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MANAGEMENT

2004 CENTENARY AUSTRALIAN OPEN

A Pictorial Review

AROUND THE TRAPS

NSW Projects Update

RESEARCH

- Integrated Pest Management
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EXTREME MAKEOVERS

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Cover: From bombsite to Test venue all in the space of a month. Main photo taken at MCG during the West Indies-Victoria one-day match, 5 January, 2005. Inset photos show the MCG in varying stages of reconstruction in late 2004 – (from left) 25 November, 11 December, 16 December, and 26 December.

Photo: Brett Robinson

Insets: Courtesy of HG Turf

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At first glance, you would take Paul Cogan to be your typical turf mechanic. But there's more to this man than meets the eye, and after reading this article you will see why his winning of the 2004 NSW TETA mechanic of the year award takes on special significance.

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In a continuing look at various golf course projects around Australia, ATM heads north of the border into NSW to profile work at such courses as Castle Hill, Avondale, New South Wales, Muirfield and St Michaels.



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Research

Evaluation of Reduced Chemical Management Systems for Putting Greens

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IPM has become a major issue in golf course management in recent years. Here, US researchers Drs. Frank Rossi and Jennifer Grant have investigated the use of integrated pest management (IPM) and non-chemical management systems compared to conventional chemical pest control on putting greens. IPM resulted in fewer pesticide applications than conventional chemical pest control and similar putting green quality for most of the study period.

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Makeovers all round

Welcome to the first official edition of Australian Turfgrass Management magazine for 2005. I'm sure many of you, like me, have made a number of New Years resolutions, yet despite best intentions have let some inadvertently fall by the wayside.

However, one resolution the team here at ATM hasn't let slip is its desire to produce an innovative and cutting-edge publication worthy of a vibrant turfgrass management industry which is experiencing a constant climate of change.

To help facilitate that, the start of 2005 has heralded a number of changes in the production of ATM. You will notice as you flick through the magazine a number of subtle design changes have been implemented to give it a more modern feel.

Driving these changes is new art director Jo Corne who has come on board and has a number of interesting ideas which will be implemented over the course of future editions.

At this time, I would like to thank Publicity Press for their involvement in the production of the magazine since its inception, in particular to Andy Cumming who has become an honorary member of the turf industry.

It is rather fitting then that in this new-look first edition for 2005 our cover story should be on another entity that has undergone something of an extreme makeover in recent times.

During the latter half of 2004, the Australian public, the media and no doubt the entire turf management industry was transfixed upon the history-making works to the Melbourne Cricket Ground surface.

As part of a \$430 million redevelopment project to transform the venue into the primary stage for the 2006 Commonwealth Games, the surface has received its biggest facelift in 150 years, eclipsing even the major works conducted back in 1992.

The magnitude of works is quite remarkable and in our cover story, HG Turf managing director Hamish Sutherland and McMahon's business manager Rod Binedell give a unique and in-depth insight into the processes and challenges faced, and the race against time to have the surface ready for the Boxing Day Test.

The works herald a change in the way MCC arenas manager Tony Ware will care for the surface with shade management now an integral component. ATM wishes Tony and his crew all the best for the upcoming football season as well as with future works as the countdown to the Games continues.

Elsewhere in Volume 7.1, John Neylan looks back on 2004 at some of the events and issues to emerge, while we continue our trip around the country by visiting New South Wales to highlight the many golf course projects on the go. Research touches on integrated pest management and nematodes, while the feature on Avondale Golf Club turf mechanic Paul Cogan will no doubt make a few jaws drop.



Enjoy the new-look magazine and all the best for the transition from summer to autumn. See you around the traps.

Brett Robinson

Brett Robinson
Editor

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Brett Burgess (Taupo Golf Club, NZ)
Paul Cogan (Avondale Golf Club)
Rod Cook (The Grand Golf Club)
Gary Dempsey (NSW Golf Club)
Craig Easton (Carnarvon Golf Club)
Matthew Fitzgerald (Ringwood Golf Club)
Dr Jennifer Grant (New York IPM Program)
Billy Hamshire (VGA)

Peter Harfield (Blackwood Golf Club)
Justin Haslam (TGAA ACT)
Darren Jones (St Michaels Golf Club)
Graeme Logan (TGAA NSW)
Jim Marchbank (TGAA Vic)
John Neylan (AGCSATech)
Andrew Peart (AGCSATech)
Scott Petersen (AGCSA)
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Dr Frank Rossi (Cornell University)
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David Scaife (Bonnie Doon Golf Club)
Brad Sofield (Gosnells Golf Club)
Peter Stewart (St Andrews, Scotland)
Hamish Sutherland (HG Turf)
David Warwick (Avondale Golf Club)
Mark Warwick (Muirfield Golf Club)



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foreword thinking

Welcome to the first edition of Australian Turfgrass Management magazine for 2005.

Australian Turfgrass Management magazine is entering its seventh year and we have taken the big step of bringing the production of the magazine in-house. We hope that this will improve the efficiencies of the magazine while allowing us to continue to grow and provide our readers with relevant and cutting edge information.

I would like to welcome Jo Corne to the team as Art Director. Jo brings a wealth of experience to the role and I am sure you will agree the subtle changes made to this edition demonstrate ATM's position as the leading turfgrass publication in Australia.

In the lead-up to Christmas, Australian golf was once again displayed to the world in a truly professional manner. I would like to congratulate superintendents Rob Ashes (The Australian Golf Club, Centenary Australian Open), Bob Schmidt (Hyatt Cooloom Resort, PGA Championships) and Michael Freeman (Huntingdale Golf Club, Masters) and their respective teams for the way they presented themselves, their golf courses and our industry.

The first AGCSA simulated spill exercise was held at the Newcastle Golf Club in early December and was attended by 45 enthusiastic members of the industry. The exercise was based on a chemical spill that made its way toward a local water body on the golf course. This then

activated the Newcastle Golf Club's spill response procedure and deployment of spill containment and management equipment, recovery of spill material and the disposal of waste material. Congratulations to superintendent Guy Thomas and his team who excelled in their handling of the exercise and received a glowing report from all who attended.

I would also like to congratulate Brett Lee, Bulbeck EnviroSolutions, and Terry Muir, Environmental Business Solutions, for their efforts in the lead-up to and the conducting of this exercise. The AGCSA in conjunction with the Australian Golf Union, Bulbeck EnviroSolutions and Environmental Business Solutions is planning to conduct similar exercises throughout Australia during March 2005. Stay tuned to the AGCSA website for further details on dates and venues.

The 2005 turf manager's diary has now been distributed to all AGCSA and state association superintendents, turf managers and assistant superintendent members free of charge. The diary will be a daily recording system to assist in the management of the day-to-day operations as well as legislative requirements.

If you are not a member of any of the golf course superintendent associations you can purchase a copy of the diary for \$75 plus GST through the AGCSA bookshop.

Preparations for the 21st Australian Turfgrass Conference in Moama continue to progress well. With strong support from the



AGCSA chief executive, Steven Potts

trade and a quality line up of speakers, the 2005 conference will be the key event.

I am delighted to announce that keynote speakers confirmed for the education sessions include Dr Don Loch (Redlands Park Turf Research Group), Dr Louise Barton (University of Western Australia), Terry Muir (EBS), Jon Griffen (APL Financial) and Professor Ken Marcum (Arizona State University) who will talk on issues of salinity.

The registration brochure is currently being finalised and will be distributed in the coming weeks. I encourage everyone to attend what is set to be a fantastic week with some great social events planned for after hours.

On behalf of everyone at the AGCSA I would like to wish all readers a happy and prosperous 2005 and we look forward to continuing servicing this fine industry.

Enjoy the magazine.

Steven Potts
Chief executive officer, AGCSA



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MCG'S EXTREME MAKEOVER

The People's Ground Enters a New Era



The MCG surface a fortnight out from the Boxing Day Test

Stage one down, three to go. In the latter half of 2004, the MCG surface underwent an extreme makeover in preparation to host the 2006 Commonwealth Games. HG Turf's Hamish Sutherland and Rod Binedell from McMahons give an insight into the largest scale surface works performed at the arena in its 150 years.

Few sporting arenas in the world have an aura quite like the Melbourne Cricket Ground. Over the past 150 years, the People's Ground has hosted the Olympic Games, carried epic AFL grand finals, while Don Bradman's 19 first class centuries and nine Test centuries at the 'G' head an extensive list of cricketing milestones.

Lacrosse, baseball, and even cycling have used the hallowed turf as a stage, while outside of sport the 'G' has entertained royalty, rock musicians, religious gatherings, and even acted as a base for WWII defence forces.

The place is steeped in history and in the latter half of 2004 another unique chapter was started. Following the 2004 AFL Grand Final, the largest scale surface works ever performed at the MCG began, the first of four stages which will see the MCG transformed into the centre stage for the 2006 Commonwealth Games.

The surface works are part of an overall \$430 million redevelopment project undertaken by the Melbourne Cricket Club which also

includes the rebuilding of the Ponsford, Members and Olympic stands.

Gone is the ground's famous dome like surface, used for more than a century to ensure effective drainage, and for the first time in its history the MCG now boasts a level playing surface.

Planning for the massive project began in April 2002. Turf contractor HG Turf played an integral part in the planning of the project and was involved in the initial bid with Grocon.

HG Turf's responsibility was the selection, supply and placement of gravel and sand for the new arena profile and the growing and installation of the turf – Motz Stabilised Turf.

Delta Group carried out the bulk excavation and the installation of communication pits and conduit, drainage and base preparation. About 19,000 ton of material was excavated from the arena (1.3m from centre of the existing camber), with work sequenced in four quadrants enabling subsequent trades to follow the excavation.

The new drainage system, designed by

the MCC/ARUP, consisted of 150mm slotted PVC drainage pipe running north-south on 11m spacings from the centre of the field and falling at 1:200 to the perimeter of the field where they were connected into the existing stormwater system.

Century Rain and Irrigation Design Consultants designed and installed the new irrigation system, a computerised Rainbird decoder system with valve under head enabling each irrigation head to be individually controlled, essential for managing the numerous microclimates within the arena.

Similar irrigation systems are installed at Telstra Dome and Eden Park in Auckland, New Zealand and have proved invaluable in managing the irrigation of shaded areas.

DRAINAGE BLANKET AND ROOTZONE PROFILE

HG Turf selected the gravel for the 150mm drainage blanket and sand for the 250mm rootzone profile. With the help of AGCSATech, The Motz Group USA, and CLC Labs USA, a 7mm pebble from Hanson Quarries (ex Pioneer) was selected for the gravel drainage blanket, while a medium washed USGA sand from Rocla Quarries was chosen for the rootzone profile. MCC/ARUP provided the gravel and sand specifications.

A special MCG blend of Rocla medium washed sand was required for the project with the sieve analysis of the sand finer than normal. The Rocla MCG Blend consisted of: Fine gravel <1; very coarse sand 1; coarse sand 17; medium sand 53; fine sand 27; very fine sand 1; silt plus clay 1. Bulk density 1.6g/cm³; total porosity 40.2%V/V; and hydraulic conductivity 1240mm/hr.



Placing the gravel drainage blanket and rootzone sand

After the sand was performance tested (moisture release curves, uniformity, bulk density, porosity and infiltration) 12,000 ton was stockpiled at the quarry to ensure consistency. With the assistance of AGCSATech, the control tolerances of the USGA were referenced, and a +/-3% envelope for the fine, medium and coarse fractions adopted.

Consistency in the gravel was also assured by stockpiling 5000 ton at the quarry. The gravel was also performance tested, with uniformity, permeability and bridging factors taken into account.

Both the gravel and sand were sampled from the stockpile before being trucked to the site and then again after being placed in the new profile. The control tolerances and

sampling procedures formed part of HG Turf's larger inspection and test plan for the project.

McMahons was subcontracted to place the gravel and sand, with Bernie McMahon managing a team of 12.

UNIQUE CONDITIONS

The placement of gravel should have been relatively straightforward - 150mm deep blanket over a flat sub-grade. Work was due to commence on 26 October, however with above average rainfall in late October and early November the project was delayed for over two weeks and didn't start until 15 November.

Added to this delay were the strict work conditions imposed by the unions, conditions the turf industry typically does not encounter.



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Bad weather and union issues caused many delays

The union week was based upon the 36-hour week with a paid rostered day off every second Monday. The site work hours were 7am-3.30pm Monday-Friday with two hours of overtime allowed (3.30pm-5.30pm, Monday-Thursday). Saturday could be worked as overtime (7am-2.30pm) and work on Sundays was not provided for. So, the maximum hours per week for an employee were 56 hours if overtime was worked.

Additionally, no work was allowed in the sun if temperatures reached 32°C, and if temperatures hit 35°C all workers were sent home. An excavator operator in an air-conditioned cabin could work in 32-35°C provided he remained in his cabin. Similarly, if it rained, work stopped for those not covered with a cabin. Workers were sent home if the rain delay was greater than half the remaining hours to be worked in the day.

To best manage the delays and work conditions, the entire quantity of gravel was stockpiled on site and moved around the field as the sub-grade was progressively handed over. Although it involved double-handling, it guaranteed much-needed flexibility.

The handover of the sub-grade was slow with small areas being released, in part due to the sub-grade material failing the density test/proof role and needing to be cut and filled, and also in part due to the works methodology of the civil contractor.

To give an idea of how slow it was to place the gravel, work started on 15 November and finished on 9 December. HG Turf expected to place 40 truck and trailers a day, equalling 1200 ton per day (five days for 5000 ton).

To combat the delays, two crews worked to place the gravel and sand. The placement of sand began on 25 November, one month and one day out from the Boxing Day Test, and continued through until 14 December.

Like the gravel, HG Turf expected to place 40 truck and trailers per day (10 days for 12,000 ton). The sand was also slow to place because of the small areas handed over, with two-thirds of the sand also stockpiled.

TECHNOLOGY TO THE FORE

The placement of the sand was less straightforward. It required greater consolidation than the gravel and the quantity of sand was far greater. Also, the sand was placed to a 1 per cent slope for the first 14.2m around the perimeter of the field and then to a flat grade over the balance.

McMahons used its Blade Pro ATS 3D laser technology to achieve the grades. The 3D technology allowed the sand to be placed efficiently and accurately over each small area handed over after the gravel was placed. More importantly, it allowed small areas of sand to be prepared ready for turfing, in doing so keeping the works flowing and the MCC and Cricket Australia happy.

McMahons has developed its own 3D control technology to produce exact final surfaces. Utilising GPS (Global Positioning Systems) and ATS (Automatic Tracking Stations), combined with custom-made tractor and scoop combinations, complex shapes can be created with relative ease.

In the case of the MCG, the ATS system was adopted as it enabled McMahons to

deliver an accurate surface of $\pm 5\text{mm}$.

Working off computer-generated designs, the positioning system works out exactly where the cutting edge of the blade is in relation to the design. The onboard computer takes control of the hydraulic valves and drives them accordingly to enable the blade to reach grade. The system adjusts for tilt both sideways and forward/back motion, with the blade position being updated six times per second. A conventional laser was also used as a large proportion of the playing surface was to be flat.

The last of McMahons machines left on 16 December. Overall, McMahons' operation involved 12, 20 and 30 ton excavators, three tractor and scoop combinations, one dozer (D5LGP) and four articulated dump trucks.

Shortly after work began on laying the drainage blanket and rootzone, MCC arenas manager Tony Ware and his team installed the cricket wickets on 29 November.

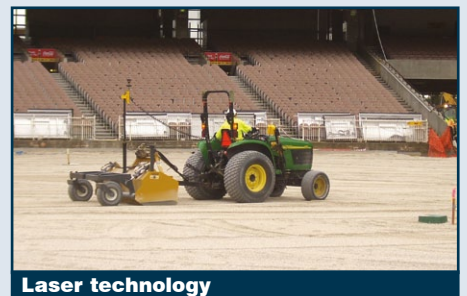
With works running behind schedule, Ware installed four half practice wickets in the centre of the field alongside three full-length wickets, one for the Test and the other two for the one-dayers. The original plan was to install the practice wickets at the perimeter of the field and six full-length wickets in the centre.

The wickets were lifted onto semi-trailers at the Punt Rd Oval nursery, transported to the MCG, trucked over the base to the centre wicket concrete slab, and placed via crane. Typically, a full-length wicket will weigh 32 ton while a half-length wicket will weigh 15 ton.

THE TOP COAT

As the contractors laying the new surface were part of the overall Grocon building site, incidents that occurred on the new grandstands had significant implications. Twice the unions stopped work for safety reasons.

Wet weather also added to the headaches. While gravel and sand deliveries were maintained and stockpiled, turf deliveries were something totally different. Many meetings were held with the unions to explain the



Laser technology

uniqueness of turf – that it is a perishable product that cannot be stored.

On one occasion, rain came in by midday and the laying of turf was stopped with one semi-trailer still to be laid. After it was successfully explained to the unions of the consequences of leaving the turf rolled up, the HG Turf crew was allowed back on site to roll out the remaining turf so it could breathe overnight.

Noting there was a non-negotiable date that had to be met (ie: the Boxing Day Test), the unions allowed work to continue through the wet weather. They also accepted that the wet weather did not pose a safety issue on the new sand base. Industry representatives noted that it was the first occasion since the building of Crown Casino that the unions had consented to construction workers working in the rain (except for concrete pours).

The rootzone sand was amended with organics and nutrients prior to the turf being laid including (measurements per Ha) 5000kg poultry manure, 1000kg dolomite lime, 1000kg

lime, 250kg 12-5-14, 250kg sulphate of potash, 150kg trace elements, 250kg sulphur coated 0-0-32, and 100kg slow release with 20-30% N.

The turf was planted at HG Turf's farm in Alexandra, Victoria in November 2003. The MCC specified 20,000m² of Motz Stabilised Turf, the same product used by the MCG and Telstra Dome for turf replacement.

