements for turfgrass maintenance in WA;
- Fly ash as an amendment for increasing soil water holding capacity under turfgrass;
- Soil sensor technology for improving irrigation management of turfgrass; and
- Irrigation and fertiliser regimes that maximise turfgrass production, and minimise nutrient leaching.

Findings from these studies have shown that matching irrigation rates to turfgrass requirements not only saves water, but also minimises nutrient leaching. The research has also demonstrated how improving soil water holding capacity can further improve the water-use efficiency of turfgrass grown on sandy soils.

The Kikuyu Research Project shifts our attention from irrigation management to other costs associated with turfgrass management-fertilising, mowing and renovation.

OUTCOMES

The benefits of the kikuyu project to the turfgrass industry will range from cost-savings, to better environmental management and an improved public perception of turfgrass management. Research findings will be summarised in an industry fact sheet, and published in industry and scientific journals.

ACKNOWLEDGEMENTS

This research is supported by Horticulture Australia Ltd (Project TU04001), Parks & Leisure Association of Australia, CSBP Ltd, Organic 2000, Turfgrass Association of Australia (WA), GCSAWA, Baileys Fertilisers, Turf Master Facility Management, Turf Growers Association of WA, Lawn Doctor, Micro Control Engineering and WA Water Corporation. Alroh Turf Machinery and Dr Baden Clegg Pty Ltd are thanked for providing turfgrass maintenance and assessment equipment. Challenger TAFE, local government and golf course staff are thanked for assisting with the establishment of the turfgrass plots. The Western Australia Golf Club is thanked for providing turfgrass. Members of the UWA Turf Industries Research Steering Committee and Kikuyu Research Committee are thanked for their support and advice.

Louise Barton, George Wan, Renee Buck and Tim Colmer, are part of the Faculty of Natural and Agricultural Sciences, University of Western Australia, http://www.fnas.uwa.edu.au/turfresearch/index.htm

opinion

North Carolina State University turfgrass entomologist Rick Brandenburg passes on some of his observations and experiences from the United States about dealing with negative press surrounding major turfgrass management issues such as pesticide usage.

The Story of Progress

In the past year, I have read with great interest stories in Australian Turfgrass Management magazine (ATM) about increased concern over the environmental consequences of turfgrass maintenance particularly associated with the use of pesticides.

It seems the issue has taken on a life of its own and rarely do I read a publication associated with turfgrass in Australia that environmental concerns are not mentioned. Of course, one of the stories as reported by ATM in Vol 5.6 (December-January 2004) and revisited in Vol 6.6 (December-January 2005) was the Warringah Golf Club incident.

This unfortunate incident is similar to those that have happened throughout the world that have seemed to galvanize the movement against the use of pesticides on turfgrass. The stories I am now reading from Australia have a familiar ring to them in that they sound much like what we have been experiencing here in the US, just for a longer period of time.

It seems that the 'attacks' come from all directions, perhaps some of them well-founded with facts and others so far out they seem like science fiction. The unfortunate thing is that even those that are pure fiction require our time to address and still often have a residual affect of harming our industry.

While I do not live in Canada, I receive constant news of the negative attacks on the turfgrass industry in that country and the frustrations that turfgrass managers face. In many municipalities and other areas, the use of all pesticides for cosmetic purposes is banned or greatly reduced.

This has placed a great burden on the turfgrass manager, often significantly limiting his/her ability to maintain quality turf and has often greatly increased the cost of doing so. This has been a challenging and frustrating time for the industry in that country.

We see similar attempts to greatly modify the pest management options available for turfgrass in the US. This has been especially true in areas of the Northeast and the West Coast (primarily California). Pesticide use has been banned in certain areas and the end result has sometimes been greatly increased costs of management and significant reductions in turfgrass quality.

Now I am not trying to say that we can't reduce pesticide use in turfgrass with the latest technology and a very integrated approach. Rather, my concern focuses on the total elimination of pesticides based on less than sound science, with no plan for alternative means to maintain turf quality.

Pesticides are used today, because for the most part, they are a required input to maintain the quality of turfgrass that the majority of the public demands. The public has not, in my recent memory, asked for poor quality golf conditions, less attractive gardens and lawns, and sportsturf in poor condition. Rather it seems they keep asking for higher quality.

I sympathise with Australian turfgrass managers. It seems that the harder you try to do your job right, use integrated approaches to minimise unnecessary pesticide use, and be an environmentalist, that we get attacked and regulated even more.

Of course this comes from two angles. First, it comes from people who really don't have a clue as to what we do and the effort we put in to grow healthy turf that is tolerant of pest problems. Secondly, it comes from groups who see little value in quality turf whether it be for golf courses or home lawns. We may never change that attitude.

One thing is for sure, some people's opinions are not going to be changed. However, the groups that fit into this inflexible mindset is

BY RICK BRANDENBURG

The 2001 Warringah GC pesticide spill created a groundswell of negative press (photo: Martin Lange, Manly Daily)

a small, but very vocal, committed, and active group. Much of society doesn't know the truth, but is often scared by sensationalised stories of mass death and destruction.

While this may be an over simplification, I think we all know that the turf industry is often portrayed in an inaccurate and highly negative perspective. We have not taken a very aggressive approach in dealing with this negative picture of our industry.

One thing that does happen when we are aggressively attacked by groups or the media or an unfortunate incident such as Warringah occurs, is that if makes us evaluate what we do and how we do it. It forces us to place more attention on what we are doing, the products we utilise and the steps we take to minimise the potential for problems and develop plans for responding.

Whether an environmental problem happens through neglect or despite the best of efforts to avoid such problems, we all know that problems do happen. We all understand we must have plans to prevent problems that are consistently followed and frequently evaluated and updated.

We also need two more plans. A plan to seek best management practices for the turfgrass we manage that reduces inputs of products that have the potential for negative environmental impacts. This is an ongoing process that exceeds the scope of this article. The second plan is one of improved public relations both on an individual basis (you as a turfgrass manager) and your organisation and industry (as a unified and highly visible voice).

Here's what I've have done and encouraged my colleagues to follow. We've tried hard to document the value of turf, the role of the plant in the ecosystem and its value in reducing erosion, reducing dust, producing oxygen, reducing temperatures in the summer, etc.

We've documented the monetary value of the turfgrass industry. This is something we've done in North Carolina, the state in which I live, and this has really caught the attention of many, particularly key people in government. However, most people will say that this is all fine and good, but you can't eat turf. Why expose us to potentially damaging chemicals for turfgrass, at least reserve those uses to those food crops from which we receive a direct feedback.

One approach we took in the US back in the 1980s to combat these constant attacks on pesticide use was to tell the public about all of the other more significant concerns they should be worried about. In other words, why would you worry about a little pesticide exposure, when there are so many other threats to your health?

That's a good question based on a lot of supporting documentation, but it falls on deaf ears.

Added to that is the previously mentioned fact that a lot of people don't think pesticide use on turfgrass is worthwhile in the first place, and secondly, it is a risk they can't control.

Our newer approach is two-fold. First, we develop our pest management strategies that look at all options. And there are more options than ever for making a strong effort to reduce ▶

environmental risk. There are more cultural, non-chemical, and biological options.

The opportunities to incorporate other options are greater than ever, but there is still often the lingering handicap that other options don't always work as quickly or as effectively as our traditional chemical options and may require more effort. While there is some truth to this, the gap seems to narrow each year.

The second approach is one of using those current products that have the most favorable environmental profile. This is an area where there has been a lot of exciting developments in recent years. Comparing the old products that many of us had become accustomed to using, like the organophosphate and carbamate insecticides, to many of our newer products, it is easy to point out the major gains made in producing products that have a reduced threat to the environment.

This is good news and it is important news. We can use these products that are highly effective and typically have lower mammalian toxicities and other parameters of environmental concerns and apply them at lower rates than the old standards.

This is a big advance and not one that we have made much noise about. I think as an industry we are afraid that this simply reflects a continued reliance on conventional pesticides and not real progress. I disagree. I think it represents a significant point of progress.

Research has led to many improvments in management practices

This is a major success for our industry that we have failed to relay to the general public as well as those who have been critical of our industry. Moving to the latest products and selecting from a greater array of products with better environmental profiles is progress.