The turf is laid over plastic, filled with 30mm of Rocla medium washed sand (amended with poultry manure, dolomite lime, trace elements and fertiliser) and sprigged with CT-2 couchgrass, also known as GN-1 from the Greg Norman Group.

The turf was maintained with fortnightly applications of NPK 150kg/ha rotated with NK 150kg/ha, magnesium 100kg/ha fortnightly, sulphate of potash 150kg/ha fortnightly, lime 2000kg/ha bi-monthly, and organics 2000kg/ha quarterly.

Chelate liquid iron was applied at 10ltrs/ha two weeks prior to the turf being installed at the MCG. The turf was regularly top-dressed on the farm to provide an optimum profile depth



HG Turf's Hamish Sutherland and MCC arenas manager Tony Ware



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of 50mm, and was maintained at a mowing height of 13mm.

Once harvested, the turf was trucked to the MCG on semi-trailers each carrying 280m² per load, in total 70 semi-trailers. The turf was laid from 7-19 December with up to eight semi-trailers laid in a day.

A crew of 10 laid and consolidated the turf, each roll weighing 800kg, and measuring 10mx1m with a profile depth of 50mm. Two turf laying machines were used, one laying the product and the other coming behind and pushing the product tightly up against the adjoining roll. The ends of each roll were overlapped and cut to guarantee no gaps.

Unlike conventional turf that needs time to root in, as was the case for the MCG's first rebuild in 1992, the Motz Stabilised Turf is a system within itself and does not need time to establish on site. Once installed the turf is cross rolled on the diagonal and then straight rolled in line with the turf.

Ware and his team commenced mowing the partly installed turf on 13 December, taking the height gradually from 13mm to 11mm ready for the Test.

After the final roll of turf was installed on Sunday, 19 December, Ware applied an application of Urea fertiliser to promote colour and growth. Nitrogen levels are carefully monitored when transplanting turf from the farm to the stadium. Excessive nitrogen can cause significant damage and the turf was brought in a little lean.

HG Turf's crew spent three days rolling and walking the field the week before Christmas, ensuring each roll was level and butted together tightly. On the third day both Australia and Pakistan trained on the practice wickets.

The Boxing Day Test went off without a



The MCG surface six days out from the Boxing Day Test

hitch and the Australians certainly approved of the remarkable transformation, pasting Pakistan by nine wickets.

REMAINING STAGES

The second stage of surface works will begin after the 2005 AFL Grand Final when two thirds of the turf will be removed and the underlying rootzone sand reshaped ready for the track.

The track – basically 70mm of asphalt and 13mm of rubber top – will be installed and a temporary turf system will be laid over the entire track comprising a protective plastic membrane, Atlantis drainage cell, rootzone sand and 12,500m² of Motz Stabilised Turf all in readiness for the 2005 Boxing Day Test. Modifications to the irrigation system will also be necessary and the MCC will install one

portable Test wicket.

Stage three starts immediately after the 2005 Boxing Day Test when the temporary turf system will be removed and the track exposed ready for marking and testing in February prior to the Games which start in March 2006.

The irrigation system will again be modified and the turf remaining inside the athletics track will be tapered so its level meets the level of the athletics track.

The final stage will come after the completion of the Commonwealth Games. The brief is to remove the running track and the turf from the infield and the rootzone sand re-levelled flat across the entire arena to its long-term profile of 250mm. 20,000m² of Motz Stabilised Turf will then be laid ready for a late start to the 2006 AFL season. 🌱

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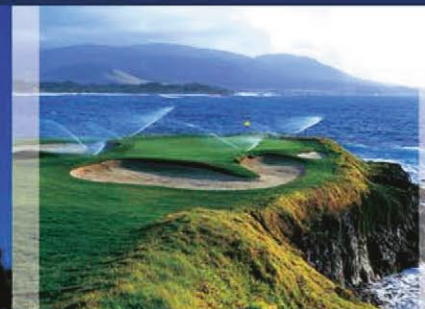


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2004 CENTENARY AUSTRALIAN OPEN

– A Pictorial Review

The Australian Golf Club superintendent Rob Ashes had predicted his course would provide a stern test of golf for the Centenary Australian Open last November. And the veteran of four Opens was certainly on the money.

Just four players finished under par with Peter Lonard shooting a sublime three-under on the final day to snatch the Stonehaven Cup for the second consecutive year and pocket a healthy \$270,000.

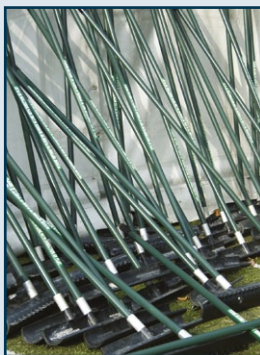
The Australian was, as always, in exemplary nick and Australian Turfgrass Management magazine wishes to congratulate Ashes and his crew for their hard work in preparing 18 very tough championship holes. The following is a tribute to their efforts.



The 17th looking a picture on the final day



Familiar friends



Tools of the CQO trade



Left: Perfect attire for battling bunkers



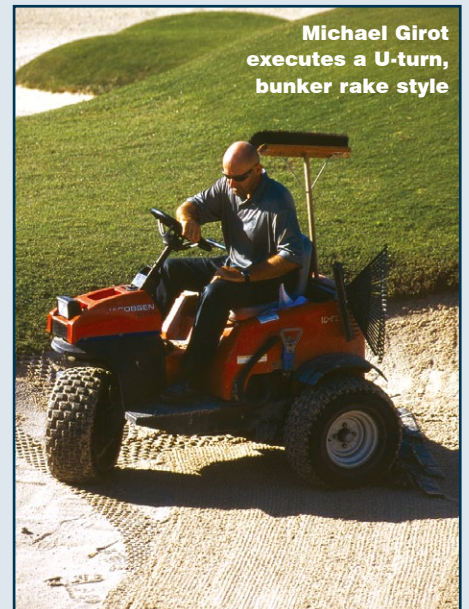
Nice pants, great shot! Scott Hend recovers at the 2nd



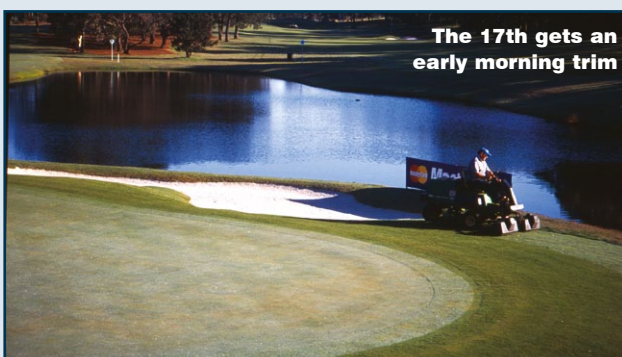
**Royal Canberra's finest in action.
Peter Wall gets busy in a bunker**



On the 18th, from left, are the AGU's Dominic Wall and Colin Phillips, The Australian's Rob Ashes and Derek Grendowicz, and the AGCSA's John Neylan and Steve Potts



**Michael Girot
executes a U-turn,
bunker rake style**



**The 17th gets an
early morning trim**



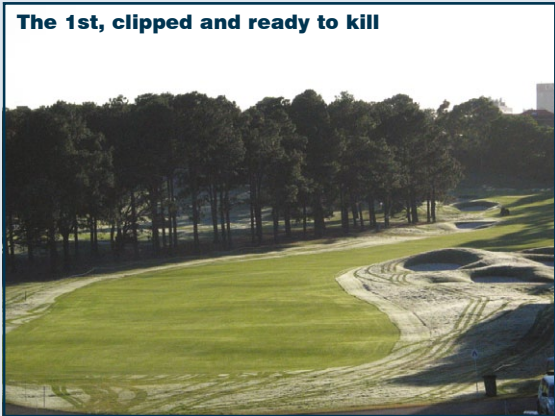
**Arnold Palmer returned
to the scene of his 1966
Open victory**



Allenby blasts out on 18

2004 Centenary Australian Open – A Pictorial Review

The 1st, clipped and ready to kill



A diligent CQO at full stretch



The 3rd gets a good grooming before the final round



The Australian's international crew



The Australian Golf Club crew with 2004 Centenary Australian Open victor Peter Lonard



The extended 16th proved the downfall of many



Duncan Brown walks the walk on the 10th before the third round



Rob Ashes entertains a distinguished member of the gallery



The 1st in tournament garb

MOTORBIKES, MECHANICS AND MILESTONES

- The Paul Coglan Story

When Paul Coglan was named the NSW Turf Equipment Technicians Association mechanic of the year for 2004, ATM was told there was a little more to this mechanic than just his exemplary work ethic. We investigated, and the story, we are sure you'll agree, will make you sit back in amazement.

Every maintenance facility has its characters. There are those larger-than-life guys who develop a reputation for their antics, then there are those that make a name for themselves through their work ethic and ambition to reach the top of their profession.

Then there is Paul Coglan, turf mechanic at Avondale Golf Club in Sydney's northern suburbs, who can rightly claim to be in a class all his own.

He goes by various nicknames around the Avondale shed, none of which will mean much to anyone until you hear what this 35-year-old has endured over the past three years.

Coglan doesn't mind the nicknames that get thrown his ways these days. His refreshingly positive and laid back attitude means he can joke along with the rest of the crew and take the mickey out of himself about the unfortunate accident which befell him.

Coglan's world turned upside down in June 2001. With the crew at Avondale settling down for winter, Coglan was just a couple of weeks away from jetting off to Canada to visit his then partner's parents.

Before leaving though, he and three of his close mates decided to go for a blast on their



Despite an horrific motorbike accident some three years ago, Avondale Golf Club mechanic Paul Coglan has returned to work and was recently awarded the Nayjon Award for Excellence by the NSW TETA.

motorbikes to Wisemans Ferry, north west of Sydney. It was a road the bike-mad quartet had ridden many times before, but for two of them, this particular day would have life-changing consequences.

On their way back home, the four rounded

a bend only to find a van coming the other way that had crept across the median strip.

"I remember the whole thing right up to when I hit," recalls Coglan. "Obviously I can't remember much after that but I knew it was going to be pretty bad. I tried my hardest not

to hit it, but, you know..."

Hitting the bitumen, Coglan's GSX750 spun right around and both he and his prized possession collided with the rear wheel-arch of the van. Coglan went up inside the wheel-arch, the consequences of which take little imagination to figure out. Coglan's mate Steve Rymer also clipped the van before careering off the road and slamming into a tree, breaking his back.

Coglan, however, won bragging rights for coming off worse. Taken to Westmead Hospital, the then 32-year-old was put into a drug-induced coma for three and a half weeks in the Intensive Care Unit.

The extent of his injuries were horrific. The left side of his body took the full brunt of the impact and from his shoulder down his body was pulped. His arm was mangled with both bones and the elbow joint completely separated. His leg, hip and ribs were smashed and as a result of being caught in the wheel-arch, Coglan lost a large section of his gluteus muscle and exposed the sciatic nerve.

Rehabilitation was painful and endless. Coglan had to endure massive skin grafts and also had enough metal screwed and wired in to make any mechanic blush. Being confined to a hospital bed in the High Dependency Unit for the best part of eight months, Coglan required countless hours of physiotherapy and rehabilitation in order just to walk again.

If that wasn't enough, Coglan's partner at the time was pregnant and it wasn't known whether Coglan would make it out in time for the birth of his first child.

"It was a long trip back," says Coglan in a classic understatement. "It was a very slow



Improvements that Paul Coglan has made to the Avondale workshop, such as this hydraulic lift table, makes everyday work easier

recovery, but not once did I think I couldn't go back to work. In fact I wanted to get back to work as soon as I was better.

"It was just a matter of pushing and pushing myself as I wanted to get back and certainly didn't want to have to change jobs.

"Looking back, it was an unfortunate accident, but you've got to accept it and get on with it. Considering some of the antics I've been up to in my life, I'm pretty fortunate to still be here!"

To look at Coglan now you wouldn't recognise the major trauma his body has been through. Apart from the scarring on his arm

and his pants being a little loose in the seat, he looks like any other mechanic about town.

The injuries Coglan sustained, however, still impact on his every day life. Sitting for too long is painful, lifting anything heavy is no longer a consideration and a serious knock to the wrong part of the left side of his body could have major consequences.

Ironically the timing of the accident couldn't have been better for Coglan. The club was just about to start construction of a new maintenance facility and Coglan had just finished packing up the workshop prior to the accident.

"The guys in the shed and David (Warwick, course superintendent) were great," says Coglan.

"They kept my position open and visited me in hospital and showed me photos of the new shed being built."

In fact the new facility provided some encouragement for the recovering Coglan to get back to work.

"If I was coming back to the old shed it would have made things a lot more difficult," says Coglan. "But with the new shed I knew I would be able to adapt things to make my job easier considering my limitations."

Coglan has been at Avondale Golf Club in the Sydney suburb of Pymble for the past 16 years.

He started there as an apprentice greenkeeper but his love for motorbikes and cars meant he had a bit of a mechanical bent and was always in the workshop tinkering with golf course machinery.

"I was always popping in and out and helping in the workshop and became more

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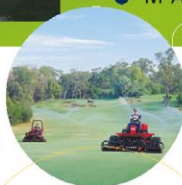


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Motorbikes, Mechanics and Milestones - The Paul Cogan Story

and more involved," says Cogan.

"I really enjoy it. I'm right into bikes and cars and I've been doing that sort of stuff all my life. Then when David came on he saw that I had potential and put me in there."

When David Warwick joined the club six years ago as superintendent, he immediately noticed Cogan's skills and promoted him to trade assistant before appointing him as chief mechanic in 1996, a move which Warwick says was a natural progression.

"It was a long trip back...It was just a matter of pushing myself..."

"When Paul was promoted he immediately set about implementing many improvements to workshop systems," says Warwick.

"He also made a number of new storage systems and engineered various pieces of equipment in response to work related issues identified by other guys on staff."

Ultimately a number of these improvements have proved immensely helpful in Cogan's

everyday work, particularly the hydraulic lift table which was featured in the Innovative Way section of this magazine in Vol 6.3 (June-July, 2004).

One thing that Warwick says impressed him so much about Cogan during the long road to rehabilitation was his desire to get back into the shed and his sense of humour about the whole thing.

"At no stage during his recovery did we look at filling his position," says Warwick.

"He had been at the club for such a long time and his technical ability, his creativity and ingenuity and the results he achieved in the workshop were a huge asset to the shed."

"Even when he was in hospital he wanted to be actively involved in all facets of activities from repairs and maintenance issues through to the design of the new maintenance facility."

"He would give us advice from his hospital

bed on some occasions and despite being away for such a long period, the equipment had been so well maintained that very few mechanical repairs needed to be carried out.

"If repairs did need doing, the training Paul had given over the years meant the other guys were able to carry it out to a high standard."

Such was his determination to get back to the workbench and his unsurpassed work ethic, Cogan was officially recognised late last year when the NSW Turf Equipment Technicians Association bestowed upon him their highest accolade, the Nayjon Award for Excellence.

"I was pretty stoked to get the award," says Cogan. "It's a great honour and I suppose it all helps."

As for the bikes, Cogan sold his mangled GSX750 for parts and on occasions he still braves it haring around on a trail bike.

Oh, and the nickname his mates in the shed take great delight in calling him? Well, let's just say that Paul has become the 'butt' of a few in-house jokes. 🍑



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SHIFTING SANDS

Spotlight on NSW Golf Course Projects



The new par 3 2nd at Muirfield Golf Club

MUIRFIELD

Project: Hole reconstruction, irrigation system installation

Location: Sydney

Superintendent: Mark Warwick

Time period: June 2003-December 2004

Cost: \$500,000+

Comments

The last two years have been a busy period for Muirfield Golf Club superintendent Mark Warwick and his crew, with a number of holes reconstructed and a new irrigation system installed.

In fact, the summer of 2004/05 was the first time for a number of years that the Muirfield crew could concentrate solely on maintaining the northern suburbs course.

The first stage of works began back in 2003 with the reconstruction of the second hole, a favourite of many of the club's members.

Originally a par 4 running along one of the boundaries, insurance problems and balls encroaching on neighbouring properties forced the club to change the layout of the hole to negate such problems.

From a par 4, the second was transformed into a 147m par 3 with a brand new G2 green. At the same time the fourth green was also converted to G2 while the tee areas on 2, 3, 5 and 8 were all turfed with Conquest couch.

The second stage of works consisted of



reconstructing the 3rd and 6th greens as well as the tee banks on 4, 16 and 18. Fairway bunkers were also incorporated on the 3rd.

During all this Warwick and his staff installed a brand new Hunter irrigation system, the first time the course has had a proper system. The Genesis system consists of twin row fairway sprinklers while part circle sprinklers were used on greens, surrounds and tees to give as much control and assist with water saving.

"The biggest challenge throughout all this was trying to keep the course ticking along and half decent," says Warwick, who joined the club as superintendent three and a half years ago.

"We had a couple of contractors do the big stuff but the rest of the work – turfing, bunkers and fine finishing – was done in-house.

"We've still got a bit to catch up on but the changes look good. The work needed to be done and the club is happy with what we

have achieved. It will be good just to get back maintaining the course."

It wasn't all plain sailing, however, and Warwick and the club had to endure complaints from neighbours during the works, and for a 10-day period early on in the project the local council halted works due to concerns with the plan. Despite the plans being correct, valuable time was lost and Warwick estimates the delay cost the club \$20,000. To Warwick's credit, however, the project eventually came in under budget.

With major course works now completed – the 3rd was opened in December while the final hole (the 6th) was opened in early January – Warwick's focus is now on securing the course's future water supply especially with water restrictions now commonplace.

At present the course only has one 19-megalitre dam and a couple of smaller dams totalling about four megalitres.

During the recent works a couple of bores were sunk which will provide enough water to irrigate tees and greens. Due to the high salinity of the water, however, Warwick is investigating the possibility of installing a desalination plant.

"We've done a fair amount of background work," says Warwick. "Water is our biggest issue here at the moment and we have to ensure our supply, particularly now that we have a flash new irrigation system."

Warwick is working with a company in nearby Castle Hill about the possibility of incorporating a desalination plant at the course.

WOLLONGONG

Project: Complete course redevelopment

Location: Wollongong

Superintendent: Steven Crawford

Time period: 2005-2008

Comments

Further down the NSW coast, Wollongong Golf Club superintendent Steven Crawford looks set to have his calendar booked solid for the next three to four years.

In what is set to be the largest undertaking in the club's 104-year history, the coastal course is set to be completely redeveloped. When ATM talked to Crawford days out from Christmas, final drawings were underway and he was hopeful that major earthworks would begin in May.

The redevelopment is a major step by the

club which has in recent years been struggling according to Crawford. The decision was made to revitalise the club both on and off the course, and to help finance the works the club sold off two hectares of land.

The club, which incidentally is still on the very same site as it was founded on, has already started work on the first stage of the project. In November construction began on a massive new four-storey clubhouse, the top two storeys housing 20 serviced apartments with views of the coast.

In what is the biggest project Crawford has been involved with during his 10-year stint at the club, he has made the job all the more challenging by giving an undertaking to the club to keep all 18 holes in play during the overhaul.

"It's going to be a great project to be involved with and we can't wait to get started on it," says Crawford.

Just three of the course's existing greens will remain in their current location with major re-routing of all other holes in order to make the course more attractive to nine-hole golfers. The first holes to be redeveloped will be in and around the clubhouse.

The present kikuyu fairways will be converted to Wintergreen couch. Wintergreen will also be used on tees and greens surrounds, while the rough will consist of native couch. In preparation, Crawford has established a Wintergreen nursery.

Being located adjacent to the coast, many dunes will need to be rebuilt due to the removal of extensive populations of bitou bush, while Crawford says they will be mining native sands on site to use in the pot bunkers which will be

included in the new-look layout

As for the greens, at the time of talking with Crawford he was still in the throes of deciding which will best suit Wollongong.

"We're a little unsure at the moment," says Crawford. "We have trialled a number of the bents – G2, A4, L93, Dominant and Pennncross as a yardstick.

"The G2 is by the far the best in our trials but the problem we have is that we don't have the staff to maintain it. I have been talking to other supers who have G2 greens and the common theme is that they take a lot of extra man-hours and there are only six of us here.

"What will probably end up happening is that we will go with a blend of 1020/1019, but I'm not sure what percentages yet."

Crawford says that a new irrigation system will be installed during the works and at the same time the search will continue for a sustainable water supply.

Despite having a treatment plant literally next door to the course, a possible supply line is still a number of years away and for the meantime Crawford is investigating the use of bore water and ground water.

AVONDALE

Project: Greens conversion, remodelling of greenside bunkers

Location: Sydney

Superintendent: David Warwick

Cost: \$1.2 million

Comments

The end is in sight for Avondale Golf Club superintendent David Warwick, winner of the 2004 Claude Crockford Environmental Award.



No mix ups at Avondale

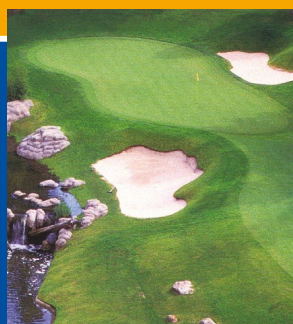
As this magazine hits sheds around the country, Warwick will be eyeing up the penultimate stage of a project which has seen the conversion of all greens from *Poa annua* to G2 bentgrass.

Working off a master plan designed by Ross Watson, the plan had been to initially do the conversion over a longer period of time. However, once the club saw how good the new greens were, and with a bit of encouragement from the shed, the remaining works were fast-tracked and Warwick is now hopeful of having the whole project completed by Christmas 2005.

Earlier in 2004, holes 3, 4 and 7 were completed and over the summer of 2004/05 Warwick and his contractors have completed 5, 6 and 10 which brought to a finish work on the front nine.

In April, work will begin on 12, 13, and 16 and come late September/early October the final three holes – 11, 14 and 18 – will round off the works.

Aside from the new surfaces, greenside bunkers have been completely remodelled ▶



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Shifting Sands - Spotlight on NSW Golf Course Projects

with the overall number of bunkers slightly increased.

"Our bunkers were typical of a Sydney course," says Warwick. "What we have done now is to improve not only the consistency of the sand in the bunker to make them more aesthetically pleasing, but to bring them more into play from a strategic point of view."

During the works, minor adjustments were also made to fairway bunkers and tee banks, the latter to negate any safety issues.

One of the biggest challenges Warwick has had to face during the conversion process is maintaining both the new G2 greens and the old *Poa* greens.

Keeping *Poa* out of the new G2 greens, which incidentally have been installed with innovative couch encroachment barriers, is proving a constant battle and Warwick and his crew have spent many hours hand-weeding the new greens.

Warwick has taken to using separate mowers for the *Poa* and G2 greens and each mower is labelled (see photo previous page). As well, staff have been instructed to use separate hoses to stop seed contamination.

WALLACIA PANTHERS

Project: Course reconstruction

Location: Penrith

Superintendent: Matt Kennedy

Time period: 2003-2007

Comments

Detailed plans for the second stage of works at Wallacia Panthers Golf Club in Penrith are well underway and superintendent Matt Kennedy is hopeful work will commence in August/September.

Having recently completed the first stage of works, which involved the 4th and 6th holes, Mark Parker's Eclectic Construction (Parker is superintendent at Concord Golf Club) has again won the contract for the second stage of works which will incorporate holes 13, 14 and 15.

The third stage of works, which is expected to get underway at the start of 2006, will see the major clubhouse redevelopment and the upgrade of surrounding holes 1, 9 and 18.

By the end of that year Kennedy is hoping to have the final stage underway which will take in major reconstruction of holes 3 and 5 as well as some minor work to the remaining middle section of holes.

Once completed, half of the holes will have been completely changed, with the

remaining realigned and made harder and more aesthetically pleasing.

Kennedy has sown the new greens with G2 and has been impressed with the way the initial two greens – 4 and 6 – have taken. The G2 replaces the old greens which were a *Poa*/bent mix.

"They (the new G2 greens) are performing really well," says Kennedy, who is in his third year at the club. "They are quite thatchy, but we are keeping on top of that with regular dusting and scarifying. The only challenge we've had so far is the vigour of the new G2 greens and being able to keep on top of them."

The old fairways, which were a mix of native couch and kikuyu, have been transformed with Conquest, and Kennedy is over the moon with how the new couchgrass is performing.

"The Conquest has been a real bonus here," says Kennedy. "I've got it down to 6mm on the fairways and it is performing exceptionally well."

Ross Watson has developed the master plan for the club and Kennedy says that all members have welcomed the new changes with open arms.

"Some of the new holes will be considerably more difficult," says Kennedy. "Ross is a great designer and has great vision, and has added even more character to the course."

"For us, it's a good challenge and it keeps the boys interested. We're looking forward to completing the works and seeing the final product."



Work on the 18th fairway at Castle Hill

CASTLE HILL

Project: Fairway widening

Location: Sydney

Superintendent: Martyn Black

Comments

Having recently completed the 18th men's tee area, which involved some landscaping work with sandstone, superintendent and AGCSA board member Martyn Black has turned his

attention to widening the 18th fairway.

"The hole has always had the potential to be one of the best finishing holes in Australia," says Black. "The widening of the fairway will encourage the low handicappers to go for the green in two and the levelling of the right-hand side will stop the sliced ball going into the drink."

Costing in the vicinity of \$180,000, the works involve a 180m strip of the fairway immediately after the tee. The process has involved reclaiming some of the land from the adjacent lake.

As well, Black has taken delivery of some seashore *paspalum* and despite a few delivery hassles has planted some trial plots. The next major project on the cards is the reconstruction of the 5th green which is expected to get underway later this year.

BONNIE DOON

Project: Course extension

Location: Sydney

Superintendent: David Scaife

Comments

Bonnie Doon Golf Club is currently working to a master plan drawn by Ross Watson. The plans show the extension of the golf course to the west incorporating three new holes. The club covers about 39ha, which is leased from Sydney Water, and the new holes will give the club another 6.5ha.

As part of the lease agreement, the club has formulated an Environmental Management Plan which was adopted in January. The document was drawn up by Abel Ecology and requires a report every 12 months and a full audit every two years of the activities carried out on the golf course. The report will cover water, fertiliser, pesticide, fungicide use, plantings and removal of undesired plant species and bush regeneration work.

Over the past two years, superintendent David Scaife has been able to address problems on holes 9 and 10, which border a road, by realigning tees and greens and removing several trees and starting a kikuyu removal program.

The old kikuyu fairways have an enormous thatch problem that can be over 200mm thick and as part of the master plan Scaife will remove the old thatchy kikuyu and plant Wintergreen couch into the sand base.

Holes 11-16 were redesigned over 10 years ago and the fairways planted with couch. Over the years the kikuyu has been allowed to

encroach and become the dominant grass.

Scaife instituted a vigorous kikuyu eradication program some 18 months ago on these fairways and has witnessed a complete turn around with the understorey couch being allowed to again be the dominant grass.

In the weeks before Christmas, Scaife and his crew had all the green surrounds redesigned and washed Wintergreen turf planted on holes 12-15. These four holes will now blend in with 9, 10 and 16 as well as the master plan.

PYMBLE

Project: Hole reconstruction

Location: Sydney

Superintendent: Scott Harris

Comments

When he's not battling pesky wood ducks, Pymble Golf Club superintendent Scott Harris has been busy reconstructing a number of greens at the northern suburbs course.

Throughout the latter half of 2004, Harris and his crew built three new greens, surrounds

and greenside bunkers – 8, 10, 14 – constructed a new fairway bunker on 10 and constructed a new tee box on 8.

Harris, like a number of Sydney supers, has sewn the new greens with G2 and when ATM called upon Harris in the lead-up to Christmas he was inspecting their progress.

Two of them – 10 and 14 – are “going like gangbusters” and Harris was hoping to have them open in the second week of January.

The 8th however, which has markedly more contouring than the other two, has been a bit slower to take (four to five weeks behind the others) and Harris was hopeful of having it open prior to a major amateur tournament the club is hosting in early February.

As for the remainder of 2005, Harris and his crew are set to have a relatively quiet year. Aside from maintaining the new G2 greens and dealing with their idiosyncrasies, minor projects including the installation of a silt trap in the creek feeding the irrigation dam and desilting the irrigation dam. Some minor work to tee boxes is also planned.

DUNHEVED

Project: Greens conversion, hole construction

Superintendent: Andy Melville

Comments

Jim Wiltshire from Golf by Design is currently developing a master plan for Dunheved Golf Club.

While there won't be major layout changes, superintendent Andy Melville says the course's old bunkering will be completely redesigned as well as all greens, surrounds and greenside bunkers.

Melville reconstructed one of the club's more troublesome greens in 2003 and has been happy with the way the new G2 surface has been performing, enough so to consider replacing all other 17 greens with the new generation bentgrass.

Melville is hopeful that the club will adopt the master plan and that work will get underway towards the end of 2005, but believes the club will probably just give the go-ahead to do three greens each year.

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Shifting sands - Spotlight on NSW Golf Course Projects



The soon-to-be-demolished "temporary" NSW maintenance facility

NEW SOUTH WALES

Project: Maintenance facility construction

Location: Sydney

Superintendent: Gary Dempsey

Comments

After more than 10 years of planning, NSW superintendent Gary Dempsey finally has the development approval for the construction of the club's new \$2 million workshop.

Taking 13 months and costing \$80,000, the DA arrived on Dempsey's desk with an accompanying seventy five conditions which will no doubt cause the sagacious superintendent some headaches during construction.

The new facility will have 1027 square meters of floor space and 273m² of office and amenities space. (Dempsey assured ATM his new office has ample room to house the many souvenirs from his overseas sojourns to the Majors).

"The entire area has been designed to cater for all the current needs relating to course maintenance and we have had to look deeply into our crystal ball to see what may be necessary for future needs," says Dempsey.

"Most of all we have endeavoured to make the facility as environmentally friendly as we possibly can.

"This has seen the inclusion of a bunded chemical storage and fill station, closed loop washdown bay, total re-use of all water used on site, re-cycling of all green waste on site, permanent protection fencing to adjacent bushland sites and a host of other considerations to assist in making this development sit well in our unique environment."

The internal workings of the workshop will be the most modern available and at the time of talking to ATM Dempsey was hopeful of getting the construction certificate in February. All going to plan, construction will begin in the latter part of autumn and Dempsey anticipates moving in by Christmas.

The new facility is about 75m from the

existing workshop which means the NSW crew will be able to operate as normal until the project is completed.

While the new maintenance facility takes centre stage, Dempsey and his crew are continuing a program to revet bunkers on the La Perouse course. Thirty-seven bunkers have been revetted with 17 still to be completed.

Due to the climate, Dempsey has been forced to develop a specific technique to ensure the most benefit is gained out of what is essentially an organic structure.

"We have in place a system where we grow a nursery of revet sod," says Dempsey. "Good sod takes about 2-3 years to mature and we are managing up to eight years life of the walls before they have to be replaced.

"The program has reduced bunker maintenance dramatically; however, the task of re-revetting is never-ending as there are always bunkers in varying states of decomposition.

"Some of the things that severely effect revet life are foxes and dogs digging, earthworms destroying the organic structure and golfers trying to scale the sometimes 8 feet high walls!"

ST MICHAEL'S

Project: Master plan

Location: Sydney

Superintendent: Darren Jones

Comments

St Michael's Golf Club superintendent Darren

Jones is in the early stages of working through a master plan, with works scheduled through to 2010.

Issues that needed to be addressed on the course before the club could move ahead were high levels of labour needed weekly just to carry out hand mowing.

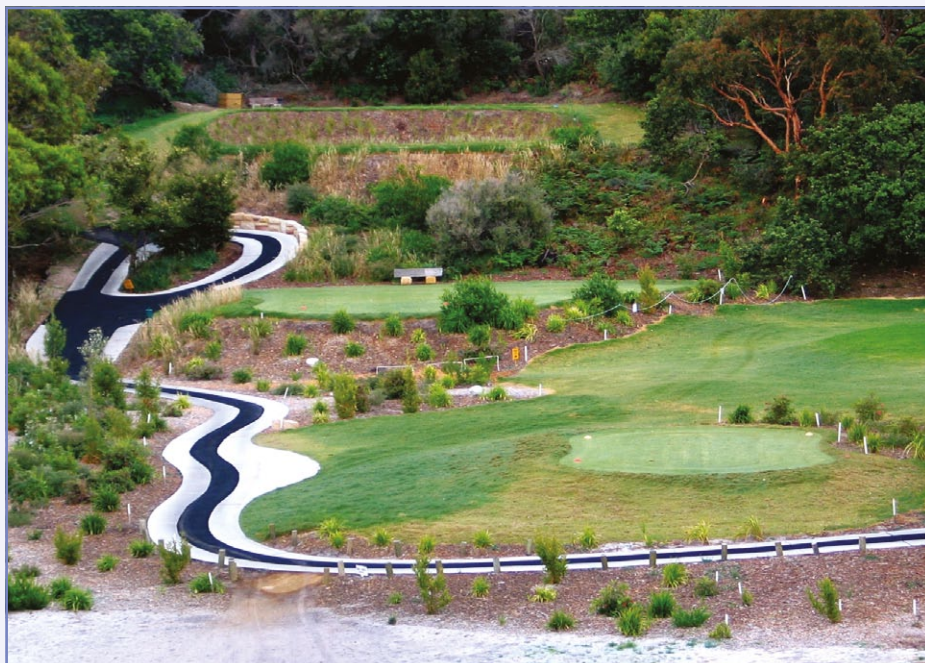
The tee banks were too steep to be maintained with a ride-on mower, the property security was old telegraph poles laid down on the grass to stop cars driving in which again had to be mowed around by hand. The high levels of labour spent in the wrong areas were the main drives in the direction of the master plan.

Encompassed in the master plan, which has been worked on since 2002, is the reconstruction of all tees, improving drainage across the course and addressing regeneration issues with native flora.

Also in the pipeline over the next three years is to guarantee the course's water source. This is to be addressed by deepening the current bore, sinking an extra bore, increasing the capacity of the dam, and installing a more efficient irrigation system for fairways and tees.

A larger, compliant maintenance facility is also planned while Jones and his crew will return fairways to couch.

In the latter years, plans incorporate works to holes 6-9, the reconstruction of 11 greens and at the same time updating the irrigation system and re-turfing surrounds in couch. 🌱



The new 3rd tee complex at St Michael's



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In this instalment of AGCSATech Update, John Neylan casts his eye over some of the highlights and issues to emerge in the turf management industry during 2004.

2004 CENTENARY AUSTRALIAN OPEN

In 2004 the AGCSA was privileged to continue its close association with the Australian Golf Union in the lead-up to and during the Australian Open at The Australian Golf Club.

The Australian Golf Club is a well established tournament course with an experienced turf maintenance team led by superintendent Rob Ashes and assistant David Honeysett. It was interesting to observe the preparation of the course in a different climate, though the spring was unseasonably cool and overcast and provided some challenges.

good order and running smoothly.

For the second consecutive year we have seen the Open played on high-quality Penn A1 greens. The environments and soils at the two locations are completely different. Moonah is on alkaline soils and is cooler and less humid, whereas at The Australian the soils are slightly acid and the weather is warmer and humid. The cutting height at Moonah is around 4mm while at the Australian it is 3mm with both courses adopting a relatively low nutrient or "as required" fertility regime.

The 2005 Australian Open heads back to Moonah and the AGCSA looks forward to again working with superintendent Leigh Yanner.