Our understanding of pest biology allows us to target these products more accurately to those sites that truly require treatment and in a more timely manner due to improved ability to forecast or predict pests. I think it is time we told this success story.

The Australian turfgrass industry has entered a period of closer scrutiny and will most likely, just as seen in the US, be subject to more regulation, more criticism, and more efforts to exploit negatives associated with maintaining high quality turf.

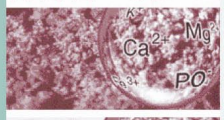
We have had success documenting the benefits of turf from an environmental and human health perspective, the economic impact of the turfgrass industry, the high level of technology involved, and the stewardship we accepted to maintain high quality turf.

We have shown that high quality turf is more than just a luxury item, but rather it is an integral part of everyone's daily life. Most importantly, we have documented that we are using the latest, most environmentally-sound products and approaches to turf management and that the progress in this area over the past 10 years has been outstanding.

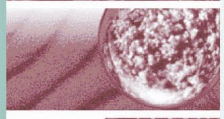
Rather than attempting to downplay the use of pesticides, I think research has provided us with enough significant progress that rather we should recognize this as a real positive story for our industry to tell.

Rather than allow ourselves to be the object of constant criticism, I think it is time we presented the story of science, education, and progress in our industry.

Research



Soil Nutrient Analysis

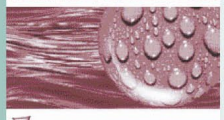


Soil Physical Analysis

Plant Tissue Analysis

Disease Diagnosis

Nematode Diagnosis



Water Analysis

Advisory Services

TIME FOR SOIL TESTING!

Send samples to AGCSATech

AGCSATech

Analytical, Diagnostic and Consultancy Services

The Koro FTM at work on the NSWGC fairways

A REEL GOOD IDEA

Australians are known for their ingenuity and a few members of the turf industry have had their hand in influencing this particular innovation.

Most superintendents and turf managers will be familiar with the Dutch produced Koro Field Topmaker used for sportsfield renovations. A while back it was mooted to include a scarifying reel attachment, but despite talks about it during a Koro company development meeting in 2001, the idea wasn't acted upon.

The actual implementation of the scarifying cassette came as a result of an initiative by Perth-based contractor Turfmaster for its 2m Koro FTM200.

Then in April-May 2002, Geoff Hatton's NSW distribution company Manoeuvre Mow constructed a cassette option bolt-in, bolt-out scarifying reel complete with bearings, mounting plates and belt pulley for the smaller Koro FTM120 model.

Manoeuvre Mow carried out some development work and after accommodating the requirements of NSW Golf Club superintendent Gary Dempsey, a better performing variant resulted following trials on the fairways at NSW.

The Australian initiative was subsequently taken up by the Europeans after inspecting the results at NSW just prior to the 18th Australian Turfgrass Conference in Brisbane in 2002.

Scarifying the fairways at NSW is one of the larger projects Dempsey undertakes and for some 60 years the fairways at the club had never been scarified. Since purchasing the Koro FTM with the scarifying reel attachment, Dempsey has been able to carry out some serious scarification programs. In 2002 he extracted some 23 semi-trailer loads of material and in the 2004 completed a second program which produced 12 semi-trailer loads of material.

Syngenta recognises our innovative superintendents and is proud to present Gary Dempsey of NSW Golf Club with a $150 AGCSA book voucher.

If you have, through necessity, devised or created a tool/piece of machinery gadget or made alterations to an existing piece of machinery or workplace tool to make the job easier, then we want to know about it! Call or email Brett Robinson at the AGCSA (03) 9548 8600 or brett@agcsa.com.au

STEPHEN LEWIS (ROYAL HOBART GOLF CLUB)

Royal Hobart superintendent Stephen Lewis

Nickname: Lewie
Age: 42
Family: Wife Tina, daughters Keryn (15) and Claire (13)
Years as a superintendent: 19
Years as an AGCSA member: 20
Current club: Royal Hobart, 27 years
Number of staff: 6
Course specs: 18 holes, 6130m, Poa/bent greens, tees and fairways fescue, ryegrass and native bent mix.

Favourite piece of machinery? Postie bike and vertidrain.
Most embarrassing moment as a super? Turning a block of tee sprinklers on and not realising a golfer was hitting off. One sprinkler was right between his legs.
Funniest moment seen on course? An old general manager was driving around the course in his car when he drove off the top of a very high greenside bunker and wedged the car tittering half over. He was too scared to get out of the car, so he waited for help.
Plans for the course over the next two years? Construct new tee beds on 2, 6 and 8 and new fairway bunkering on 2 and 16.
Best advice you have ever received? With a small staff, you must have good people and machinery.
One thing about your job you would change? To tell the staff if a golfer does anything wrong on course, you can mow over their ball.
Best part about being a superintendent? Getting up and about early when nobody is on the course.
Worse excuse from a staff member? Hydraulic oil dotted across a green in 20c piece blobs. The apprentice said he thought the mower wheel had driven through some duck droppings and had come off the wheel as he went up and down the green.
Favourite spot on the course? The 13th fairway early on a winter's morning covered in frost with the temperature at 0^{o}C.
Career highlight? Hosting three Australian Amateurs and three Tasmanian Opens.
Favourite movie? Something About Mary.
Name 3 CDs you could not live without? Only one - Powderfinger, which I listen to loud while doing the housework.
If you could be any musician, who would you be? Peter Garrett, because he gets paid heaps to look like a goose.
Favourite sporting team? Go the mighty Bombers.
Sporting team you despise? Carlton.
Dream car? 770 Charger.
Irritations? People who reckon it rains a lot in Tassie.
Beer or Bundy? A nice cold Cascade draught.

Castle Hill superintendent Martyn Black and his trusty assistant Vincent pine for their fallen radiata

WHEN IT RAINS IT POURS

Superintendents are generally a pretty tolerable bunch, but after some of the extreme weather events battering courses around the country in February and March, the patience of many will have been sorely tested.

The joke around Melbourne metro superintendents now is that in the short space of three months they have experienced two supposed 'one-in-a-hundred year' storms and one 'one-in-150-year' storm.

The most recent drenching came on 2-3 February with rain falling continuously for 31 hours and totalling 23 per cent of the city's annual rainfall. For the 24-hour period to 9am on Thursday, 3 February, 120.2mm of rain fell, the highest daily total ever recorded in Melbourne. The previous record was 108mm recorded on 29 January, 1963.

It was almost three-times Melbourne's average February rainfall of 47mm and helped contribute to the Victoria's wettest February since 1973 and the sixth wettest since records started 106 years ago. Compare that with Perth which experienced its driest summer since 1997/98 with just 5.6mm of rainfall recorded.

Added to the drenching Melbourne received were wild winds which ripped up many trees and caused widespread damage across the city, particularly at a number of golf courses.

VGCSA president and Riversdale Golf Club superintendent Michael Picken suffered $20,000 worth of tree damage, while across at the Commonwealth Golf in the heart of the sandbelt, superintendent Mark Prosser also lost a number of trees. Prosser said he had 104mm in the rain gauge at 5.45am and had the greens playable just over an hour later.

However, it was those supers whose courses border the Yarra River that were hardest hit including Kew, Greenacres, and Yarra Valley who in recent times have also suffered extensive damage and costly reconstructions following severe storms.

One amusing anecdote to emerge out of the carnage was Greenacres superintendent Tim Pierce. According to Michael Picken, Pierce and his 2IC became stranded in the middle of the Yarra while inspecting their course.

Greenacres has a barge on the Yarra and it is used to survey up and down the Yarra boundary. However, due to the river being in flood, the barge became snagged on some cables which had become submerged.

ATM is not sure how he managed to get himself and his colleague out of that bind, but the image of a sodden Tim on his mobile in the middle of the raging Yarra takes some beating.

It wasn't just Melbourne that was hit that week either. Down on the Bellarine Peninsula, superintendent Peter Frewin arrived at work to find his office at Barwon Heads Golf Club in ankle-deep water.

Meanwhile, at the Rich River Country Club on the Victorian and NSW border, superintendent Andrew Johnson had 90mm one night and returned to work the following day to see his course littered with debris. Considering he was a week out from hosting a major tournament at the Moama course, it wasn't exactly the ideal lead-up.