COUCHGRASS MITE DAMAGE

During spring, couchgrass mite damage was again quite noticeable and in particular where the couchgrass is under moisture stress or had been damaged by disease (in particular Spring Dead Spot). (See AGCSATech Update in ATM Volume 6.1, February-March 2004, for further information on the couchgrass mite)

The main concern at this time with the control of mites is the lack of turf registered miticides. The only registered miticide in Australia is Supracide® (a.i. methidathion) which is registered in SA, WA and QLD only.

This raises an interesting question as to what may happen in the future in terms of whether new miticides will be registered for turf and how those states that do not have a registered miticide will cope.

The AGCSA is currently making inquiries with the Australian Pesticides and Veterinary Medicines Authority as to what can be done to control pests when there is no product registered in that state.

2004 REVIEW

The turf industry continues to be vibrant, innovative, progressive and occasionally regressive, and 2004 proved to be no exception. The year flew by and for all the right and wrong reasons turf continued to make the news.



The 3rd at The Australian days out from the start of the 2004 Australian Open

From my perspective, what I was most impressed with was the great effort put in by the ground staff. There are many tasks to be undertaken and not all of them particularly glamorous. However, the team approach that all jobs are important to the overall presentation of the course came through very strongly and is a credit to all the crew.

I must make special mention too of the mechanics. For both tournaments (Moonah Links, 2003) it has been obvious how important the mechanics are in keeping machinery in



The close watch on whether the MCG would be ready for the Boxing Day Test was just one example of the infatuation the media and the general public has with turf. I have looked back through my diary to refresh my mind on turf matters that caught my interest during 2004.

Australian Rules Football

AFL dominates the papers in the southern states from February to October and if there is a turf issue that has caused a problem then everyone knows about it. Turf replacement, surface hardness, traction, slipperiness etc... all caused comment throughout 2004 with the occasional positive comment to go along with the "problems".

It has become apparent over the past year that the expected standard for the major sporting venues is nothing less than perfection. With the increase in usage in challenging environments and the desire for the highest quality surface, turf managers are being challenged at many levels to provide surfaces that enhance the game, while being safe and economical to maintain.

Over the past two years, the AFL has sponsored a playing surface monitoring project that has been undertaken by Dr. David Aldous (Melbourne University) and Ian Chivers (Racing Solutions). The project has yielded some interesting data that would generally indicate that our major venues are in very good shape.

In July the AFL sponsored a seminar that was attended by representatives of all the major venues and club training facilities, to discuss the issues raised in the research and how to ensure that sporting surfaces remain safe and allow the game to be presented at the highest standard.

It is interesting to note that as the AFL looks to play pre-season games at regional venues, the standards employed at the main venues are being used to assess the suitability of these regional venues. What this does is to raise the overall standard of playing surfaces at all levels.



The Australian ground staff cut the 18th prior to the third round

Water restrictions

Water restrictions around Australia are presenting all turf managers with potentially the greatest challenge they will ever face. I attended an Urban Irrigation Workshop conducted by the Co-operative Research Centre for Irrigation Futures and it is very sobering when you hear about the plight of Australia's water resources.

Whether it is stored runoff or ground water, many of the nation's water reserves are at critical levels. In fact, with the deeper ground water sources, this is water that has accumulated over many years and is being depleted at a rate greater than it can be replenished.

The turf industry requires water in order to maintain the current standards of turf quality and there is little doubt that it will not be long before the only water resource available for turf is recycled effluent.

Over time the turf industry will have to use lower quality water and consequently will need to look at different grass species such

as seashore paspalum. The consequence may be that in some regions we will have to alter our perceptions of what is the ideal turf surface and accept that we are lucky to have a turf surface at all.

The future requires us as turf managers to undertake a water management audit and determine the quality, quantity and longevity of our water resources. It may (and probably should) force us to look at the alternatives and start the education and implementation now before it is forced upon us.

Queensland Golf Conference

The Queensland Golf Conference was a gathering of all interest groups involved in the game and included superintendents, club managers, committee members, government representatives and professional golfers. It was a unique opportunity to discuss a diversity of issues that are affecting golf including membership, the cost of golf, administration and environmental.

The success of the conference was that ►



The site of the new Magenta Shores course in NSW

◀ it gave each specific interest group a wider appreciation of the challenges affecting the golf industry, particularly at club level. There is no doubt that the future of the golf industry in Australia will depend on a unified approach, with specific area issues set aside and the development of priorities that cross all interest groups.

Pesticides and the future

The future of pesticides is a continuing talking point and it seems that for every new pesticide registered for turf there is a "cheap" agricultural alternative found. It is becoming increasingly clearer that we need to support the turf registered products so that chemical companies will continue to support the Australian turf industry and continue to register new chemicals as they are developed overseas. One example is the lack of registered miticides (see above). Who is going to register the next miticide for turf? Is it going to be worth it and economically viable to the company?

Many turf managers will argue that many of the turf registered products are too expensive compared to the agricultural alternative. This may or may not be true

and the chemical manufacturers do have a responsibility to ensure that on a cost per hectare basis the product is cost effective and there is proven efficacy.

Golf course construction

New golf courses continue to be constructed in most states with many of them associated with housing subdivisions. They are being built on a range of sites from pure sand and naturally rolling topography to featureless and neglected swamplands with fine textured soils.

On these new sites the golf course architect is challenged to develop something unique within the restraints of the subdivision, with safety being of paramount importance. There are numerous matters that must be considered in this day and age including environmental, heritage, conservation and planning issues.

Water raises its head as the central issue for the golf course and often the last matter considered by the developers. Recycled water has become the primary water resource for most of these new developments with the biological quality the principal concern. That is, it virtually needs

to be Class-A water if it is going to be close to housing and of minimal risk to humans.

A question that is raised with these new developments is where are the golfers coming from and who is going to maintain the course at the current standard in the long term, particularly when the land sales are exhausted? The challenge at this point in time appears to be for the established members clubs to keep their members (and encourage new members) rather than have them drift off to play at various pay-as-you-play courses that may be of a superior quality and challenge.

MCG redevelopment

From an agronomic and logistics point of view, the redevelopment of the playing surface at the MCG has been a remarkable feat and is a credit to the organisational abilities and skill of all those involved.

The fact that we can grow turf at a remote location, develop it as a mature playing surface and then lay it elsewhere prior to a major event is quite remarkable. Well done to Tony Ware and his staff, HG Turf and all the subcontractors and suppliers involved with the reconstruction. 🏌️



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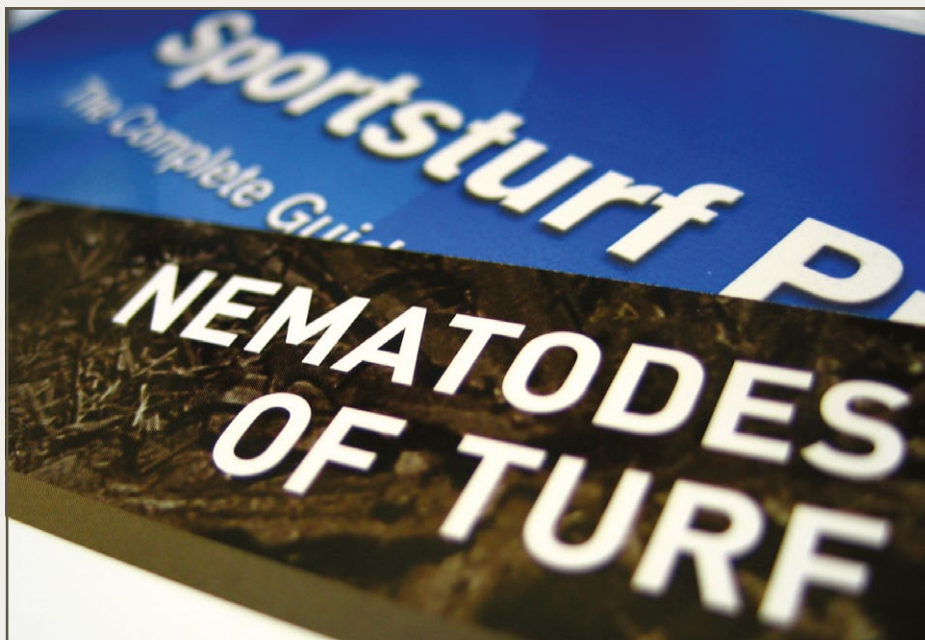
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NEMATODES

- The Microscopic Menace



Plant parasitic nematodes can cause extensive damage to turfgrasses

Andrew Peart takes a look
down the microscope at
some familiar friends in this
edition's instalment of
Tech Talk

Numerically nematodes are the most abundant animals on earth. They occur in soil, decaying organic matter as well as in fresh and salt water. Thankfully though there are only a relative small number of species that are parasitic to turf.

PLANT PARASITIC NEMATODES

Plant parasitic nematodes are transparent microscopic animals that are about 0.5-1.0mm long. They are tiny roundworms, circular in cross section, that have well-developed stylets used to puncture plant root cells and suck fluids. Most plant parasitic nematodes will then inject substances through their stylet into the plant cell to modify its content. All or a portion of the contents are then withdrawn by the nematode and digested.

Plant parasitic nematodes are obligate parasites meaning they must have plant hosts to grow and reproduce. In the absence of a host the nematode becomes dormant and

survives on its stored food reserves.

The feeding behaviour of the nematode allows for distinction into two main groups, ectoparasites and endoparasites. Ectoparasites feed externally and never enter the roots, while endoparasites enter the root and feed from within the root tissue.

Examples of ectoparasites are ring, spiral and stunt nematodes, while root knot, root lesion and cyst nematodes are endoparasites.

NEMATODE LIFE CYCLE

Nematodes have a distinct life cycle similar to many insects. Females lay eggs that hatch into juveniles and through a series of four molts develop into adults. Fertilisation of the eggs by a male is required in most species but not all.

They survive adverse conditions as eggs and feed when grass roots are actively growing. For cool-season grasses such as bentgrass, the time of greatest activity is mid to late spring as well as in autumn.

Nematodes are mobile, however, long distance movement (greater than 1 metre) is usually related to passive means, ie: in surface water, on machinery or transported in infected sod.

POPULATION DYNAMICS

Availability of a suitable host plant, soil texture and temperature are the primary factors that govern the rise and fall of nematode populations over a year.

Nematodes thrive in sandy soils due to the presence of air and the regularity of which sand-based playing surfaces are watered. While these conditions are obviously important for healthy turf growth they also provide the ideal environment for the development of high nematode populations. Nematode reproduction is favoured by mild to warm soil temperatures (20-30°C).

DAMAGE CAUSED

Plant parasitic nematodes can cause extensive damage to turfgrasses in warm temperate and subtropical regions. General foliar symptoms may include slight to severe chlorosis, declining growth rates, sensitivity to wilting and sometimes death. These symptoms are more than likely to be evident during periods of hot weather, drought or low fertility.

Turfgrass attacked by nematodes also have increased susceptibility to attack by diseases. Fungal pathogens are attracted to the site of nematode activity due to the oozing of plant fluids. The pathogens become highly active and can multiply rapidly and therefore severely increase the rate of turfgrass damage through not only the direct nematode activity but also secondary pathogenic fungal activity (disease).

The presence of nematodes can be expected if the turf generally lacks vigour, does not respond to applications of fungicides, irrigation or fertilisers. However, a nematode count is the only way to quantify their presence and determine whether the numbers present will be detrimental to plant health.

NITRATE LEACHING

When nematode damage is present there is a likelihood that more water and fertilisers will need to be applied to maintain acceptable turf due to the deterioration of root function.

Luc & Crow, 2004, conducted a study to determine if turfgrass root damage caused by sting nematodes could increase nitrate leaching and reduce nitrogen uptake by Tifdwarf couchgrass.

The results were that the sting nematodes had a significant effect on root length with average reductions being nearly 40 per cent in the first year trial and 70 per cent in the second year trial. The maturity of the root systems before the nematodes were added was the reason claimed for the difference between the two years.

Nitrogen leaching was greater in all

treatments with the presence of nematodes throughout the 18-week trial period in both the first and second year study. However, only on week 18 of both years was this result statistically significant.

The overall conclusion from the trial was that although it is difficult to extrapolate findings from lysimeters in a greenhouse to field situations, the experiment did indicate that sting nematodes might contribute to nitrate leaching in some situations.

CONTROL

No turfgrass cultivars are known to be resistant to feeding by all nematode species. The only practical controls are to encourage vigorous turfgrass growth through management strategies and the judicious use of registered nematicides.

However, some nematicides have become ineffective due to accelerated biodegradation. This occurs when the bacteria in the soil are so efficient at breaking down the applied chemical

it does not have a chance to work effectively against the pest for which it was applied.

In some soils where it has been repeatedly applied, fenamiphos is broken down by microbes 30 times faster than it is after a first time treatment. This unfortunately is the case in some parts of the country and is why nematodes are such an issue.

Soil bacteria is the way in which applied chemicals are naturally broken down so that accumulated chemical residues do not become toxic to plant life. However, on occasions it is detrimental to management strategies.

Due to the lack of nematicides, because of their toxic nature to both humans and soil ecosystems, options for eradicating nematodes are very limited.

The best strategy is to try and sustain a strong and healthy root system through the use of kelp products such as seaweed extracts, carbohydrates such as molasses and other organic based products.

These products will not necessarily have a

direct impact on nematode numbers but may help the plant tolerate their numbers before showing visual signs of stress and causing disruption to the playing surface.

Managing sites of high nematode numbers is all about reducing the stress the plant is subjected to. This may involve higher mowing heights to provide greater leaf area for plant photosynthesis, the thinning of trees to improve air movement and reduce shading, or hand syringing during the day to reduce heat stress.

Unfortunately there is no quick solution to eradicating nematodes. Over time there will be new products on the market that claim to reduce nematodes and each turf manager should conduct their own trials to evaluate the effectiveness of these products.

REFERENCES

(Luc, J.E & Crow, W. 2004.) *Sting nematode: Not a steward of the Environment. Golf Course Management* 72(9):86-88

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EVALUATION OF REDUCED CHEMICAL MANAGEMENT SYSTEMS

for Putting Greens



Integrated pest management is a hot topic in the golf course maintenance industry

US researchers have investigated the use of integrated pest management (IPM) and non-chemical management systems compared to conventional chemical pest control on putting greens at Bethpage State Park.

Communities around the world are increasingly demanding that golf courses be managed with few or no pesticides. Yet managers faced with operating their facilities under such constraints need information on how to maintain acceptable golf course turf. At the same time, those advocating pesticide restrictions need to be aware of the costs of implementing the policies and the resulting impacts on golf turf performance.

For these reasons, we designed a project to provide information on the feasibility and performance of putting green turf managed using Integrated Pest Management (IPM) systems or no chemical pesticides.

Our objective was to evaluate the aesthetic and functional performance of putting greens managed under various cultural and pest management systems for feasibility, biological/physical response and golfer satisfaction. The project explored total management systems, as practiced by turf managers, rather than focusing on individual technologies and isolated practices.

The work was conducted at the Bethpage State Park on the Green Course, which accommodates approximately 50,000 rounds of golf annually, has push-up soil greens that have been heavily sand topdressed for the last six years, and is typical of a high-use public course in the New York city metropolitan area.

METHODOLOGY

The experiment was designed as a 3x2 factorial, with three pest management and two cultural management regimes.

PEST MANAGEMENT

Unrestricted: All legal chemical pesticides were available for pest management (i.e. practices similar to a medium budget public golf facility). Preventative control of pests was a significant aspect of weed, insect, and disease management.

IPM: Pest management practices were determined by the specific needs of individual greens. Actions were based on scouting information, action thresholds and site

history. Cultural and biological approaches to prevent and minimise pest problems were emphasised, but any legal practice or pesticide was available.

When pesticides were deemed necessary, the least-toxic and most effective products were selected based on potential risk factors such as water quality impact, effects on non-target organisms, and toxicity to humans. In this system, acceptable turfgrass performance was not intentionally sacrificed. Therefore, it was sometimes necessary to select a more toxic method in order to maintain expected performance and to avert significant turfgrass damage or loss of turf. Prophylactic chemical treatments were used only when justified by significant site history of problems, weather conditions, labour force limitations, and lack of curative strategies that were acceptable in the risk assessment process.

Non-chemical: As in the IPM treatments, cultural and biological approaches to prevent and minimise pest problems were emphasised and decisions were based on the specific needs of individual greens. However, no pesticides registered in EPA class I (danger), II (warning), or III (caution) were allowed. The non-chemical treatment criteria were based on current restrictions for several municipally-owned golf courses and other turf facilities in the state.

CULTURAL MANAGEMENT

Current standard: Cultural practices currently employed at Bethpage State Park.

Alternative: The cultural practices in place at Bethpage were modified in an effort to reduce turfgrass stress and minimise pest problems, while striving to maintain minimum performance standards. Practices such as

increased fertility, double-cutting, and rolling were implemented if necessary to maintain these performance standards.

The experimental design resulted in six management systems. Each green served as a replicate, and we used all 18 greens of the Bethpage Green Course to accommodate

three replications of the six management systems.

System I: Unrestricted pest management; standard cultural practices

System II: Unrestricted pest management; alternative cultural practices

System III: IPM; standard cultural practices

Table 1. Standard and alternative cultural practices utilised on the Green Course's putting greens.

PRACTICE	STANDARD	ALTERNATIVE
Mowing height (bench settings; mowing with triplex units)	2.8 – 3.6 mm 2003 = 3.3mm	3.8 – 4.8mm velvet always at 0.130" 2003 = 3.3 mm (0.130")
Mowing Frequency	1 x/day 7 days/week	2x/day, 5 days/week 1x/day, 2 days/week
Rolling	Groove (except 2003)	Solid
Irrigation	Automatic 3am-4am	Manually activated 4.30am-6.30am
Hand watering	When wilting visible	Water known dry spots prior to wilting
Fertilisation	1/8 to 1/4lb.N every 2-3 weeks	1/8 to 1/4lb. N every 2-3 weeks+ 1/8lb. Amm. Sulfate. Approx. 60-70% of N supplied via organic sources, notably Sustane
Topdressing	Every 2–3 weeks	Weekly, no brushing
Rolling	1 x per week**	Up to 3x per week (if needed for ball roll)**
Vertical mowing	Occasional	Every 2-3 weeks except during stress periods**
Hydroject	Occasional	Every 3 weeks, May-Sept
Clean up pass	4x per week	2x per week (3x in 2003)

*Practices adjusted in attempt to attain >2.6m (8ft) ball roll distance.

** Practice seldom or never done in 2003 because of labour constraints.




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Evaluation of Reduced Chemical Management Systems for Putting Greens

◀ **System IV:** IPM; alternative cultural practices

System V: Non-chemical pest management; standard cultural practices

System VI: Non-chemical pest management; alternative cultural practices

System I was typical management for the Green Course, a quality, high-use public golf course. Systems III and V were the same management systems with restrictions on pesticide use. The standard and alternative cultural practices are summarised in Table 1. Practices were frequently adjusted during the season each year to respond to turfgrass performance and weather conditions.

After the first season, the greens in System VI were resodded with nine-month-old velvet bentgrass (SR 7200). Halfway through the second year, we conceded that we were unable to maintain acceptable conditions in System V, and we could not guarantee the survival of those greens.

Therefore, those three greens are now being managed with alternative cultural practices providing a comparison of traditional *Poa/creeping bentgrass* greens and velvet

bentgrass greens with non-chemical pest management.

Some cultural and biological practices were employed specifically over the three years to prevent or reduce pest problems. These practices were implemented on some or all of the non-chemical and IPM greens (when and where appropriate), such as: rolling greens in the morning to reduce incidence and severity of dollar spot; increased fertility to aid recovery from dollar spot injury; application of entomopathogenic nematodes; regular applications of a biological fungicide; manual removal of weeds; winter compost cover; green closure to reduce traffic and allow for renovation; phosphite product for prevention and alleviation of summer stress and decline; and standard fertility supplied with kelp-based materials.

PERFORMANCE AND PEST EVALUATIONS

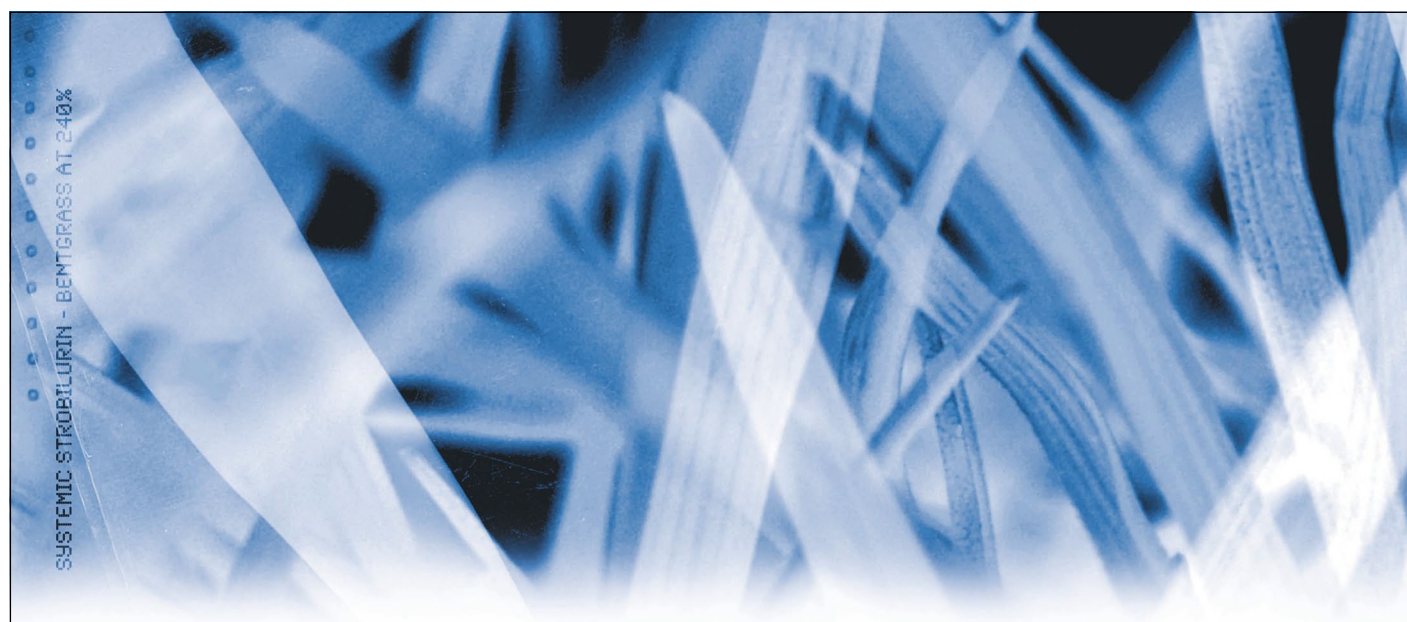
Putting greens systems were evaluated throughout each growing season for aesthetic and functional performance, pest occurrence,

species population dynamics, and tissue and soil nutrient content. Greens were inspected three to six times per week for signs and symptoms of disease-causing organisms, agronomic stress, insect pests, and weeds. Occurrence was mapped and quantified.

In the second and third year, most diseases were recorded by "percent area of the green over threshold", according to action thresholds agreed upon by both researchers and golf course personnel.

Additional insect monitoring techniques such as irritant sampling (soap flushes), cutworm pheromone traps, pine litter floatation and soil core examination were used at appropriate times to detect and quantify insect populations.

Visual quality of putting greens was assessed periodically using the NTEP rating system (1-9, with 1 = dead turf, 6 = acceptable turf and 9 = ideal turf). Ball roll distance was also measured periodically for adjustment of treatment practices. In addition, annual bluegrass populations were monitored once a month. ▶



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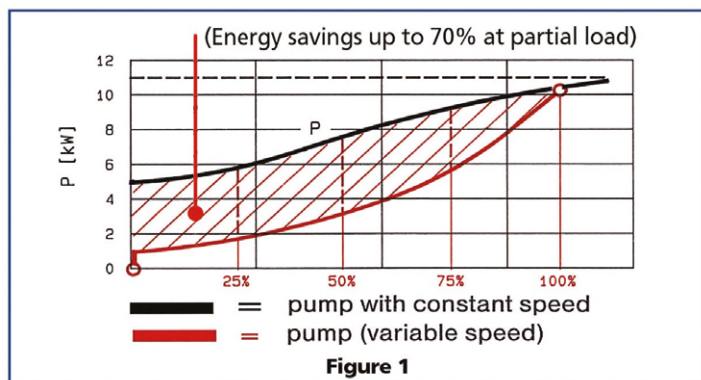
A new pumping station is a significant investment and is one we had to get right given that we are fully irrigating two golf courses. The quality of these pumps is world class. In New Zealand where we are asked to conserve power from time to time, these pumps allow us to do this.

The Hydrovar pump mounted unit gives us greater control and helped with the purchase decision. I have been impressed with the after sales service and support and have no problem recommending these units.

Brett Burgess
Course Manager
Taupo Golf Club

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Evaluation of Reduced Chemical Management Systems for Putting Greens

ECONOMIC ANALYSIS AND GOLFER SATISFACTION

To address the practical implications of our work, we are assessing the feasibility of each management system. Costs of labour and materials for each management regime were recorded for an economic analysis. Golfers were also asked for their perceptions of putting green quality and their opinions on pesticide use.

RESULTS

Putting greens are involved in at least 75 per cent of the shots in a round of golf. High quality expectations and low pest thresholds for these areas present a formidable challenge when reducing pesticide inputs.

In most cases we were able to maintain quality of IPM greens while drastically reducing insecticide and herbicide use, and to a lesser extent fungicides (Tables 2 and 3). Diseases and heavy traffic were responsible for low quality and sometimes death of non-chemical greens. Variable and severe environmental conditions explain much of the difficulty in managing diseases, whereas weeds and insects are not as clearly climatically influenced.

PESTS AND PEST MANAGEMENT

Throughout the study, dollar spot was the primary pest problem in all treatments and was the target of the majority of pesticide applications.

This disease severely reduced visual quality and performance of non-chemical greens and was responsible for the closure of four greens during the first year. The three standard culture non-chemical greens received an emergency chemical fungicide application in early August of the second season to mitigate dollar spot, and received two to three emergency applications per green in the third season to control dollar spot and other diseases.

It should be noted that regardless of pesticide use, some unrestricted and IPM greens had more days with some portion of the green over threshold for dollar spot than did the non-chemical greens. This does not relate to how widespread problems were on each green, but does demonstrate that some turf areas escape control even with full chemical availability.

Anthraxnose was also problematic mainly in the first year and on greens cut at lower heights, but was usually considered to have stemmed from turfgrass stress rather than acting as a primary pathogenic agent.

Rhizoctonia (brown patch) was a minor problem in the first year, problematic on two greens in 2002, and flourished in the third year of the study when hot, humid conditions persisted. A reduced risk fungicide was applied regularly on IPM and non-chemical greens and up to four chemical fungicides were applied to the unrestricted greens for brown patch control.

Fairy ring became a prevalent and sometimes severe problem on the non-chemical greens and some of the IPM greens in 2002, and continued into 2003. We associated its occurrence with greens that had been covered with compost the previous winter, and the velvet bentgrass sod that arrived with a significant thatch layer. The disease was often severe enough to create hydrophobic conditions and was managed with wetting agents, hydrojecting, and fungicides on the IPM greens.

Insects of significance were black cutworms and annual bluegrass weevils (ABW). In 2001, an application of a biological insecticide (*Heterorhabditis bacteriophora* nematodes) was targeted at second generation ABW control with the benefit of cutworm population reductions also expected. Nematodes were not

applied in 2002 because of their expense and apparent lack of efficacy the previous year.

It should be noted, however, that naturally occurring *H. bacteriophora* nematode-infected ABW have been detected at low levels in all years. The heaviest populations of ABW were observed in the collars and other higher-cut turf. We were fortunate that no damage occurred on the greens. However, if an entire course were managed without pesticides, ABW management could be a significant challenge in the northeast. In 2003, a reduced risk insecticide was used successfully for cutworm management on IPM and non-chemical greens.

Weed concerns in all years were dominated by crabgrass and goosegrass in the *Poa*/creeping bentgrass greens, and *Poa annua* was considered a weed in the velvet bentgrass greens. In 2002, goosegrass incidence was much higher in the standard cultural treatments as opposed to the alternative treatments. However, differences were not significant due to high variation among greens, and this trend was only seen in the non-chemical treatments in 2003.

Throughout the study, weeds were removed manually from IPM and non-chemical greens,

Table 2. Mean number of pesticide applications in Unrestricted and IPM pest management systems

YEAR	UNRESTRICTED	IPM-STANDARD	IPM-ALTERNATIVE
		(% reduction)	(% reduction)
2001			
Insecticides	2	1 (-50%)	1 (-50%)
Herbicides	1	0.67 (-33%)	0.67 (-33%)
Fungicides	11	8 (-27%)	7.67 (-30%)
Total	14	9.67 (-31%)	9.34 (-33%)
2002			
Insecticides	4	2 (-50%)	2 (-50%)
Herbicides	1	0.67 (-33%)	0 (-100%)
Fungicides	14	10.3 (-26%)	8.30 (-41%)
Total	19	12.97 (-32%)	10.30 (-46%)
2003 <i>Chemical pesticides applications only (not including reduced risk and biological pesticides)</i>			
Insecticides	2.0	1.0 (-50%)	1.0 (-50%)
Herbicides	1.0	0 (-100%)	0 (-100%)
Fungicides	11.2	8.7 (-22%)	8.0 (-19%)
Total	14.2	9.7 (-32%)	9.0 (-36%)
<i>Reduced risk product and biological control applications</i>			
Reduced Risk Insecticides	0	0	0.7
Reduced Risk Fungicides	2.0	4.0	5.0
Bio Fungicide	0	9.0	9.0

Table 3. Mean number of pesticide applications in non-chemical management systems in 2003

	STANDARD	ALTERNATIVE (velvets)
Chemical Insecticide	0	0
Chemical Herbicide	0	0
Chemical Fungicide	2.7	0.3
Total	2.7	0.3
Reduced Risk Insecticide	0	1.3
Reduced Risk Fungicide	7.0	3.3
Total	7.0	4.7
Bio Fungicide	13.7	4.3

and were treated by one annual herbicide treatment to all unrestricted greens. Some IPM greens were also treated with herbicides: four in 2001, two in 2002, but none in 2003. Note that both greens requiring treatment in 2002 were in the standard cultural treatment.

Weed populations in the non-chemical *Poa*/creeping bentgrass greens have been

increasing, and requiring more time to weed. In addition, the collar of one of these greens was treated with an herbicide in 2003 to reduce pressure of goose and crabgrass invasion.

The number of chemical pesticide applications is summarised in tables 2 and 3. In all years, most pesticide applications that were avoided on IPM greens occurred early in the season before dollar spot was widely established. The three non-chemical, standard culture greens received one emergency fungicide application in 2002, and two to three per green in 2003.

FERTILITY

The unrestricted pest management, standard culture greens received the least amount of nitrogen. The alternative culture unrestricted and IPM treatments received more N than their standard counterparts.

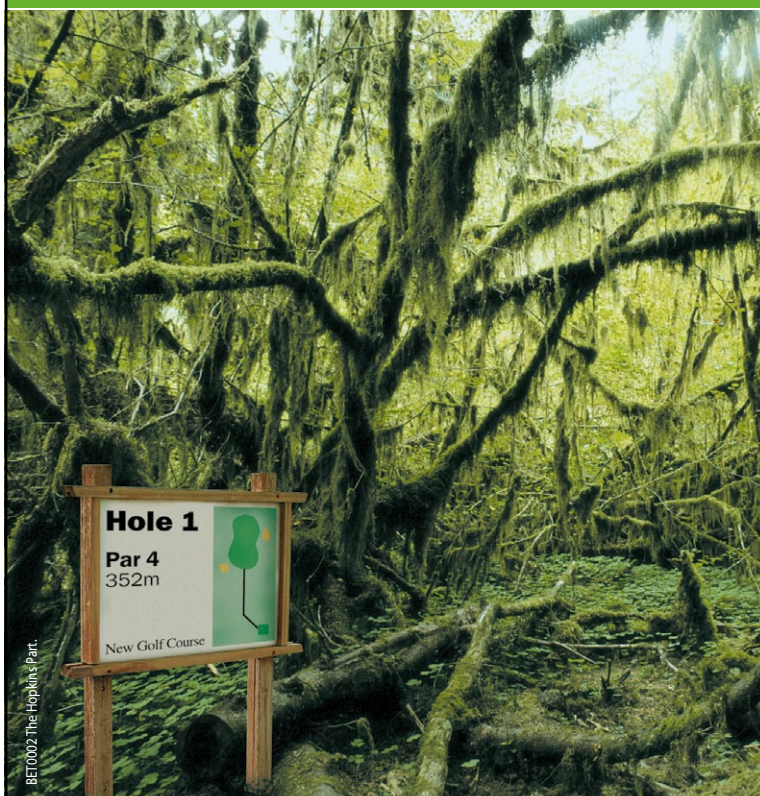
However, in the non-chemical treatments, alternative culture greens received less N. This is partly due to different nutrient requirements for velvet bentgrass, and because the standard culture non-chemical greens received extra

nutrients in an attempt to compensate for pest damage and poor turfgrass health and to promote recovery.

VISUAL AND PERFORMANCE QUALITY

In 2001, the quality of all greens was below acceptable in the early season but recovered by June. Quality of all non-chemical greens was unacceptable as of late August to early September, resulting in closed or very low quality greens for the remainder of the season. Quality of five of the six IPM greens equalled that of the unrestricted treatments throughout the season.

In 2002, all IPM and unrestricted treatments maintained acceptable quality throughout the season. The quality of non-chemical standard greens was better than 2001, but still very low in August. The velvet greens were unacceptable in August, but recovered and were acceptable for the rest of the season. In all treatments, quality of the alternative culture greens was usually higher than their standard culture counterparts.



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Evaluation of Reduced Chemical Management Systems for Putting Greens

◀ In 2003 all non-chemical greens were below acceptable quality for much of July and August and one velvet green was closed for a month. IPM and unrestricted greens were similar in quality for most of the season, but the IPM greens fared worse in 2003 and were sometimes slightly below acceptable quality in both May and August, and two greens were unacceptable in September.

Throughout the study we struggled to achieve ball roll values of >2.4m, but measurements were surprisingly low. Even the standard culture, unrestricted pest management systems that mimic normal Bethpage practices often did not produce the targeted ball roll distances. Obviously the use of triplex mowing may be a factor. However, we were still unable to achieve desired distances with topdressing and use of a growth regulator on a regular basis.

Ball roll distances were slightly lower in the alternative culture unrestricted and IPM greens, but not as much as might be expected based on N input. This raises an interesting question regarding nitrogen use and ball roll. Distances were moderately low for the non-chemical velvet bentgrass greens and very low for the *Poa*/creeping bentgrass non-chemical greens.

LABOUR

Increased labour needs are an obvious component of both IPM and non-chemical management. Basic scouting requires two to three hours per day and additional time when

specific measurements or sampling protocols must be done (e.g. insect floatations, *Poa* population counts).

Other practices essential to these management regimes are listed as follows with the approximate amount of labour hours required for 18 holes: rolling (5 hrs), topdressing (6-8 hrs), hydrojecting (6 hrs), verticutting (4 hrs), double cutting (4 hrs), hand watering (5-8 hrs), and manual weeding.