Back in Melbourne, the famous grass courts at premier tennis venue Kooyonga were, according to alarmist television reports, "destroyed", while the neighbouring fields of Scotch College and St Kevin's College resembled extensions of the Yarra.

Not to be outdone, Castle Hill Country Club superintendent and AGCSA Board member Martyn Black and his crew had a busy February/March with three storms unleashing their fury on the north west Sydney course.

One of the storms took such a liking to Blackie's patch that after passing over it from the south west, it came back for another look from the north east, dumping 40mm in 10 minutes and hail stones the size of golf balls.

"The greens resembled a Ray Charles music sheet," quipped Monsieur Black. "There were hundreds of little pockmarks everywhere. We had to close them for 24 hours but they came back okay."

The club also lost a number of trees including one its historic club emblems, a 200-year-old bunya pine, as well as a 50-year-old radiata pine (pictured).

Sydney's rainfall average for February was slightly up with 125mm recorded. This, however, fell over four days, the lowest number of days since 1939 and the second lowest on record.

DOME EXTENDS SUPPLY CONTRACT

Telstra Dome has renewed its turf supply contract with HG Turf

HG Turf will remain the sole turf supplier to Telstra Dome following a new two-year turf supply agreement signed in January.

Telstra Dome management has elected to take the maintenance of the playing surface in-house, while HG Turf will continue exclusive supply of turf to Telstra Dome, as it has done since 2001.

Telstra Dome chief executive Ian Collins said that taking maintenance of the turf in-house from 1 January, 2005, is consistent with other services being taken in-house, including security, cleaning and parking.

"The decision to bring ground maintenance services in-house is in accordance with the current operating strategy of the company. Our decision in no way reflects upon the standard of service provided by HG Turf," Collins said.

Telstra Dome management has also acquired the necessary expertise to undertake the maintenance of the Melbourne sporting arena by employing HG Turf's existing arena manager Gavin Darby and assistant arena manager Justin Lang.

HG Turf managing director Hamish Sutherland said he is satisfied Telstra Dome will have the right personnel to maintain the playing surface. "Our existing arena manager and assistant have maintained the turf on the arena for a combined total of five years now," Sutherland said.

"They have a good understanding of the stadium's difficult growing environment and what it takes to make turf grow in the shade.

"They are also familiar with our turf product (Motz Stabilised Turf) which is used at the stadium to replace worn turf areas mid-season.

"Mid-season turf replacement is a necessity at the stadium. The turf at the northern end of the field receives no sunlight in the winter months and cannot recover from repeated use and must be replaced."

In 2005 Telstra Dome will hold more AFL fixtures than any other stadium in the country – 49 compared to the MCG's 42 scheduled matches – and on top of this Telstra Dome will host nine 'triple-header' weekends with most of these falling in the winter months when the roof is typically closed.

Mr Sutherland said the greater event schedule for the 2005 season will place added pressure on the turf but he believes with the right management and turf replacement system, the surface should continue to improve.

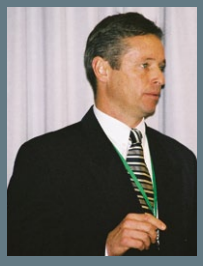
Motz Stabilised Turf is a turf replacement system which allows worn turf to be replaced mid-season with minimum disturbance to weekend events. The product is quickly laid and can be played upon immediately after installation. Each roll weighs 80kg per m^2, hence it cannot be moved underfoot.

Motz Stabilised Turf is installed in large rolls (1m x 10m) with a depth of 50mm. The 50mm comprises of turf and the sand-growing medium, which is strengthened with an artificial base and synthetic fibres.

IN BRIEF

EASTON STANDS DOWN

March was the month for resignations with two of the turf industry's high profile superintendents standing down from their respective association postings.



Craig Easton has stepped down as NSWGCSA president

Craig Easton stepped down as superintendent from Carnarvon Golf Club and subsequently as president of the NSWGCSA. Committee member Martin Bradbery from Manly Golf Club will step up to take over the vacated president seat.

Meanwhile in Victoria, Kingston Heath Golf Club superintendent Martin Greenwood has resigned from the AGCSA Board for personal reasons. Greenwood's position as treasurer has been filled by Western Australia's Allan Devlin (Secret Harbour Golf Club). Devlin, a previous winner of the AGCSA Golf Championships, is a former president and current committee member of the GCSAWA.

In other state association movements, Michael Picken (Riversdale Golf Club) will stand down as president of the VGCSA at the association's AGM in May at the Peninsula Country Club. Picken, who has been president for the past three years, will be replaced by Commonwealth Golf Club superintendent and current VGCSA vice-president Mark Prosser.

TPA CONFERENCE

The countdown is on to the Turf Producers Australia conference in Wollongong from 10-13 April. Around 200 delegates are expected for the four-day event to be held at the Novotel Northbeach Resort.

Speakers include Dr Jeffery Krans from the Mississippi State University and Western Australian water conservation expert Jos Mensink. AGCSATech manager John Neylan will also present and will be joined by other local speakers Phil Ford (NMIT) and Professor Peter Martin (University of Sydney). A turf equipment field day is also scheduled.

SPARE A THOUGHT

While parts of Australia experienced some extreme weather events during the summer months, little could top the tsunamis that ripped through Asia on Boxing Day 2004.

The enormous loss of life and widespread devastation sparked a worldwide humanitarian aid effort and the many stories of survival and escape left many lost for words.

But spare a thought for the curator of Galle Stadium in Sri Lanka. Located near the coastline, the famous cricketing venue took a direct hit when the tsunamis came ashore.

Galle was one of Sri Lankan cricket's most successful venues with the national team scoring seven victories from 11 Test matches played there since 1998.

Quoted in Melbourne's The Age newspaper, Galle Stadium curator Jayananda Warnaweera said it would take up to a year to remove 15-30cm of topsoil and replant the turf. "The reconstruction will cost about 300 to 400 million rupees ($3.8 to $5.1 million)," he said.

Warnaweera, who is a former Sri Lankan test cricketer himself, was also quoted: "This is my first love. This means I have lost a part of my life."

MARCUM HEADS DOWN UNDER


Dr Ken Marcum

Professor Kenneth Marcum from the Arizona State University will be the University of Melbourne's School of Resource Management Visiting Scientist for 2005.

During his stay from mid May to mid August, Dr Marcum will be working with Dr David Aldous in setting up a salinity tolerance screening system and initiating work that will screen Australian native grass germ plasm for turf use.

Dr Marcum hails from the Department of Applied Biological Sciences, Arizona State University, and has research interests in turf and landscape water conservation, salinity tolerance in turf and native grasses, water, salinity, and heat stress physiology of grasses and landscape irrigation with reclaimed water.

His teaching program at Arizona State includes subjects on turfgrass management, turfgrass science-environment, and provides for student internships.

As part of his visit Down Under, Dr Marcum will be a keynote speaker at 21st Australian Turfgrass Conference to be held in Moama from 6-10 June where he will discuss salinity issues.

Dr Marcum will also be presenting at the New Zealand Sportsturf Conference in late May and will conduct an industry seminar at the University of Melbourne in August.

For more information, contact Dr David Aldous at the University of Melbourne.

APPOINTMENTS

After an incredible 40 years at Horsham Golf Club in country Victoria, Max Ward has stepped down as superintendent. Ward, who remarkably worked only part-time at the club and held down another job as well, started at Horsham as an apprentice some four decades ago. ATM wishes Max all the best in his future endeavours. Ward has been replaced by Tim Warren, who has come across the border from South Australia's Mt Gambier Golf Club. At the time of going to press, Mt Gambier was in the process of interviewing for a new superintendent.

Also crossing borders is former New South Wales Golf Club assistant superintendent Shane Brogan who has headed south to take up the superintendent's posting at Torquay in Victoria.

Pat Day has taken over from Blair Littlechild at McLean Golf Club in northern NSW.

Know of any new appointments? Then contact Brett at the AGCSA on (03) 9548 8600 or brett@agcsa.com.au

RAIN BIRD SENSES A WINNER

Rain Bird has launched a device that shuts down irrigation systems when the heavens open.

The Rain Bird RSD Series rain sensor is an easy-to-install and durable device suitable for 24 VAC residential and commercial applications. It saves water and extends the lives of irrigation systems by automatically measuring precipitation and preventing irrigation systems from watering in rainy conditions.