In addition, extra time was spent repairing and fine-tuning the irrigation system, mixing small individual batches of pesticides, and keeping maintenance equipment in excellent condition for proper IPM.

As might be expected, the unrestricted pest management standard culture system was the most efficient in terms of labour hours. Other labour issues to be considered are that many of these tasks must be performed early in the morning in order to be effective.

A few tasks were made more labour intensive by the nature of the experiment (e.g. mowing at two different heights). However, most labour needs would be multiplied when implementing one of the management regimes on all 18 holes of a golf course. The course supervisor estimates that a minimum of 9-10 employees would be necessary to replicate the IPM or non-chemical systems.

DISCUSSION

In 2001, no clear differences were seen between the quality of greens managed with

standard vs alternative cultural practices. In 2002, the alternative culture greens generally performed better in all pest management treatments. Less pesticide was also required to maintain alternative greens under both the IPM and non-chemical strategies.

Overall, quality was highest in the unrestricted pest management, alternative culture greens. Also, the quality of the IPM alternative culture greens was usually higher than that of the unrestricted standard culture greens in 2002. This might suggest that two management strategies are superior to those currently practiced on many public courses.

However, differences based on culture were less pronounced in the first and third year. It is likely that the wet weather conditions in 2003 outweighed any positive effect of alternative cultural management practices. In 2003, we utilised more of these biological and reduced-risk pesticides, but had less labour.

Greens that were covered with compost in winter greened up more rapidly in spring and produced significantly more clippings than the non-composted treatments. Compost applications likely increased the population of beneficial microbes in IPM and non-chemical greens and may have contributed to reduced dollar spot incidence.

However, the winter compost covers left layers in the soil profile and were associated with damaging fairy ring infestations and a high incidence of brown patch. Increased fertility from the compost in the early season ▶



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Evaluation of Reduced Chemical Management Systems for Putting Greens

resulted in healthy turf with high density and rapid growth that prohibited acceptable ball roll distances.

Several attempts were made to vertical mow and thin the turf, but we were not able to reconcile the desire for a healthy turf standard with the unacceptable ball roll distances in the low to mid 2m range. We decided not to use compost covers in the winter of 2003-2004, but the overall benefit of compost covers may be greater in areas with more intense and consistent snow mold pressure.

The spoon feeding approach on the standard cultural management greens provided acceptable turf quality, but we still had difficulty attaining ball roll distances in excess of 2.4m. Soil tests indicated a significant lack of potassium, although tissue tests did not reveal the deficiency.

The alternative cultural systems utilised Sustane 5-2-4 fertiliser to supply greater than 50 per cent of the nitrogen for the season. The remaining N was supplied with ammonium sulfate in 2002 and 2003 in an effort to reduce surface pH and thereby minimise certain pathogens of annual bluegrass associated with higher surface pH.

Also, elemental sulfur was applied (150 kg per hectare) to the velvet greens in an effort to reduce the pH. Theoretically, this would make the surface more hospitable to the velvet bentgrass and less so for the annual bluegrass.

Phosphite products were used to mitigate summer decline symptoms. We do not know if the observed benefits of these products are because of nutritional effects on plants and/or direct impacts on pathogens that might be associated with summer decline such as pythium root rot. Fertility on the velvet bentgrass was high in both 2002 and 2003, yet surfaces still appeared to be off-colour and thin for much of the season, especially in July and August.

The poor quality in 2003 may have been related to persistent, excessively wet conditions and a significant thatch layer. The major disease has been fairy ring which left depressions that affected ball roll.

Early in the project it was clear that pesticide use in the IPM systems could have been further reduced if it were easier for the superintendent to quickly respond to rising pest levels. A large spray tank makes small spot treatments difficult and inefficient.

Furthermore, sprayers at Bethpage are shared among courses and thus not always



Increased labour needs are an obvious component of IPM

available on short notice. These factors encouraged the superintendent to include IPM greens when spraying the unrestricted greens.

We are still analysing the full economic implications of each management regime. However, it is clear that a minimum of one or two extra employees would be required for a course to implement IPM and non-chemical management strategies. Golfers in our satisfaction survey were accepting of the greens quality in all treatments. However, we need to repeat the survey in stressful summer months.

In our study, it has been necessary to close some non-chemical greens each year. These conditions on a solitary golf course would undoubtedly be unacceptable and would result in loss of revenues.

The range of results over the three years reflect the variation of environmental conditions. In a wet year like 2003, cultural and biological methods for disease suppression are less effective. Management with few chemical pesticides continues to be a challenge during these summer months. We believe that pesticide use can be significantly reduced in some years without compromising quality. However, research is still needed to develop tools and knowledge to deliver consistent and reliable results with few or no chemical pesticides.

Lastly, this project has already filled a significant role of informing turfgrass managers, environmental advocates and policy makers

about golf course management with fewer pesticides. Discussion of this project has opened new dialog in many arenas where interested parties were previously adversarial.

An example of the positive impact is that Suffolk County (which borders Bethpage State Park) reassessed their pesticide restrictions and revised their policy to one which is more scientifically based.

The Suffolk County-owned golf courses had been banned from using chemical pesticides, with the potential to obtain up to three application exemptions per year. Through extensive discussions of this project and of basic principles of IPM, the diverse committee guiding implementation of the law decided to amend the law.

The committee adopted an IPM approach that now allows pesticide use when specific criteria are met including: research-based thresholds, local tolerance levels for pests and pest damage, site history, forecasted weather, and available management options.

ACKNOWLEDGEMENTS

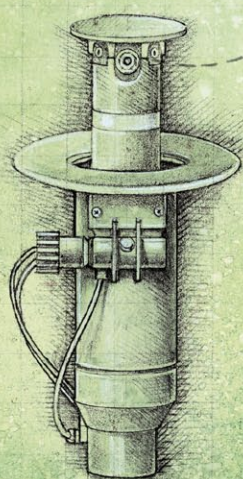
The AGCSA is grateful to the author and USGA Turfgrass and Environmental Research Online for allowing publication of this research in Australian Turfgrass Management magazine. USGATERO Issue 3, No. 4. Jennifer A. Grant, Ph.D is assistant director and community IPM coordinator, New York State IPM Program. Frank S. Rossi, Ph.D is a turfgrass specialist at Cornell University.



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DRAINAGE HASSLES DOWN THE CHUTE

Originally, drainage works conducted at Ringwood Golf Course in Melbourne had been minimal and rather ad-hoc. These small jobs often proved to be very labour intensive and were not an enjoyable task for the maintenance crew.

In the summer of 1999, the budget for drainage was considerably increased and extensive drainage works were started, usually with one or two holes completed each season. Obviously, with more work and a small team (five staff), something had to change.

Enter local drainage contractor Tony Olman who suggested the development of a chute to attach to the back of the course's tipping trailer to remove the manual handling aspect of the task.

The first prototype had low sides and a fixed chute, which meant that there was considerable spillage of materials and while the gravel application was excellent, the sand was slow and uneven and required considerable



A modified tipper trailer has made drainage issues a thing of the past at Ringwood Golf Course

effort to help it out of the chute. After some consideration, the chute was made detachable and the sides more than doubled.

Ringwood assistant superintendent Mathew Fitzgerald says the chute has been a highly effective tool and is in its sixth season of use. In that time staff at Ringwood have been able to completely drain the front nine, and the job now only requires just one or two staff to complete the job.

Says Fitzgerald: "This year (2004) we have just completed 800m of drains, dug and filled in five days. We have no intention of resting on our laurels, however, and there are plans to modify the chute again, adding a hydraulic gate that can be operated from the tractor which will remove the need for the current shovelling technique." 🙌

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RODNEY COOK - THE GRAND GOLF CLUB

Nickname: Cookie

Age: 41

Family: Wife Kerri, sons Ben, 10, and Lachlan, 7

Years as a superintendent: Too many

Years as an AGCSA member: 14

Current Club: The Grand Golf Club

Previous Clubs: Indooroopilly and McLeod

Years at current club: 8

Number of staff: 14

Course specs: 19 holes, 6114m, greens 328, tees and fairways Santa ana, Tifsport, 328 and common couch.

Favourite piece of machinery? Cushman.

Most embarrassing moment as a super?

Hopping off my four-wheel bike and seeing it roll past me into the creek.

Funniest moment you have seen on course?

A member with a motorised walk buggy letting it go ahead up a hill only for it to turn with the contours of the fairway and plunge down into the river. The large gentlemen then stripped off to his y-fronts to jump in to retrieve his car keys and mobile phone.

Plans for the course over the next two



The Grand superintendent Rod Cook

years? Installation of new wash down bay; revegetating of native grass areas; reconstruction of problem green; continual improvement of all areas on course.

Best advice you have ever received on the job? Even though you strive for perfection, you never achieve it.

One thing about your job you would change? Golfers.

Best part about being a superintendent?

Being able to get out of the heat!

Worst excuse from a staff member?

One of the boys hand cutting greens on one

particular green we really have to baby all year round. In transporting between greens the adjustment on the mower snapped and had gone from a 3mm setting to zero. He proceeded to cut the whole green at that height. He thought it looked funny.

Favourite spot on your course? 10th tee.

Career highlight? Australian Open.

The overseas course you'd most like to visit? St Andrews.

Favourite movie? The Castle.

Musician you aspire to being? Tom Jones (having all them women's undies thrown at you all the time).

Favourite sporting team? St George Illawarra.

Sporting team you despise? Collingwood.

Dream car? Mercedes S600.

Come the revolution, which celebrity would be first before the firing squad? Eddie McGuire.

Favourite golfer? Ernie Els.

Golf handicap? 21.

Beer or Bundy? Both. 🍺

21st Australian Turfgrass Conference and Trade Exhibition

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KEYNOTE SPEAKERS

Dr Louise Barton – University of Western Australia

Mr Jon Griffin – apFinancial

Dr Don Loch – Queensland Department of Primary Industries

Prof Ken Marcum – University of Arizona

Mr Terry Muir – Environmental Business Solutions

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The famous Road Hole bunker on 17 during various stages of renovation



R&A GETS A REFIT

Some of the most famous bunkers in world golf have received a major spruce up in the lead-up to the 2005 Open Championship to be held from 14-17 July, 2005.

The Old Course greenkeeping team at St. Andrews, Scotland have been busy reconstructing 94 of the course's 112 bunkers in recent months, with architecturally famous names such as Shell, Cartgate, Strath and Road Hole all renovated to varying degrees.

The reconstruction of the only hazards The Old Course has to offer, took the form of revetting the faces with turf. Some of the greenside bunkers have a face angle of 80° and fairway hazards 75°, with walls as high as 9 feet.

Old Course greenkeeper Peter Stewart says the process was arduous but enjoyable, and the renovations will ensure an even more difficult course for the professionals come the Open.

"Revetting is a traditional skill that will hopefully never be lost to the modern day greenkeeper," says Stewart. 🌱

BRANXTON CREATES TOURNAMENT HISTORY

Branxton Golf Club superintendent Aaron Ling and his fellow John Deere World Teams Championship teammates have created a little slice of history.

Following two days of competition, the Branxton team of Ling, Mark Hale, Andrew Hayward, Gary Anderson and Trent Bolton became the first international team to secure the prestigious title back in November.

The Newcastle based club finished with a two-day modified scramble score of 103 to edge out California's Hesperia Golf and Country Club by a single stroke at the Grayhawk Golf Club in Scottsdale, Arizona, USA.

The tournament featured 31 teams from six countries with each team comprising of a typical golf course management team – course superintendent, owner, manager, board member, and club professional.

The world final was the culmination of what was a year-long event. Preliminary qualifying tournaments were held throughout 2004, hosted by local John Deere Golf & Turf dealers with nearly 120 teams around Australia competing for the chance to represent their county. In total over 1400 teams from around the world took part.



2004 John Deere World Teams champions Branxton Golf Club

The team from Branxton Golf Club earned the right to represent Australia at the world final by firstly winning the regional tournament at Tallwoods Golf Club, which qualified them for the Australian final held at Moonah Links.

PGA Tour members and fellow Aussies Geoff Ogilvy and Mark Hensby stopped by the post-tournament celebration to congratulate

their fellow countrymen. Hensby, the 2004 John Deere Classic winner, noted that Australians now hold bragging rights to both John Deere tournaments for the year.

For more information on the John Deere World Teams Championship, contact a local John Deere Golf & Turf dealer on 1800 800 981. 🌱



CONFERENCE SPEAKERS FINALISED

The strong line-up of speakers grows as preparations for the 21st Australian Turfgrass Conference scheduled for Moama in June continue to progress.

In what is set to be one of the key turf industry gatherings of the year, a number of keynote speakers have been confirmed for the four day conference which starts on 6 June.

Those confirmed for the education sessions include:

- Professor Ken Marcum (Arizona State University)
- Dr Don Loch (Redlands Park Turf Research Group)
- Dr Louise Barton (University of Western Australia)
- Terry Muir (Environmental Business Solutions)
- Jon Griffen (APL Financial)

- Dr David Aldous (University of Melbourne)
- John Neylan (AGCSATech)
- Andrew Peart (AGCSATech)

Prof Marcum will talk on issues of salinity, while Drs Loch and Barton will outline their many and varied works in turfgrass research. The 2005 conference also sees the return of Terry Muir from Environmental Business Solutions, while Jon Griffen will present a talk on budgeting.

A number of key social events have also been locked in. Aside from the AGCSA Golf Championships to be played out on the Rich River course (superintendent Andrew Johnson), delegates will get the opportunity to experience The Great Aussie Beer Shed, paintball skirmish and fishing.

A registration brochure for delegates outlining the keynote speakers and social events is currently being finalised and will be available to the industry in the coming weeks. 🌱

APPOINTMENTS

Towards the latter part of 2004, Damian Fox shifted from The Australian Golf Club to take over as superintendent at Callala Bay Golf Club, previously under the auspices of contractors.

Mick Pilkington is now well into his routine at Shoalhaven Heads Golf Club. Pilkington has previously worked at Russell Vale, Studley Park and Shellharbour Links.

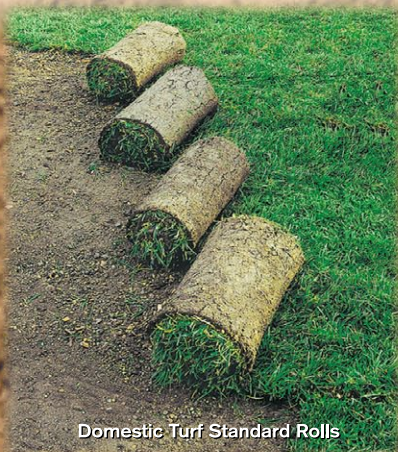
Daniel Metcalfe has joined superintendent Justin Sheehan as assistant at Beverley Park Golf Club. Metcalfe started the position last October.

Know of any new appointments?

Then contact Brett at the AGCSA on (03) 9548 8600 or brett@agcsa.com.au

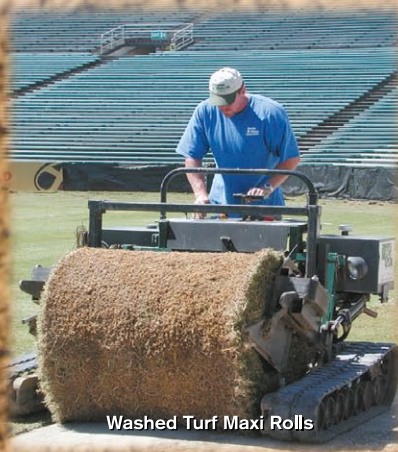


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ASPAC'S FINE TURF AERA-VATOR MT

ASPAC Golf and Turf has released the AERA-vator MT, designed for intensive fine turf aeration on golf course fairways, tees and greens.

The AERA-vator MT is ideal for regular use on the golf course. It improves the flow of air, nutrients and moisture on all turf surfaces. It also assists in the prevention and treatment of localised dry patch and is ideal for use on greens prior to dusting.

The unit can also be fitted with a seedbox for seeding of bentgrass, couch and all other grass types.

The AERA-vator MT has a needle tine length of 38mm and with 936 tines gives an aeration density of 595 holes per square

metre. The degree of shattering is easily adjusted by the PTO, and where aggressive shattering is not desired the PTO speed can be reduced or even turned off resulting in a more conventional spiking technique.

The patented swivel hitch means the unit can be used while turning, contouring to greens, fairways or collars.

The AERA-vator MT is very quick and can aerate 18 greens in around four hours, or can cover 6-8 hectares per day when used for broadacre work.

For a catalogue, CD-ROM or to organise a demonstration, call 1800 640 305.

DINT GOES HIGH-TECH

DINT Australia has launched a unique method of alerting superintendents and turf managers when their order has been processed.

In November 2004, DINT launched DINTXT, an SMS messaging service that tells superintendents that their orders have "left the building" via a text message to their mobile phone. The process has received good feedback and support from superintendents.

In keeping with this new technology, DINT is also launching a new purchasing program known as DINT Direct. This concept is an online ordering program, available Australia wide, which will enable clubs to order golf course hardware via the Internet, and take advantage of savings on certain products.

Initial information about DINT Direct has

been sent to many clubs around Australia already.

For those who want to find out more informational about this service, contact DINT on (02) 9313-5255, or register online at www.dint.com.au.

HANCEY'S OPENS NEW FARM

Hancey's Turf has opened a new turf production farm at Woodford, approximately 40 kilometres from Brisbane and the Sunshine Coast.

The new facility has been in the pipeline for a number of years and means the company can now supply the Brisbane and Sunshine Coast markets with any quantity of turf, and also Australia wide for larger turf projects.

Hancey's produces Wintergreen, Queensland blue, soft leaf buffalo and

Conquest couchgrass.

"We are having great success with Conquest due to its colour retention, minimal thatch and its ability to tolerate high wear especially on sporting surfaces," says company principle Graeme Hancey.