The sensor offers the flexibility of multiple rainfall settings of between 5-20mm with the twist of a dial and an adjustable vent ring to control drying time.

It comes with a 7.6m length of UV-resistant extension cord for connection to all popular 24 VAC irrigation controllers, and a five-year warranty.

With a switch electrical rating of 3A at 125/250 VAC, this simple solution to the water saving problem is suitable for low-voltage 24 VAC control circuits and 24 VAC pump start relay circuits. It can be used with up to 10 solenoid valves per station, plus one master valve.

Available in both bracket and conduit versions, the Rain Bird RSD Series rain sensor is made of UV-resistant polymer to combat the elements, is UL and cUL listed and CE and C-Tick approved. It has also just been awarded th e Smart Approved WaterMark stamp of approval, a sign of distinction devised by the Water Services Association of Australia (WSAA), the Irrigation Association of Australia (IAA), the Nursery and Garden Industry of Australia (NGIA) and the Australian Water Association (AWA).

The Rain Bird RSD Series rain sensor

For further information contact Dean Johnson at Rain Bird Australia, 10 Mareno Rd, Tullamarine, VIC 3043. Ph (03) 9338 1911, fax (03) 9338 1699 or email info@rainbird.com.au or visit the website www.rainbird.com.au.

UHRIG A CLEAR CHOICE

Christian Uhrig has been appointed as general manager of Queensland-based company Clearmake Pty Ltd which supplies environmental and waste equipment Australia and the Asia Pacific region.

Uhrig took permanent residency in Australia in 1999 after migrating from his native Germany and brings a wealth of business training and experience gained both in Australia and overseas. He will be instrumental in the continuing growth and development of Clearmake.

Uhrig can be contacted at christian@clearmake.com.au, or on mobile 0439 640 512. For more information on Clearmake's product and solution range, visit www.clearmake.com.au or call on +61 07 5455 6822.

JD HONOURS TOP DEALERS

John Deere has welcomed six dealers into its elite Manager's Club at a recent ceremony on Hamilton Island. The six dealers – Shane Lowry (Goondiwindi, QLD), Bill Armstrong (Finley, NSW), Jim Rolfe (Griffiths, NSW), Rob Vandersee (Toowoomba, QLD), James Rosenberg (Roseworthy, SA), Mark Etheridge (Ashburton, NZ) – achieved the highest performances across the 120 Australian and New Zealand dealer network.

JOHN DEERE

A HOLE NEW TWIST

Redexim-Charterhouse has released the new Verti-Drill designed to fit all new and existing Verti-Drain units utilising standard tine heads.

As the Verti-Drain pushes the drill tine into the ground, it spins or drills into the soil. When it reaches the bottom of the stroke, the two bushings inside the apparatus lock, thus preventing the drill from reversing. As the drill is pulled up, the loosened soil is brought up with it. The soil can be dragged or brushed back in quickly, eliminating the work of collecting cores.

The new Verti-Drill system consists of two parts – an upper apparatus with a 12½ or 16mm shank diameter that slips into the existing tine holder, and the actual 12½, 16 or 19mm drill tines that fit into the upper adapters. Depths up to 250mm can be achieved, at a pace up to seven times that of traditional drill aerifiers.

For more information contact Peter Ellis at Redexim-Charterhouse on (03) 9435 0955 or 0419 310 546.

PLANTING THE SEED

Turf Link has announced it will be distributing the BLEC Multi-seeder.

The unit is equipped with a multi-spike roll made from high quality, individual cast rings, which punch a network of holes in the surface. The spikes are tapered, and make the holes ideal for accepting the seed. Hole depth can be controlled via the rear smooth roll and top link.

The accurate stainless steel seeding system will spread all types of grass seed, between 0-50 grams per square metre. Seed incorporation into the holes is via either an adjustable drag brush or hydraulic rotary brush, mounted behind the hopper.

The operation is made complete by the smooth flat roll, which closes up the holes to leave a groomed finish. There are three models to choose from - 140cm, 180cm and 240cm.

For more information, contact Michael Pauna on 0414 821 694.

TURF LINK
AUSTRALIA PTY LTD

Check out the AGCSA's new online trade directory for more turf industry product information
www.agcsa.com.au

HAVE YOU SEEN THE LATEST ADDITION TO THE AGCSA WEBSITE?

www.agcsa.com.au

The product directory web-pages allow you to search for products and distributors near you. Keep up to date on any industry specials, get information on the latest product releases, and trade news.

Contact Scott Petersen 03 9548 8600 to list your products.

AGCSA member benefits

MEMBER BENEFIT FOCUS

AGCSA Trade Directory

Since the launch of the revamped AGCSA website this time last year, it has become a primary tool for the association to communicate and service its membership base.

New features have been continually added including the online auction, while members can now pay accounts and make purchases for discounted merchandise and books.

One of the most recent sections to appear is the AGCSA Trade Directory, which enables superintendents and turf managers to search for anything turf related in Australia.

Located on the AGCSA website, simply click on the trade directory link in the top menu bar and you will be presented with a series of drop down menus containing various product categories. You can search by individual product category, by state or via a keyword search.

The product categories include: analysis and technical services; building supplies and prefabricated buildings; chemicals; contractors; course accessories; environmental products; golf course construction; hire equipment; irrigation; maintenance vehicles; mowers; safety and other work clothing; sands and quarried products; and seed, turf and soils.

Once the category is selected, a separate sub-menu will appear. For example, under chemicals there are the sub-headings fertilisers, herbicides, fungicides, insecticides.

Click on the particular item you are looking for and the details of those companies who stock that item will appear. The information includes phone and fax details, addresses and, where applicable, email details and website addresses. Also, a description of products stocked will appear along with images.

The directory is meant to be a work in progress and over time new products and companies will be added. For those companies who wish to have their details included in the trade directory, please contact Scott Petersen at the AGCSA on (03) 9548 8600 or scott@agcsa.com.au

THE AGCSA: WORKING FOR YOU

The AGCSA is committed to providing greater resources to enhance its leadership, unification and professional development of the Australian turfgrass industry and its members.

Membership of the AGCSA enables golf course superintendents as a collective unit to have their say on matters such as education, turf research, legislation and industry development.

During 2004, the AGCSA undertook a major redesign of its website for the use of all members of the turf industry. The AGCSA believes that this medium is becoming a vital communication tool for the industry and something which members need to become familiar with.

The new-look website features a special 'Members Only' section, where special offers available only to AGCSA members will appear. Members will also be able to update their contact details in this area.

In July 2004, the AGCSA and Toro Australia signed a unique agreement to help foster the next generation of superintendents and turf managers.

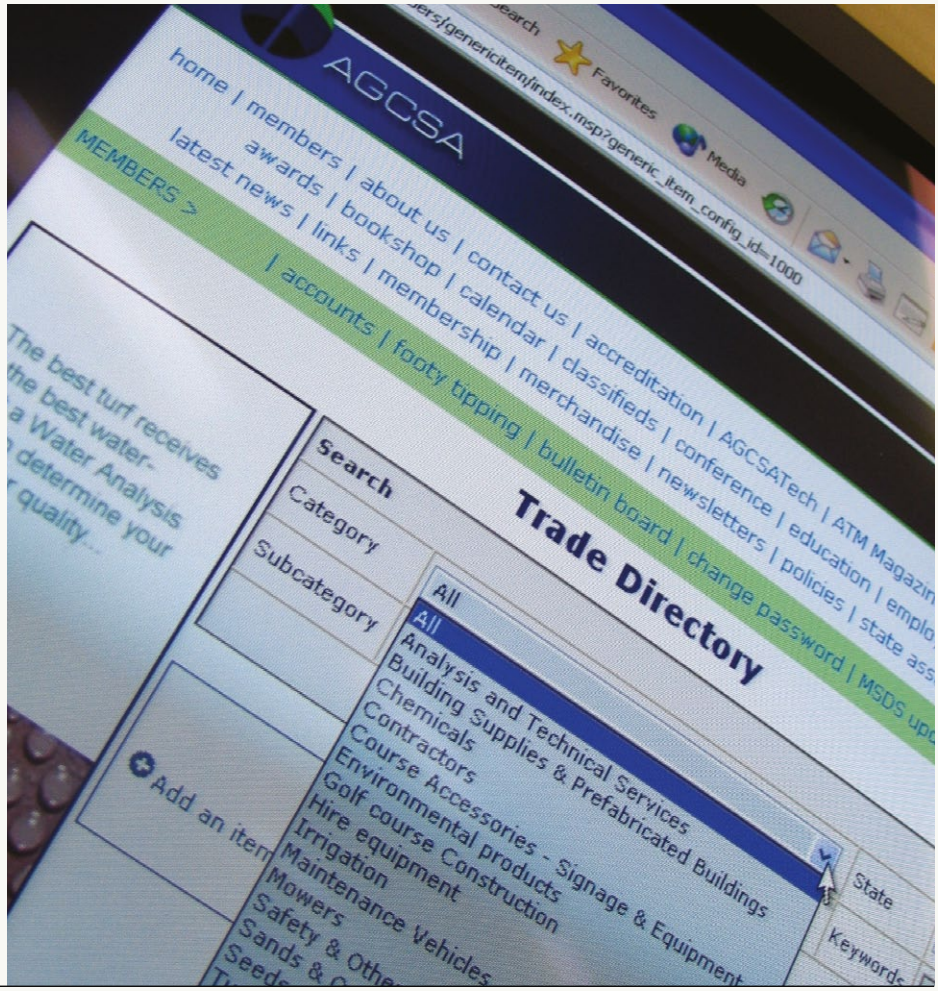
Toro has put its name to the Next Generation membership program which will provide numerous incentives for student members of the AGCSA.

As it stands, the price of an AGCSA student membership is $77 per annum. However, under the Next Generation membership scheme, existing and newtion membership scheme, existing and new student me student members of the association will only pay half that amount ($38.50), with Toro footing the balance.

The program is expected to develop a national turf management career day, access to overseas exchange programs, tournaments and regular educational tours.

Other membership benefits include:

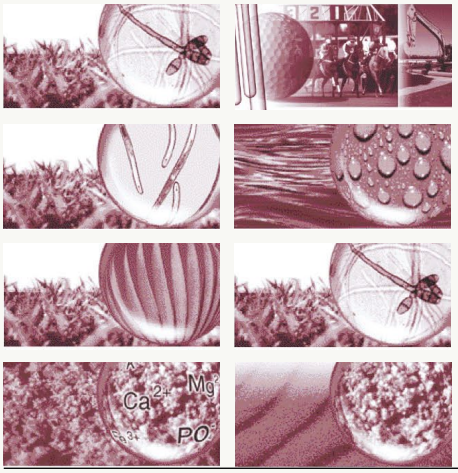
- Six editions of the bi-monthly AGCSA journal Australian Turfgrass Management magazine, the No.1 turf industry publication;
- AGCSA year planner and turf diary (new in 2005)
- AGCSA members gift;
- Access to the AGCSA 'Members Only' and Online Auction sections of the AGCSA website;
- Regular AGCSA newsletter and Turf News email newsletter;



- Reduced registration fees to the AGCSA conferences and roving workshops;
- Member discounts on soil and water testing, disease diagnosis and other analytical services through AGCSATech;
- Discounted books from the extensive AGCSA bookshop;
- Discounted AGCSA merchandise;
- Free legal service provided by Madgwicks Solicitors providing up to half an hour free legal advice on any subject;
- Regular mail-outs of positions vacant within the industry. Job Watch email alert service;
- Access to AGCSA Contracts of Employment;
- Regular opportunities to meet with your peers and the allied turf trades;
- Access to AGCSA Skills Recognition Program, Accreditation Program and AGCSA endorsed qualifications;
- Opportunity to be involved in the Australian Open Course Quality Officials program; and
- Clearmake Industries offers AGCSA members a 10 per cent discount on all products and services company-wide. Products available include oil water separators, water recycling plants, gross pollutant traps, rope mop oil skimmers and diversion and spill control valves.

If you have any questions or queries about becoming an AGCSA member or about any of the above listed membership benefits, please do not hesitate to contact Paula Dolan, membership services and administration co-ordinator, on (03) 9548 8600 or email info@agcsa.com.au.

You too can discover how the AGCSA can assist and make a difference in your future endeavours within the turf industry.



AGCSA
Membership Application Form

Secure your career in the turf industry...

• enhance your job security • promote your professionalism • receive peer support and free legal advice • gain access to a range of educational opportunities and AGCSA publications

Membership Application Form

Surname: ..... **First Name:** .....

Preferred Mailing Address: .....

City/Suburb: ..... **Postcode:** .....

Position: .....

Club/Organisation: .....

Club Postal Address: .....

City/Suburb: ..... **Postcode:** .....

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Mobile: ..... **Fax:** .....

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Member Class: .....

MEMBERSHIP PAYMENT

Membership payments for any of the above classes are to be sent to the AGCSA.

❑ **Please charge this purchase to my credit card account**

❑ **Bankcard** ❑ **MasterCard** ❑ **Visa**

Card Number: ..... **Expiry Date:** ___/___

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AGCSA MEMBERSHIP CLASSES

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Company	$277
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SA - South Australian Golf Course Superintendents Association	$65
TAS - Tasmania Golf Course Superintendents Association	$120
WA - Golf Course Superintendents Association of Western Australia	Please call 08 9455 5195
VIC - Victorian Golf Course Superintendents Association	Please call 5975 6826

The Next Generation (Student Membership)

Golf and Non Golf	$38.50

Discount Sliding Scale for joining of two or more staff	5% discount = 2-3 staff 10% discount = 4-6 staff 15% discount = 7+ staff

Send completed application form and payment to:

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752 Blackburn Rd, Clayton North, 3168, Vic
Phone: 03 9548 8600 Fax: 03 9548 8622
Email: info@agcsa.com.au

TURF INDUSTRY BOOKSHOP

GENERAL

A Field Guide to Australian Frogs **$56.90**
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Practical Golf Course Maintenance –Magic of Greenkeeping **$173.99**
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The Golf Course -Planning, Design, Const and Management-HB only **$366.61**
The Good Doctor Returns Alistair Mac comes back to golf **$71.18**
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The Links **$189.75**
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The Sandbelt **$143.75**
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Turf Management for Golf Courses **$363.74**
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Growing Media for Ornamental Plants and Turf **$94.88**

TURF & WEEDS

Australian Weed Control Handbook - 10th Edition **$110.74**
Biological Control of Weeds **$142.36**
Bowling Greens:The History Construction & Maintenance **$145.24**
Color Atlas of Turfgrass Diseases **$261.63**
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Cricket Wickets – Science vs Fiction **$115.00**
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Destructive Turfgrass Insect - Biology, Diagnosis & Control **$258.75**
Diseases of Turfgrass **$345.00**
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Noxious Weeds of Australia –Revised Edition **$280.36**
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Picture Perfect, Mowing Tech for lawn, sports & Turf **$118.67**
Salt-Affected Turfgrass Sites - Assessment & Management **$221.38**
Sands for Sports Turf Construction & Maintenance **$79.11**
Seashore Paspalum – The Environmental Turfgrass **$213.54**
Sports Fields –Manual design, Construction & Maintenance **$253.00**
Sportsturf Protection Manual -
The Complete Guide Guide to all Turf Protection Products **$253.00**
Sports Turf & Amenity Grasses -A manual for use & Identification **$122.24**
Sports Turf - Science, Construction & Maintenance **$316.25**
The Turfgrass Disease Handbook **$173.99**
Tree, Turf, Ornamental Pesticide Guide **$115.00**
Turf Irrigation Manual **$179.74**
Turf Weeds and Their Control (HB) **$313.38**
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Evaluating Turfgrass Sprinkler Irrigation Systems (leaflet) **$11.50**
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Simplified Irrigation Design 2nd Edition **$196.29**
Turfgrass Irrigation scheduling (leaflet) **$8.63**
Water in Australia: Resources & Management **$107.86**

AGCSA have an extensive range of books available ie general 'Golf Titles, Soil & Composting, Turf and Weeds, and Water & Irrigation' that can ordered through the AGCSA'S website, and also through an order form in the AGCSA's Australian Turfgrass Magazine.