For more informational about Hancey's Turf Farms, visit www.hanceysturf.com.au or call 1800 133 064.

TOURNAMENT PLUNGER BALL WASHER

After 40 years of producing the Crank Action Model 88 ball washer, David Golf and Engineering has released the new Tournament Plunger ball washer.

The new ball washer has been 12 months in the making, and features only one moving part, making it easy to maintain and replace. It can be easily flushed and cleaned for longer life of all parts.

Other features of the tournament plunger ball washer include: powder-coated cast aluminium housing and lid; specially designed lid to eliminate clean ball from falling onto the ground; unique paddle design and nylon bristles for thorough cleaning; all stainless steel fittings; internal drain tube to eliminate over-filling; vandal-proof drain plug and gasket prevents any leaking; theft-proof stainless steel towel ring for ball washer towels; and full range of colour options available.

For more information on the ball washer, contact David Golf 1300 790 890, email dge@davidgolf.com.au or visit the website www.davidgolf.com.au.



NEW REPS FOR T&I

Turf & Irrigation (T&I) has appointed two new turf reps. Susan Gee started at T&I's Parramatta branch/warehouse on 4 January, joining branch manager Jan Kenny.

In the Brisbane/Gold Coast region, Jason Pollard has been appointed as turf rep, also taking up the position in January. Pollard is a former superintendent and has a diploma in horticulture.

MASTER THE GREENS WITH SCOTTS

Scotts Greenmaster liquid fertiliser range gives superintendents and turf managers controlled growth through spring and summer, and improved water retention and drought resistance through drier periods. This next generation of liquid fertilisers takes any guesswork out of caring for turf.

The Greenmaster range consists of four

fertiliser solutions designed to cover all seasons, including spring and summer, high N, autumn and NK formulations. Spring and summer and NK formulations contain trace elements to boost performance and growing efficacy.

For more information about the range of Greenmaster liquid fertilisers, contact Scotts on 1800 789 338 or visit www.scottsaustralia.com



Scotts' Greenmaster range of liquid fertilisers

GROUND PROTECTION MATS

Kennards Groundcare now has available for hire and sale ground protection mats from Altuna Mats USA.

The mats help to minimise damage to turf and landscaped areas. Altuna mats are used in a variety of applications such as golf courses and landscaping, saving the costs of ground restoration.

The rugged mats are made from 12.5mm thick polyethylene and can withstand vehicles up to 60 tonnes. Altuna mats are easy to use and lock into place to form a continuous solid work roadway or platform.

Contact Kennards Groundcare Sydney for more information (02) 9896 7485.

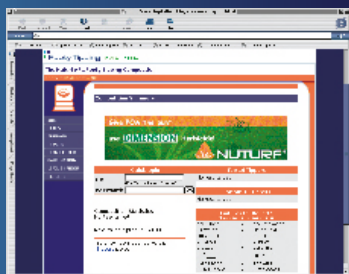


HAVE YOU SEEN THE AGCSA WEBSITE LATELY?

It's on again and this year the AFL and NRL footy tipping competitions, presented by NUTURF, will have a club vs. club component.

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AGCSA Member Benefits...

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.

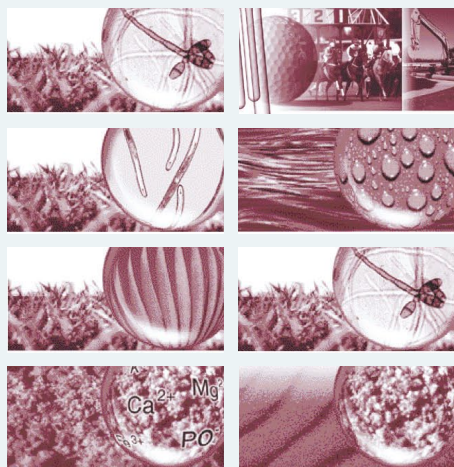
The new-look website features a special 'Members Only' section, where special offers available only to AGCSA members will appear. Members will also be able to update their contact details in this area.

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 new 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.



MEMBER BENEFIT FOCUS

Employment and Legal Service

The area of employment contracts has become an increasing minefield for superintendents and turf managers in recent times. The AGCSA has recognised this and has devised a guide to help organisations employ a superintendent or turf manager.

Such information is contained on the AGCSA website www.agcsa.com.au and follows through the steps that should be taken to employ one of the most important decision-makers at any club/turf facility.

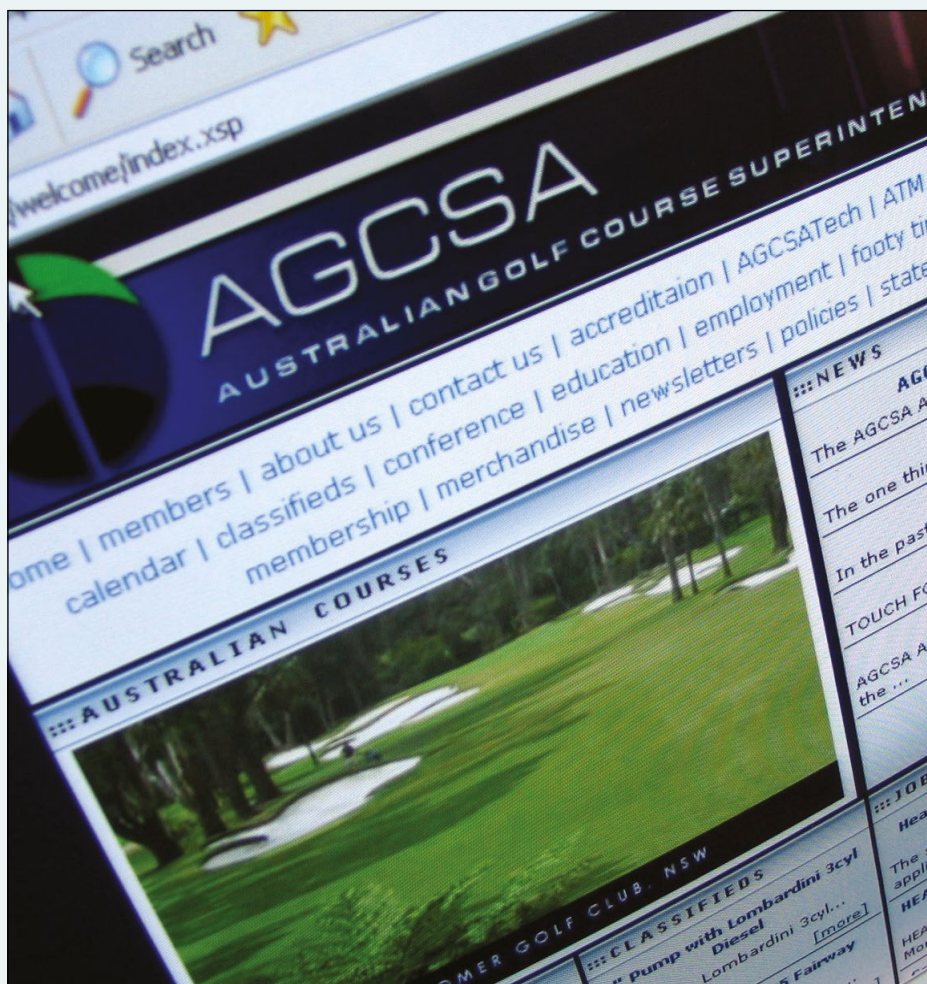
Available for downloading from the website is a sample employment contract, a must in today's working environment. For those superintendents and turf managers who haven't a contract (and you would be surprised by the number who don't) then a visit to this section of the website would be well advised.

As well as providing advice on contracts

and employment, the AGCSA also offers members access to a free legal service. Melbourne-based Madgwicks Lawyers will provide up to half an hour free legal advice on any subject for members, and for those who are interested in using this service only have to contact the AGCSA office on (03) 9548 8600 or email info@agcsa.com.au.

Also available is the popular Job Watch section. Head to the Job Watch page on the website where you can peruse the latest positions offered around the country and abroad. For those clubs wishing to place a 'positions vacant' advertisement, you can do so online or by calling the AGCSA office on the above number.

The AGCSA is committed to providing the most effective avenue for golf clubs to employ turf professionals and members who are seeking employment in this fine industry.



Other AGCSA 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

AGCSA MEMBERSHIP CLASSES

Golf Membership

Golf Course Superintendent.....	\$310
International Golf Course Superintendent.....	\$360
Assistant Golf Course Superintendent.....	\$277
Foreman/Ground Staff.....	\$130
Golf Course Maintenance Company.....	\$310
Consultant.....	\$310

Associate Membership

Sports Turf Manager.....	\$277
Company.....	\$277
Retired Member.....	\$130
Ground Staff – Non Golf.....	\$130

State Membership

NSW - New South Wales Golf Course Superintendents Association	\$77
QLD - Golf Course Superintendents Association of Queensland	\$88
SA - South Australian Golf Course Superintendents Association	\$65
TAS - Tasmania Golf Course Superintendents Association.....	\$120
VIC - Victorian Golf Course Superintendents Association.....	\$60
WA - Golf Course Superintendents Association of Western Australia	\$88

The Next Generation (Student Membership)

Golf and Non Golf.....	\$38.50
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Discount Sliding Scale
for joining of two or
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5% discount = 2-3 staff
10% discount = 4-6 staff
15% discount = 7+ staff

Membership Application Form

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City/Suburb: Postcode:

Position:

Club/Organisation:

Club Postal Address:

City/Suburb: Postcode:

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Mobile: Fax:

Email:

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: ____/____

Cardholder Name:

Address:

Signature:

Send completed application form and payment to:

AGCSA: Suite 1, Monash Corporate Centre, 752 Blackburn Rd, Clayton North, 3168, Vic
Phone: 03 9548 8600 Fax: 03 9548 8622 Email: info@agcsa.com.au

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A Field Guide to Australian Frogs	\$ 49.50	Manual of Grasses	\$ 99.00
A New Tree Biology & Dictionary (Two book set).....	\$170.50	Masters of the Links.....	\$ 60.50
A Practical Guide to Ecological Management on the Golf Course.....	\$ 60.50	Modern Arboriculture.....	\$141.90
An Illustrated Guide to Pruning.....	\$ 50.70	Native Plants of the Sydney District	\$ 88.00
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Australian Native Plants.....	\$ 85.00	Organic Control of Weeds.....	\$ 17.60
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Crop Weeds	\$ 71.50	Sportsturf Protection Manual - The Complete	
CSIRO Handbook of Australian Weeds	\$ 55.00	Guide to all Turf Protection Products.....	\$220.00
Destructive Turf Insect	\$155.00	Sports Turf & Amenity Grasses	\$ 85.00
Destructive Turfgrass Insect - Biology, Diagnosis & Pests	\$163.90	Sports Turf - Science, Construction & Maintenance.....	\$159.50
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Drainage for Sportsturf and Horticulture	\$ 38.50	The Committed to Green Handbook for Golf Courses.....	\$ 33.00
Ecological Golf Course Management	\$137.50	The Golden Age of Golf Design	\$148.50
Effluent Water for Turfgrass Irrigation (leaflet).....	\$ 5.50	The Golf Course -Planning, Design, Construction and Maintenance	\$148.50
Encyclopaedia of Australian Plants Vol 1.....	\$ 99.00	The Good Doctor Returns	\$ 49.50
Encyclopaedia of Australian Plants Vol 2.....	\$143.00	The Life & Work of Dr. Alister Mackenzie.....	\$135.00
Encyclopaedia of Australian Plants Vol 4.....	\$143.00	The Links.....	\$132.00
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Field Guide to Eucalyptus - Vol 2 - S.W. & S. Australia.....	\$104.50	Tree Maintenance - 7th Edition.....	\$115.50
Field Guide to Eucalyptus - Vol 3 N. Australia.....	\$170.50	Tree, Turf, Ornamental Pesticide Guide	\$ 66.00
Field Guide to Weeds in Australia	\$ 82.50	Trees - Contributions to Modern Tree Physiology	\$275.00
Flora of NSW Volume 3	\$108.90	Turf Irrigation Manual.....	\$137.50
Flora of NSW Volume 4	\$143.00	Turf Management for Golf Courses	\$295.00
For All Who Love The Game	\$ 25.00	Turf Spraying - A Practical Guide	\$ 27.50
Fundamentals of Turfgrass Management.....	\$121.00	Turf Weeds and Their Control (HB).....	\$185.90
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Golf Architecture	\$ 88.00	Turfgrass - Science & Culture.....	\$176.00
Golf Course Architecture - Design, Construction	\$170.50	Turfgrass Diseases & Associated Disorders	\$ 71.50
Golf Course Construction, Renovation and Growth	\$132.00	Turfgrass Irrigation Scheduling (leaflet)	\$ 8.00
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IPM Handbook for Golf Courses	\$137.50		
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VIDEO

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- A Strategic Approach	\$110.00

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Prices are subject to change without notice.

Turfgrass Management – Seventh Edition

By A.J Turgeon

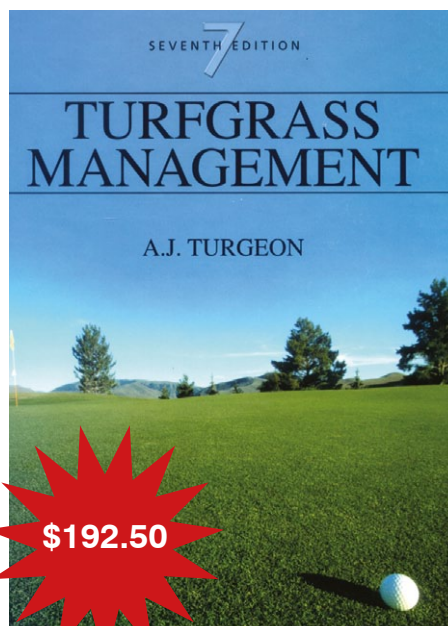
(Pearson Prentice Hall, 2004)

Now in its seventh edition, Turfgrass Management was first published 20 years ago and provides a comprehensive reference tool for turf management students containing a complete guide to the principles underlying turfgrass establishment and management.

In addition to updating information on cultural practices, as well as pesticides and other materials used in turfgrass management, improvements have been made in other areas of this edition including an expanded introductory chapter which delves into the history of turfgrass management and the turfgrass industry. As well, the chapter on turfgrass species has been updated, while there is a new section on water repellent soils.

Author Alfred Turgeon, who is professor of turfgrass management at Penn State University, describes his book as “a basic text” for beginning students of turfgrass science and management.

He adds that in covering the important features of turfgrass systems, interactions between and among system components, and principles of turfgrass management, his book



hopes to unlock some of the mysteries of turf and establish the role of cultural intervention.

For the benefit of students, illustrations are widely used to demonstrate concepts, processes and relationships of importance in turfgrass systems, while at the end of each chapter there are a series of questions which help to focus attention on key concepts outlined in the chapter.

Following the introductory chapter, the second section looks at the turfgrass plant and how it develops into a sustainable

turfgrass community, while the third chapter contains botanic descriptions, environmental adaptations, cultural requirements and uses of various turfgrass species.

Chapter four deals with the components of the environment, while chapters five and six delve into the array of primary and supplementary cultural practices for maintaining turf at desired levels.

The seventh chapter examines the important aspect of turfgrass pest management, including those involved in the management of diseases, weeds, nematodes, insects and large-animal pests.

While the role of pesticides is examined, the chapter is concerned with pest management to the extent that pest problems can be reduced, or in some cases, eliminated by providing conditions that favour healthy turfgrass growth. Included in this edition is an eight-page colour insert featuring common weeds, diseases and turf insects.

The penultimate chapter looks at propagation, while the final section attempts to bring it all together into integrated cultural systems for sustaining specific types of turf. 🌱

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GCSAQ

Here's hoping everyone had a great Christmas and the New Year has started well.

In Queensland we struggled last year with prolonged droughts until these were broken through November and December. These months saw great downpours with some clubs on the Gold Coast and Northern NSW areas receiving between 200-300mls in 24-hour periods. The damage caused can be pretty heartbreaking, but put in perspective this is nothing compared with what has recently happened in Asia.

The December rainfall chart in most areas around the state resembles a regular season and since then the rain has been fairly even, with beautiful days and a storm building up many afternoons dropping around 12mls of rain before fine weather the next morning.

Elsewhere in the state they have at least had some rain to wet the whistle, while not reaching the same totals as the Gold Coast area. Brisbane seems to get a little less than the Coast, Noosa having around 200mls with heavier falls tailing off the further north you went. Inland there was widespread flooding with some relief for parched country areas.

This wasn't enough to dampen the spirits of those who attended the Wet & Wild Christmas party sponsored by Scotts Australia.

Standout performance once again came from the Northern Rivers contingent who put in a sterling effort to stay to the end.

To the high profile superintendent also from this region, you will be receiving a bill from The Grand for one rubbish bin. Thanks to all members for making this a great day.

On the committee front, at present we are working on a membership brochure to attract more members for the GCSAQ and AGCSA organisations.

Our website is now up and running and is linked through the AGCSA website. We are in the final stages of having our desk pad ready for dispatch to members. On the education front, we are looking at self-assessment and the wording of the Greenkeeping Levels Job Description. The new AGCSA diaries are out and have been distributed to members. If you have not yet received one, contact Rod Cook.

Diary dates: 7 February (Gainsborough Greens); 7 March (Royal Pines Golf Club).

ROD COOK
PRESIDENT, GCSAQ.



GCSAWA

Welcome all to 2005. I trust that everyone has had a refreshing Christmas and New Year break of some sorts and are glad to be back among the action.

This year promises to be another great year and the GCSAWA executive committee is bubbling over with excitement to get it underway. To kick off this year's calendar we have the first round of the Golf Masters Cup to be held on 15 February at the revitalised Wembley Golf Complex.

The GCSAWA 2005 Management Challenge will again head south this year, as far south as the place where all the happy people reside. 2004 winners Alan Devlin and Secret Harbour Golf Club will host this prestigious event which he has promised us will be a cracker.