Here are a few books that are currently on top of the list of favourites for 2004/2005:

Turfgrass Management 7th Edition by A J Turgeon
Compendium of Turfgrass Diseases by Doernoeden Smiley
Seashore Paspalum: The Environmental Turfgrass by R R Duncan
Turfgrass Science Management - 3rd Edition by R Emmons
Colour Atlas of Turfgrass Diseases by T Tani & J Beard
The Sandbelt by Paul Daley
Golf Course Architecture - Design, Construction & Restoration by Michael Hurzdan
Not forgetting **'The Sportsturf Protection Manual' – The Complete Guide to all Turf Protection Products** by John Neylan – AGCSATech - 2005 Update Included

Please note: All prices include GST and are subject to change without notice.
Postage: $9.90 for first book and $1.10 for every book after.

Sportsturf Protection Manual –

The Complete Guide to all Turf Protection Products (2005 Update)

By John Neylan, Peter Anderson and Euan Laird (2005 Update: Andrew Peart and Fiona McPadden)
AGCSA

Ever since its release in 2002, the Sportsturf Protection Manual has proven to be an essential reference tool for Australian superintendents and turf managers.

A complete guide to all turf protection products, the manual was developed by the AGCSA to provide turf managers with the most comprehensive data available on currently registered turf pesticide products to enable assistance in the selection of appropriate pesticides.

In 2005, the AGCSA has released an update to be used in conjunction with the 2002 edition. The update, compiled by AGCSATech technical officer Andrew Peart along with the help of Fiona McPadden, provides users with a complete listing of all the new pesticides registered for turf use since the 2002 edition and any changes that have occurred to products.

The 2005 update contains a summary of changes (by pesticide group), constituent listing, pest listing, product listing and a detailed product report. The format and design of the update is the same as the 2002 edition, which allows the new pages to be slotted into their respective sections on top of the existing pages.

A two-page summary of the changes has been included at the start of each pesticide group for easy reference. The summary pages are divided into two areas – a new products table, and a table outlining changes to existing products.

The new products table provides a summary of the trade name, manufacturer and respective pesticide group of these products. All of these were not registered for turf use at the time of the 2002 edition.

For example, under herbicides, new products listed in the 2005 update include Chipco Spearhead, Destiny, Finale, Monument, Nufarm Amicide 625, Nuturf Millennium, Nuturf Razor and Stomp Xtra.

The changes to existing products tables outline changes made to existing products that were included in the 2002 edition. The first half of the table displays how the product was listed in the 2002 edition. The second part goes on to display how the product is listed in 2005 and the reason for the change, whether it be a change in poison schedule, change of manufacturer, or change in trade name.

For example, under fungicides, Helmet has had a change of poison schedule, while Bayfidan Turf has had a change in trade name (now Chipco Bayfidan) and manufacturer (now Bayer).

For those who purchased a 2002 manual, the 2005 update has been mailed out, while those wishing to purchase a manual from February 2005 onwards, the update will be included. To purchase the Sportsturf Protection Manual, contact the AGCSA or visit the AGCSA bookshop online at www.agcsa.com.au.

ORDER FORM - ORDERS CAN ALSO BE MADE SECURELY ONLINE THROUGH www.agcsa.com.au

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GCSAQ

As we head into autumn, I sit and reflect back over the past month and marvel at the superb efforts Darren Moore (Lakelands Golf Club), Ben Marshall (Club Pelican) and Stuart Laing (Royal Pines) and their staff have put in preparing their courses for recent tournaments.

This is a difficult time of the year and once again these superintendents have showcased our industry. For Stuart, this task was made all the more difficult due to the senseless act of someone spraying his greens, but like the true professional he is he came through with flying colours.

February has seen record low rainfalls with most areas receiving around 20mm compared to the average for this month being 250mm. Just when things seem to be getting back to a normal pattern, you wonder how long this dry spell will go on for.

Meanwhile, in the Far North the impact of Cyclone Ingrid is still being felt after it cut a path through the top of the state. If a normal storm brings down trees and branches on your course, imagine what would happen when you get 200km winds tearing through your place.

With the arrival of some slightly cooler weather and the dry conditions, there seems to be a bit of a slow down in the growth rate out on the golf course, after a season that was ideal for growing grass. So much so that many courses would be glad to give the rough mowers a rest as they have been going constantly since November.

With decent rains through summer the prospects for a year without the water restrictions of last year was looking good, but with very dry conditions through February things are now looking grim for many clubs.

On a brighter note, the Gainsborough Greens field day was a great success with superintendents and greenkeepers attending from as far away as Gympie to the north and Byron Bay to the south.

On arrival at the course, we were greeted with a magnificent BBQ breakfast ably manned by Ben Chapman and Steve Moncreiff from Water Equipment Technology who gave a brief run down of their company. We then headed out on the course, which was presented in fine condition by host superintendent Justin Kelly and his staff.

After an enjoyable nine holes around this famous layout, it was down to the practice tee for an impressive display by Chris Paterson and Bob McKinnon of Hinterland Mowers who had a huge line up of machinery ready and waiting to be taken out for a demo on the practice range. Chris also introduced a range of other powered tools, hedgers and generators that had plenty of potential on the golf course or for home including some of the new Honda motor range.

Following lunch, AGCSATech's John Neylan gave us the inside information on the disease cycle we should expect at this time of year and some of the options for treatment and strategies being used worldwide to reduce the impact of turf disease.

This very worthwhile session turned into an energetic and at times heated discussion on the various techniques and products used by different clubs in their programs and how effective some of these could be. Once again, it would be interesting to see someone write a book on the turf industry and some of the characters in it.

The March field day took us to Royal Pines to play the new nine holes designed by Graham Marsh. This course was very well presented by Stuart Laing and his team and it was great to see so many new faces among the attendees.

Sponsors for the day were Globe Australia and all members had a thoroughly enjoyable day. Wayne Sear from Barmac informed us on new products, Paul Jackson (Bayer) discussed spraying, while David Westall of Scotts Australia gave an enlightening talk on nematodes. Hoshi Hisayuki from Japan and Ian Mack from Adams Australia talked about the sumo soaker hoses, before Stuart gave a rundown on the design concept of the new nine holes.

The day saw the introduction of the Jester Hat and the inaugural winner was AGCSA president Jeff Gambin (just a reminder Jeff you still owe a round of drinks for ending up with the hat!). It also saw Jeff win his first legitimate golfing trophy with a nearest the pin! When you get a spare 30 minutes, ask him how he did it!

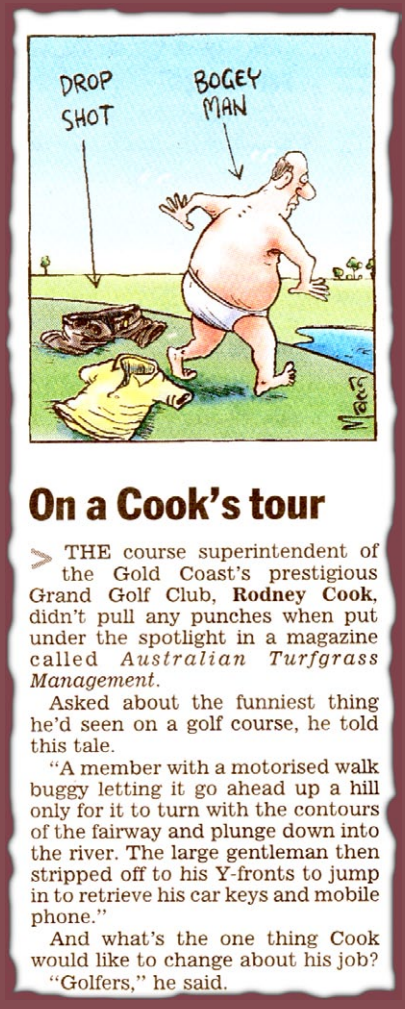
The GCSAQ met with the Queensland Golf Union (QGU) at the last committee meeting and was brought up to date on the planned amalgamation of the men's and ladies golfing bodies.

It was also noted the QGU was happy to involve the GCSAQ on relative committees under the new structure. Other issues affecting golf, such as handicapping, player numbers, liability, as well as golf course issues like noise, dust and the environment were also discussed. Thanks to Brian Oberman for attending and bringing us up to date.

Upcoming events include the 11 April field day at Lakelands Golf Club, sponsored by Northern Rivers and Simplot. The day will have an environmental theme. The John Deere Team Challenge will be on 10 May.

As well, throughout April and May the AGCSA's simulated spill exercise will be held. Make sure you get along to the venue closest to you as this is a must for all superintendents.

And finally, it has taken a Queensland superintendent to hit the headlines in Melbourne's Herald Sun! What are you blokes doing down there!? ***(They were going to use your lovely mugshot Cookie, but in the name of taste and decency, I refused their request – Ed)***



Rod Cook's one second of fame

ROD COOK
PRESIDENT, GCSAQ.

GCSAWA

Well before you know it another fabulous issue of ATM ***(Cheque's in the post, Brad – Ed)*** is sitting pride of place abreast the huge stack of manuals, reports and other bits and pieces which normally inhabit my rather unimpressive office table at this busy time of year.

This means the next issue is being created and I made a promise to 'Ed' to be on time with this report so he could have a holiday! I am proud to say I just made it so I hope you readers at least make it halfway through before nodding off.

Western Australia has again surprised us all with kind summer weather, not much rain but some mild temperatures which have helped, especially since I have been without a fully operational pump station for the last three odd months. Whinge, whinge, whinge.

Recently you may have received a survey from the WA Primary Industries Training Council (WAIPTC) seeking your preference towards two different training schemes for Certificate III Horticultural Studies and most importantly Certificate III Turf Management.

Midway through 2004, the WA Government and the WAIPTC began looking at streamlining training in this area into one scheme, i.e. traineeships (two-year term) or traditional apprenticeships. With help from Steve Dargie from Challenger TAFE, who has been filling the role as an industry representative to the WAPITC, the views of industry including the GCSAWA are now being clearly thrust forward. I have included an extract of a letter I sent to the WAIPTC along with my survey.

"The GCSAWA and its members are firmly committed to the continuation of the traditional Trade Certificate studies in Certificate III Turf Management for the following reasons:

- It is industry view that the required technical content of Certificate III Turf Management is and will be, better gained by students over three years, with a further year onsite, and not rushed through in two.
- Shorter non-traditional training schemes for Certificate III Turf may result in poor quality graduates entering an industry founded and developed by traditional tradespeople.
- The termination of this stream of training in WA will significantly undermine the standardisation of Certificate III Apprenticeship Turf Management training nationally.
- Greater workplace and training security for the apprentice and employer in a traditional apprenticeship served over four years.
- An employer can begin to gain a return from their investment in their apprentice in the latter stages of their training when they are actually on the job fulltime as skilled tradesperson.

I hope you all find time to have your say through the survey and secure the future of the traditional apprenticeship scheme which has served our industry so well over the last two decades. Along with Steve, the GCSAWA will continue to work towards this goal and will keep you informed as information comes to hand.

On 15 February, the 2005 Golf Masters Cup Series kicked off at the superb Wembley Golf Complex. It would be fair to say that the changes made to that course since the employment of superintendent Darren Wilson and facility manager Matt Day has been impressive. I am sure Darren is looking forward to the completion of the 36-hole irrigation upgrade.

Rising to the occasion and taking out the first round winner's trophy was, ironically, Matt Day with 24 points, with Craig New second on 22.

Hopefully by now each superintendent has received their Hazardous Substance Induction and Training Manual and are busy working through them. I get the piss taken by a few people about "all these safety documents", but hey, it is required by law in most cases, may just prevent injury/illness which equals days off work, and the safety of ourselves, staff and patrons is a good cause.

'POP' SOFIELD,
PRESIDENT, GCSAWA.

NZGCSA

Greetings from across the Tasman where Super 12 rugby is well under way, which makes a pleasant change results-wise from the international cricket! Roll on the Tri Nations.

What's happening in the NZ turf industry? Well, we are counting down to the New Zealand Sports Turf Conference on 31 May. The program is set and looks to have something for everyone, from water management to staff management and developments in course design from pro golfer Greg Turner's perspective. For more information and online registration, visit www.nzturfconference.org.nz.

While major professional tournaments are held frequently in Australia, New Zealand has only recently had the status of its professional tournaments upgraded.

During February, the New Zealand Open was held at Gulf Harbour Country Club just north of Auckland. This was upgraded to a European co-sanctioned event for the first time. As was the NZPGA Championship held at the Clearwater Country Club just out of Christchurch, which is now a Nationwide Tour co-sanctioned event.

Both these have served to bring better quality events to New Zealand and showcase our country and the excellent work of our superintendents. Both NZ Golf and PGA need to be congratulated for the initiative shown to attract these events.

Both superintendents – Morgan Henton (Gulf Harbour) and Tony French (Clearwater) – are to be congratulated for the presentation of their respective courses. Nothing was left to chance, and the presentation and professionalism displayed has gone a long way to exemplify what we should be achieving in New Zealand.

While the winning scores were low, both tournaments went to play offs. Low scoring attracts more people to watch the game. The public wants to watch the pros making birdies and not struggling to make a score – they see that type of golf every day. This doesn't mean we have to make our courses too easy; a happy medium must be found.

Training days are being held around the country at regular intervals. Common topics at the moment are irrigation, summer diseases, summer weeds.

During the conference, we will be holding our AGM at Terrace Downs. Already, one executive member has indicated he won't be standing again. Therefore we are looking for at least one new executive member, so to all supers in New Zealand, give it some thought and let's have a couple of nominations.

BRETT BURGESS,
PRESIDENT, NZGCSA.

SAGCSA

In what seems a blink of the eye, we are a quarter of the way through 2005. Then comes the inevitable phone call from that ATM editor with the funny accent! ***(Steady on Freddie – Ed)*** "We need your nixt article for the magazine." It only seems like yesterday that I wrote the last one!

With a cooler than average summer behind us, all turf managers will no doubt be in renovation mode during autumn. Those who attended the first SAGCSA meeting at Glenelg Golf Club on 10 February will have benefited from the information on offer.

Topic for the day was pre-winter conditioning of turfgrass. Keynote speaker was AGCSATech's Andrew Peart with other speakers including Neil Crafter, Darren Ferber, Phil Toy and, last but not least, AGCSA chief executive Steven Potts.

Steven covered information coming from AGCSA, which was greatly appreciated by members. This, I hope, will be at least an annual visit from Steven to SAGCSA meetings.

While in review mode, the recent Jacobs Creek Open held at Royal Adelaide Golf Club was a great success; the weather was kind, the golf of a high standard and the course looked in terrific shape.

Credit must go to superintendent Jeff Kaines and his dedicated staff for presenting RA in such good nick! As if the Open wasn't enough on the plate at this time of year, no sooner had the tour moved out than the dozers were in on the 11th green doing reconstruction work!

The next SAGCSA meeting will be at Thaxted Park Golf Club on 12 April, while the AGCSA roving workshops will be at Murray Bridge Golf Club (19 April) and Blackwood Golf Club (21 April).

The roving workshops will cover chemical spill response on golf courses, a very topical subject in light of recent events. I urge all superintendents to bring along their club managers and relevant committee members so as to receive the full picture on the club's response of duty of care in relation to chemical hazards on the course.

Finally, the SAGCSA AGM will be held in May at Kooyonga Golf Club.

PETER HARFIELD,
PRESIDENT, SAGCSA.

TGAA NSW

While 2005 is moving along quickly and we are preparing for our winter sports season, TGAA NSW is planning on a very busy and hopefully another successful year. I would like to thank members and sponsors for another great year of support in 2004, and remind everyone that we encourage member involvement, ideas and suggestions.

The committee is currently finalising plans for two seminars this year. The first is targeted at our Central/North Coast members and will be held at Wyong Racecourse on 4 May. Our Sydney Seminar will be held at the Sydney Showground's on 16 August.

While it has been a good growing season in Sydney with light rainfall to tie us over, we all know the importance of going slow on water usage.

Good luck to all turf managers for the upcoming winter footy season.

GRAEME LOGAN,
PRESIDENT, TGAA NSW.

TGAA ACT

Turf managers throughout the district have benefited from good rainfall during the past months which gave some relief to parched soils. These benefits also carried through to many turfies in the area who took the opportunity to carry out renovations on more intensively used areas.