Nationally, I would like to put the call out to all our WA members to support the 21st Australian Turfgrass Conference in Moama, 6-10 June, 2005. This conference promises to be different in location but as exciting as previous years' events.

I realise it is early, however, it will soon be time for everyone, including the executive committee, to nominate people for the various AGCSA industry awards. If you have a nomination please give one of us a call.

By now all superintendent members should have received their tailor-made 2005 Turfgrass Management Diary courtesy of the AGCSA and GCSAWA.

This diary is a magnificent idea and manages to capture a huge amount of important information in an easily utilised format. Well done to Craig Easton.

As we speak, the GCSAWA is working feverishly to finalise a media release related to the Waste Audit for Perth Golf Clubs which was finalised in 2004. This document will be sent to numerous media outlets and is aimed at raising the awareness of this project and the environmental management strategies already in place on golf courses as well as being developed for the future.

Locally, it is with pleasure that I congratulate Brad Anderson (formerly Peninsula Golf Club) on his appointment at Sun City Country Club, as well as Eric Dennis (formerly Busselton Golf Club) on his appointment at Melville Glades Golf Club.

'POP' SOFIELD,
PRESIDENT, GCSAWA.



NSWGCSA

As I sat to contemplate the substance of this report, I leisurely sifted through the external meetings pages of my 2004 diary.

It was at this moment I truly recognised the significant impact legislative amendments and imposed utility restrictions have had on the future of our industry in this state. OH&S, water and environmental issues top the list with conformity an absolute essential.

For some superintendents, coming to terms with OH&S and environmental law only forms a small percentage of their daily headache. Spare a thought for those superintendents and staff that have been subjected to locust plagues, vandalism, lack of funds, poor water quality, aging facilities, amenities and equipment, negative local councils and the perennial stoushes and confrontations with obstinate captains, presidents, and greens committee chairmen.

Throughout the previous tumultuous year, superintendents in this state have risen to the occasion to implement active precautionary measures to control potentially negative outcomes in the line of duty.

It is only with constant diligent monitoring backed with clear and concise documentation that will, in the end, portray the true professional image this industry brims full of through its dedicated turf managers.

The Department of Environment and Conservation (DEC) has allocated funds to continue its ongoing environmental monitoring program of NSW golf courses. Peter Brown and Kate Lowe will revisit courses from early March that voluntarily undertook the option to partake in the environmental assessment pilot program.

The purpose of the second visit is to evaluate the physical, mechanical and documentation transformations golf clubs have implemented as a result of the original audit.

The DEC has sent letters to the councils of golf clubs that did not participate in the initial pilot assessment. The DEC has sent a strong recommendation that the councils' environmental development officer audits these clubs based on the majority of inadequacies found during the voluntary audit.

NSWGA chief executive David Allen and myself were involved in fruitful discussions with Sydney Water in November. The outcome was positive and more flexible for those clubs that had made initial applications for exemptions.

For those golf clubs that didn't make exemption applications and used potable water as a supplement, Sydney Water will be carry out individual assessments.

Combining all the legislative and resource concerns our industry faces, there is a greater industry threat looming on the horizon that has the capacity to uproot the foundation of 70 years of turf maintenance professionalism.

Turf maintenance contractors with glossy brochures and miracle cures claiming golf course maintenance costs and staff numbers can be halved and still maintain the same manicuring standard, are a 'bean counters' dream. Unfortunately, before considering all the real-time options, the 'bean counters' fail to recognise that they and the rest of the committee are still primarily accountable for all operational matters of the course.

I'd be interested to know what formal and ongoing policies on environmental protection and OH&S are applied by contractors? Who carries out risk assessments weekly? How is a task risk assessment performed on machinery repair when there is no specifically qualified tradesperson to assess it? The list of legislative compliance inadequacies is endless.

My advice to clubs contemplating contract maintenance is simple; besides 'don't', visit clubs that previously employed contractors and ask the hard questions. Also, remember you're now paying for a middleman that never existed before and he doesn't maintain the turf. What's obviously being missed to pay for his wage?

There have been two extremely important NSWGCSA days held in recent months. The golf course construction open panel seminar was a huge success with over 80 delegates attending the day. The panel included John Odell, Mark Parker and Mark Warwick heading up the panel with designers Jim Wilcher and David Walchel providing support. Congratulations must go to Andy Huggill on his efforts to host the day's proceedings.

The NSWGCSA Christmas cruise was also a success with 60-70 enjoying the beautiful Sydney Harbour for five hours. Congratulations to Scott Riley and Merve Hayward for successfully organising the day.

The next NSWGCSA gathering will be the Rube Walkerdon Championship day (venue tbc).

**CRAIG EASTON,
PRESIDENT, NSWGCSA.**



NZGCSA

Greetings from the 'land of the long white cloud'!

Going by the weather over the last couple of months, New Zealand has certainly lived up to its name. We have experienced another period of extreme weather with very little sunshine and cooler than average temperatures. Summer has yet to show its face.

Parts of the South Island, which were in the grips of a drought this time last year and battling irrigation problems and other related issues, are this year dealing with unprecedented rainfall which has resulted in flash flooding and, I guess, a fair amount of growth.

Elsewhere, the lower North Island is also battling inclement weather with flooding causing many problems. The top part of the country continues to deal with what is becoming a more tropical climate.

It's not all doom and gloom though. Plans for the 3rd Sports Turf Conference and Tradeshow are well in hand for the last week of May in Christchurch. Keep an eye on our website for more details www.nzgcsa.org.nz.

The NZGCSA has had a quiet period of late due to the holiday season, but we are back in full swing with the organising of the conference as well as the judging of our major awards that include the Fellowship Award and Trainee of the Year.

Unlike the AGCSA, we have not always had the greatest of relationships with associated bodies, such as the national golf association and club managers association, the latter of which is still in its fledgling state.

One of my goals this year is to sit down with these and other relevant bodies to discuss common issues in the hope we can enhance the way the game of golf is delivered in NZ.

One major issue facing NZ turf managers over the next year or so is the new HSNO regulations (Hazardous Substances and New Organisms). This deals with the transportation, storage and application of agrichemicals.

Superintendents in New Zealand are going to need what is called an 'Approved Handlers Certificate' by 1 January, 2006 to be able to purchase chemicals of any sort.

The next 12 months are going to be busy as they go about seeking this certificate, which in the first instance is achieved by completing a workbook. This is to prove you have a

working knowledge of handling chemicals.

The next step for a number or superintendents is to get their facilities certified for the purpose of storing and mixing chemicals. This, I believe, is where the problems will start. For those in New Zealand who have any queries, contact Brian Way at the NZSTI.

On that note, I would like to wish everybody all the best for 2005.

**BRETT BURGESS,
PRESIDENT, NZGCSA.**



SAGCSA

With the pleasantly damp and mild end to 2004 behind us here in South Australia, I hope 2005 will be a successful year for all turf managers.

A valuable tool to help achieve this outcome is the new AGCSA Turfgrass Management Diary. This innovative diary has been well put together and all associated with its development need to be congratulated. With future fine-tuning this will become an essential for all superintendents.

The SAGCSA has a busy calendar of events coming up in 2005. The first meeting will be held at Glenelg Golf Club (superintendent Daryl Sellar) on Thursday, 10 February. Theme for the day is the pre-winter conditioning of turfgrass.

Andrew Peart from AGCSATech will be a keynote speaker on the day, with other speakers confirmed including Phil Toy (T-Link), Darren Ferber (Aquatech) and Neil Crafter (Golf Course Strategies), who will no doubt entertain delegates with a presentation on his trip to the 2004 Ryder Cup.

A week later, Royal Adelaide Golf Club (superintendent Jeff Kaines) hosts the 2005 Jacobs Creek Open. I am sure Jeff is looking forward to hosting the Open for the first time after the event's successful tenure at Steven Newell's Kooyonga Golf Club.

As for other upcoming diary dates, lock in 13 April at Thaxted Park Golf Club (superintendent Andrew Blacker).

On a personal note, it was my good fortune to be in Sydney for part of the 2004 Centenary Australian Open. I was able to visit a number of Sydney's fine courses and I would like to thank all superintendents for being so generous with their hospitality and time, in particular Avondale Golf Club superintendent David 'I will do anything for an AGCSA book' Warwick for his organising skills.

PETER HARFIELD,

PRESIDENT, SAGCSA.



TGAA (ACT AND SURROUNDING REGION)

The TGAA ACT is constantly reviewing aims and objectives to keep it heading in a direction aimed to best serve members and the industry. As we progress into the New Year we ask association members to help us to make the TGAA better for you.

There are many scheduled events and fixtures planned for members this year but we need suggestions and feedback to provide a service that is indicative of needs. Please get in touch to let us know what you want! Contact either Gary Dawson (president) or Bruce Davies (committee) on (02) 6207 4624.

Anyone who may have missed the presentation day at Government House on the turfgrass trials, visit www.asf.asn.au/antep/index.html. Here there is a presentation by Michael Robinson on the process and results of the trials.

The local Canberra Institute of Technology Faculty of Applied Science has had excellent enrollments for the first semester of 2005. There has also been a good number of turf apprentices enrolled into first year courses.

If you have apprentices who you would like to enroll and have not yet done so, please contact Martin Crump on (02) 6207 1287. Don't leave it too late.

On a similar note, if you have any apprentices that you consider have completed all training competencies please contact the Canberra Institute of Technology 'User Choice' department to finalise matters.

Finally, the Ohio State University is searching for highly qualified turfies at trade level who are under 27 years of age who may be interested in working on golf courses in the USA. The Australian contact is David Goldie (phone 03 5254 2178 or email dngoldie@hotmail.com.) You can also contact the Canberra Institute of Technology.

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



TGAA NSW

2004 finished on a great note for the TGAA NSW with the annual Sportsman's Charity Luncheon. The Luncheon was a sell-out a month beforehand with 360 people attending.

Guests were entertained by MC Daryl Brohman, cricketing legend Doug Walters and rugby league's indomitable Tom Raudonikis. Also back by popular demand was comedian Mick Meredith.

There was some unique sporting memorabilia up for auction and great raffle prizes. Richard Calendar conducted the phantom race call and the winner of the door prize walked away with an autographed bar fridge full of drinks.

A donation from funds raised through raffles, race call and the auction has been donated to The Starlight Children's Foundation to 'grant a wish' for a seriously ill child. It was great to see so many people from the industry together enjoying each other's company and the great entertainment on the day.

Plans are well underway for upcoming events and first for 2005 is the golf day on Tuesday, 8 March at New Brighton Golf Club.

We are anticipating another successful year and look forward to catching up with many current and new members at our events.

For golf day bookings or further information about the TGAA NSW, call Jenny on 0408 441 119 or email tgaansw@bigpond.com.

GRAEME LOGAN, PRESIDENT, TGAA NSW.



TGAA (VIC)

Over 60 members travelled to Kardinia Park in Geelong on 7 December, for the TGAA Vic Summer Seminar which focused on the improved use of water within our work environments.

John Arnott, manager of the Geelong Botanic Gardens, spoke about how his organisation had redeveloped over 75 per cent of the original garden area under Sustainable Gardening Australia guidelines.

A range of audits was carried out as part of the planning and construction program, and as a result, water use in the new garden area has been reduced by over 90 per cent.

Aubrey Platt from the City of Greater Geelong then took delegates through some of the major sports turf redevelopment projects undertaken in recent years. A variety of turf surfaces have been developed from golf to football to baseball. Of major interest was a current proposal to re-use backwash water from a swimming pool site for irrigation of sports turf areas.

David Nickson and Michael Holohan gave the keynote presentation on the TGAA trial work being undertaken within the City of Greater Dandenong to compare the compatibility and effects of transitional and other ryegrasses on warm-season turf in southern Victoria.

While these trials are yet to be completed, there is some excellent information coming from them. This is a most interesting topic, and demonstrates the scope and amount of work still to do as our community grapples with the issue of reduced potable water availability.

Matt from Systems Turf Management gave a run down on the maintenance schedules at Kardinia Park Oval.

In particular, Matt was able to give a thorough explanation of how he and his staff were able to cope with the extreme weather conditions that affected the Geelong-Fremantle game during winter of 2004, and what renovation techniques were used to recover from that.

The final presentation was from Chris Lee from South East Water who updated the group on the likely effect of permanent water conservation measures.

There continues to be massive innovation introduced into our turf industry. There have been improvements in irrigation technology, turf species, turf selection and practices as a result of studies and trials.

These improvements have all been driven by a desire to reduce the environmental impact of our industry. However, still more needs to be done to convince some of the benefits of these improvements, and the benefits of the industry as a whole.

Work carried out by industry representatives in conjunction with water authorities and other interested parties during the water debate over the past 18 months has only reinforced this view.

This continues to be a critical time for all members of the TGAA. It was very encouraging to be present at a briefing by Deputy Premier John Thwaites and other state and local government representatives recently, and to hear their positive views on the importance of maintaining suitable sports surfaces for our community during these dry times.

They also recognise the importance of a healthy, forward-thinking turf industry. Quite clearly, our TGAA message is getting through to some of the right people.

JIM MARCHBANK

COMMITTEE, TGAA (VIC).



TGAA(WA) bursary winner Glen Burwood

TGAA (WA)

Welcome to the first TGAA (WA) column to appear in Australian Turfgrass Management. Over the course of 2005 I hope to keep everyone from around Australia informed with news and events that are happening here in WA.

2004 proved to be a very busy and successful year for the association, capped off with a Christmas lunch and bowls day at Mosman Park Bowling Club.

The year started in February with the President's Breakfast for members at the WACA, followed by an irrigation seminar in March. We had a turf machinery workshop at Burswood Golf Course in June, and held our AGM and golf day at Maylands Peninsula Golf Course in July.

In September we had an interesting field trip to Scotch College, St. Mary's and Hale School, as well as the annual sportsturf and wicket seminar in conjunction with the WACA. In October we supported the Turfest trade show at Challenger TAFE, and in November held our sponsors appreciation event at the ING Cup day-night cricket match at the WACA.

I would like to thank our members for supporting these events, along with many non-members of the association who attended our workshops and seminars. Thanks also to our sponsors for their support, making it possible to hold a number of free events for members.

I would also like to acknowledge the Lin Hambleton Bursary winner for 2005 – Glen Burwood from Australian Turf Industries. The bursary was introduced by TGAA (WA) to

provide one year's paid tuition at Challenger TAFE, Murdoch, to a turf or horticulture student undertaking studies at their own expense and not sponsored by their employer.

Behind the scenes, the TGAA (WA) committee has been working on a new constitution to reflect the current structure and operation of the association. This will be presented to members for approval at a special general meeting in February.

PETER RUSCOE, PRESIDENT, TGAA (WA).



After initially requiring funding by Sport and Recreation Victoria and the Whitehorse City Council, the Bennettswood Bowling Club in Melbourne's east was ready to replace one of its two grass greens with a synthetic.

After much discussion of what type of synthetic surface to lay and the large cost it would have to outlay (\$160,000 with the club paying a third), the club looked at other alternatives. Greg and Nick West from Greg West Greenkeeping invited a sub-committee to inspect other Tifdwarf greens around Melbourne. Returning with a positive report, the club decided to reconstruct the green with Tifdwarf.

The best part about it is that Sport and Recreation Victoria and the Whitehorse City Council are still funding two thirds of the project at a fraction of the original price of a synthetic. This is a great win for the turf industry. Being a drought tolerant grass, I am sure, helped.

At this stage there is no update on the warm-season grass trials at NMIT, except to say that the trial plots have been planted and we should know more come early autumn.

In other news, plans for Federation Week in Bendigo have been finalised. Anyone who is interested in going, call Allen Elliot on 0408 534 689 for accommodation.

BILLY HAMSHERE, VGA COMMITTEE.



As the year opens and having sighted with disbelief the events of Boxing Day, one can only take stock of the most important things in life - family and friends. On behalf of the VGCSA may I extend our heartfelt thoughts

to all of our Asian neighbours who have been affected by this tragedy. It will be one of the VGCSA's missions this year to encourage organisations connected to the turf industry to dig deep to assist the rebuilding process.

On a more cheerful note, the Victorian Golf Association (VGA) has again announced it will be supporting a scholarship for a Victorian superintendent to participate in the upcoming Turf Researcher's Conference in Wales.

This is the second time the VGA has put forward this proposal, which was successfully applied for four years ago by Mick Russell, then at Werribee Park. Judging by his response upon returning from that conference in Canada, we had all better update our résumés in anticipation of the nominations later this year.

The VGCSA held its final meeting for 2004 at the Patterson River Country Club on 13 December. Funnyman Marty Field entertained a group of 50 during dinner which was followed by a general meeting and golf presentations.

Overall winners: David Goldie, Matt Scott, Casey Johnson and Darren Green; Nearest the pin: Lincoln Coombes (Cape Schanck Resort) and Mick Love (Royal Melbourne). Longest drive: Brett Chivers (Keysborough).

A special mention to Patterson River superintendent Michael Riordan, for not only presenting his course in first class order, but allowing the VGCSA to hold the meeting there on short notice.

The first VGCSA gathering for 2005 will be at Keysborough Golf Club hosted by superintendent Brett Chivers on 22 February. The outline of the day will be education during the morning and golf or a course inspection in the afternoon.

There will be much interest in the day's presentations, no more so than the transformations that have taken place in recent times under the leadership of Brett and his team. Most notably, the introduction of Santa ana that now covers most of the fairways, and the work implemented on the bunkers that has returned them to their original sand belt appearance. Having played Keysborough on many occasions it is pleasing to see this prestigious club finally moving into a progressive period.

The annual managers/superintendents golf challenge has been moved to March at Riversdale Golf Club. As this event is all about who has the superior golfing prowess, the superintendents will again be trying to pry the managers' firm grip from the perpetual trophy,

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