Recent news to effect local turfies has been the lifting of Stage 3 water restrictions. The current Stage 2 restrictions in place have eased some of the pressure placed on many turf managers to reduce water usage. Although many have welcomed this, we are all aware that this will not be a permanent situation unless there are significant falls.

An excellent way to gain access to the latest information on renovation equipment, products and techniques is the Internet.

If you are interested but having difficulty in locating particular information, the TGAA ACT has put together a database of turf related websites. To receive a copy, please contact the association.

Well, it's getting close to that time of year again when we hold the much-anticipated mid-year seminar. Topics to be covered encompass issues relating to OH&S in and around the work site. OH&S are large, complicated, ever-changing and quite often an area which is misinterpreted, misunderstood and subject to speculation. For more details, please contact Gary Dawson on (02) 6207 4624.

JUSTIN A K HASLAM,
COMMITTEE, TGAA ACT AND SURROUNDING REGION.

TGAA WA

The first TGAA WA event for 2005 was the President's Breakfast held at the WACA in February. It was a very successful morning attended by 50 members.

This event provides an opportunity to give members an overview of the association's activities and future direction. The association has grown to 150 members, an increase of 50 per cent in two years.

The committee has been working on a new constitution to reflect the changes in structure and operation of the association. It was presented to members at the breakfast and some issues were raised that will be addressed. We intend to present it again to members at the AGM in July.

On 24 March, the TGAA WA Irrigation Seminar was held at Burswood on Swan. Topics included preparing a water budget, irrigation benchmarking for local government, water conservation plans, and using recycled water in turf.

This year's TAFE awards dinner will be held on 12 April. This is a popular event that recognises the achievements of graduating turf apprentices and students.

The University of Western Australia's kikuyu trial has been established and will be a three-year study into the management of kikuyu in the Perth region. The findings will be very important to our members and the association is sponsoring the trial.

There will be an open day at the UWA's Shenton Park field site on 19 May to inspect the trial work. ***(See page 36 of this edition of ATM where Dr Louise Barton outlines this new research project – Ed)***

PETER RUSCOE,
PRESIDENT, TGAA (WA).

TGAA VIC

Finally, we have been advised that a fairer system for using water for sportsturf has been announced, with a lot of hard working being put in by Bill Turner on behalf of TGAA VIC members.

The State Government has now introduced a series of permanent water conservation measures aimed at saving water within the whole community, while still allowing for the sensible watering of important community facilities such as sports grounds, golf courses and the like.

Members are encouraged to understand the new government measures and how they affect our industry operation within the community. While our community wants to conserve water, they also demand that we produce suitable and safe turf surfaces for them.

TGAA VIC firmly supports these State Government initiatives aimed at sharing the load of water conservation.

The association is busily preparing for the joint TGAA and School Bursar's Day which this year will be held at Eltham College on Thursday, 19 May.

Members are encouraged to attend this day, which will feature discussions on risk assessment and job safety analysis when working with asbestos, heights and chemicals. There will also be presentations on playground design, safety and maintenance. Further details will soon be available.

Other dates that members may care to pencil in are the Cricket Wicket Seminar which will be at Telstra Dome on Wednesday, 13 July, and the Sports Celebrity Luncheon on 3 August.

Members will notice a slight change in dates for the cricket wicket seminar. This is to accommodate a more suitable date for the celebrity luncheon.

I look forward to catching up with as many members as possible at our upcoming seminars and meetings.

JIM MARCHBANK,
VICE-PRESIDENT, TGAA VIC.

VGCSA

As my period as VGCSA president winds down, I would like to highlight the benefits that come from being involved on a state or national committee.

Without a doubt the most startling thing that occurs very quickly is the amount of people you meet who are in the same boat dealing with the same issues the job presents.

Many of these like-minded folk become an integral part of an industry network and if you're lucky some of those become close friends. These relationships I value greatly.

The other area that has great rewards is being involved in where the industry is heading, by having input with education outlets, state golfing associations and the AGCSA.

All of these groups contribute to important areas as diverse as water conservation, sustainable grass types and OH&S issues to name but a few.

So if you have an interest and you want to have a say, join your state body or consider putting forward a nomination for the AGCSA board when the time is appropriate. I can highly recommend it.

The first VGCSA meeting for 2005 was held at Keysborough Golf Club in February hosted by superintendent Brett Chivers. Brett, who originally started his apprenticeship at Keysborough, was appointed superintendent there in 2003 after a long period of training at Yarra Yarra Golf Club.

Keysborough Golf Club

The day's format continued with the popular theme of having highly credentialed superintendents expanding on their experiences in major projects they have undertaken at their respective clubs.

We were fortunate to have Mark Parker from Concord Golf Club come down from Sydney to enlighten us on his US travels and the works he has carried out at Concord.

This was followed by a panel discussion consisting of Brett Chivers, John Geary (St Andrews Beach), Michael Riordan (Patterson River Country Club) and Mark Parker.

They were all very candid with their presentations and each had an interesting angle on the difficulties their respective projects presented. Special thanks go to Mark for finding the time to add significantly to the day. After lunch most of the 70 members proceeded out for golf or went on a course inspection with Brett.

In other events, 60 turned up to Riversdale Golf Club for the managers-superintendents challenge sponsored by Clubcar and Scanoz. Unfortunately, the managers scored yet another narrow win.

The AGM this year will be at Peninsula Country Club, which has been kind enough to accept the VGCSA's request. Host superintendent Steve Hughes has taken on many changes there in recent times, which will no doubt create a great deal of interest.

Guest speaker will be Neil Crafter, who needs little introduction, together with his partner Paul Mogford who is also the editor of the Golf Architecture magazine. See you there.

MICHAEL PICKEN,
PRESIDENT, VGCSA.

LOWARA

"At Kingston Heath the pump house has a flooded suction so it was decided to use end suction pumps because of their long term reliability and ease of maintenance. By fitting Lowara Hydrovar variable speed controllers to the pumps I am also assured of energy efficient operation and reliable on course water pressure. With the pump set now a couple of seasons old the system has been 100% reliable and extremely straightforward to use."

Martin Greenwood,
Golf Course Superintendent
Kingston Heath Golf Club

How the Hydrovar reduces energy consumption.

Most applications involve the pump operating either along its full speed performance curve or the pumps performance is throttled or regulated by a valve. The Hydrovar eliminates these operating methods by regulating pump speed and hence output to match the system demand. This saves wasted energy traditionally lost in these conventional pump systems. Energy savings of up to 70% can be realized. (figure 1)

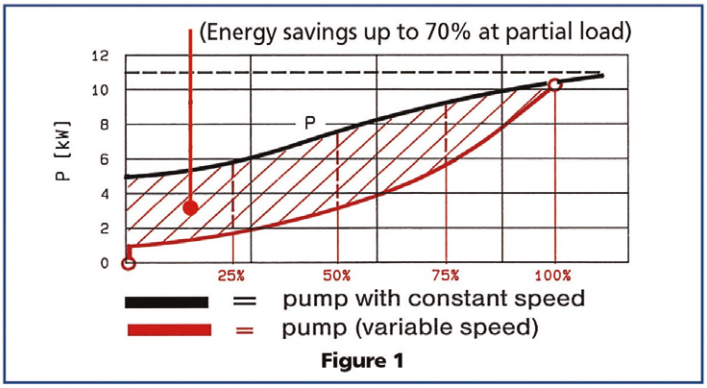


Figure 1

What is a Hydrovar?

Hydrovar has gained a reputation as the pump mounted, microprocessor pumping system controller. But it does much more than just change motor speed.

It actually manages the performance of the pump to match a wide range of system conditions and requirements.

Hydrovar is fully programmable on site as it incorporates the microprocessor and the variable speed drive in one compact and unique package.

How the Hydrovar reduces maintenance cost.

Hydrovar software is designed specifically for centrifugal pump operation, control and protection. Hydrovar can thus be setup to protect the pump from operating under various unfavourable conditions eg. cavitation, operating against closed head, low NPSHa or operation past a pumps maximum flow rate. Hydrovar will automatically shut down and alarm if adverse conditions occur.

Hydrovar provides the Golf Course Superintendent with the flexibility of watering required with substantial savings on installation, power usage and maintenance. For details about the experience of some of Australia and New Zealands most prestigious Golf Clubs who have installed Hydrovar pumping systems, contact the Lowara distributors nearest you.

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