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Turfgrass



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MANAGEMENT JOURNAL

Giant steps

Showgrounds set for AFL debut

East meets West

Royal Melbourne's East
Course transformation

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COVER STORY: Sydney Showgrounds takes Giant steps

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At the end of May, the Sydney Showgrounds will join the AFL elite when it hosts its first Greater Western Sydney home game against Essendon. Over the past year the ground has undergone a major redevelopment both in the stands and on the turf and ahead of its debut fixture ATM editor Brett Robinson looks back at a challenging yet rewarding period for recently appointed head curator Terry O'Keeffe.

COVER:

Commonwealth Golf Club, VIC:

One of Melbourne's iconic sandbelt golf courses, Commonwealth Golf Club, will host the revamped Toro AGCSA Golf Championships during the 28th Australian Turfgrass Conference. Pictured is the par 4 18th. **Photo: Brett Robinson.**

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East meets West

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Having already undertaken groundbreaking work in the lead-up to hosting last year's Presidents Cup, the mountain of reconstruction and re-grassing work continued unabated at Royal Melbourne Golf Club this past summer. Course superintendent Richard Forsyth reviews the changes made to the remaining 11 East Course holes which signals the end of more than four years of major course improvement works.



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Ex-pat Australian Cameron Thompson looks back on a hugely diverse and fascinating golf course management career which has taken him to the US, the Caribbean, the Middle East and now China where he is director of agronomy for IMG.

Recycling AMI Stadium

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It is being dubbed the largest turf recycling project ever to be carried out in New Zealand. ATM talks to Chris Lewis about an ambitious four month project to harvest turf from Christchurch's earthquake damaged AMI Stadium and the efforts to redevelop the city's rugby league ground into a 17,000 seat arena, complete with new playing surface.



COLUMN

Grass-roots with John Neylan

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John Neylan needs little introduction to ATM readers and over the past 30 years he has forged a name as one of the most prominent agronomists in Australia. Starting this edition, John kicks off a regular column which looks at issues of the day affecting course superintendents and turf managers. In this edition John looks at the eternal quest to control that ultimate 'weed' *Poa annua* and says superintendents should take a more holistic approach to its eradication.

CONFERENCE GUIDE

Welcome to Melbourne

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The Melbourne Convention and Exhibition Centre will play host to the 28th Australian Turfgrass Conference and Trade Exhibition from 4-8 June. Combined with this year's International Summit, this year's event is set to be huge and once again ATM will again act as your official guide. Here we review the week ahead for delegates, including a rundown of education sessions, keynote speakers, trade show exhibitors and AGCSA Award finalist profiles. See you in Melbourne!

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Benchmarking the benchmarks

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Senior agronomist Andrew Peart reviews his recent trip across the Tasman to compare AGCSATech's golf course benchmarking methods to those used by the New Zealand Sports Turf Institute.



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The Pulse asks superintendents what changes they have made to their irrigation system in recent times and what these have enabled them to achieve in relation to course presentation and irrigation efficiencies.

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DEEDI senior research scientist Matt Roche looks back at the community sportsfield studies (HAL Project TU08018) which have come to an end after nearly four years of R&D activities.



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Phil Ford outlines the results of a trial to ascertain the winter evapotranspiration rate of couchgrass in comparison with couchgrass oversown with perennial ryegrass or *Poa trivialis*.

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Contributors to Australian Turfgrass Management Journal Volume 14.3 (May-June 2012)

Peter Boyd (NZGCSA); Lyndel Conway (AGCSA); Allan Devlin (Secret Harbour); Ben Evans (Bardwell Valley GC); Phil Ford (University of Ballarat); Richard Forsyth (Royal Melbourne GC); Peter Frewin (AGCSA); Dr Richard Gibbs (STANZ); Tim Hicks (Thurgoona CC); Matthew Holmes (Turf Australia); Chris Lewis (Terrafirma Turf, NZ); Peter Lonergan (GCSAQ); Craig Molloy (NSWGCSA); Colin Morrison (Flinders GC); John Neylan (Neyturf); Terry O'Keeffe (Sydney Showgrounds); Andrew Peart (AGCSATech); Nathan Reynolds (Morisset CC); Trevor Ridge (Sawtell GC); Matt Roche (DEEDI); Des Russell (GCSAWA); David Scaife (Bonnie Doon GC); Sam Sherriff (SAGCSA); Tony Smith, (TGCSA); Simone Staples (AGCSA); Cameron Thompson (IMG); Nathan Tovey (TGAA VIC); Jim Vaughan (Turf Queensland); David Warwick (Avondale GC); Jenny Zadro (STA NSW).

How far we have come

In March, the Australian Golf Course Superintendents' Association announced that it had set up a subscription to the Michigan State University's Turfgrass Information Centre (TIC) for all members. If you haven't had the chance to search through what is the world's largest online turf industry information resource, then do yourself a favour and log in.

Being a history buff and obviously editor of the publication you currently hold in your hands, some of the more intriguing content contained within the TIC is the full text versions of some of the industry's formative publications. Among them is 'The National Greenkeeper', first published in 1927, which was then the "official organ" of the just formed National Association of Greenkeepers of America (NAGA), the forerunner to the GCSAA.

With the 28th Australian Turfgrass Conference and Trade Exhibition in Melbourne now just weeks away, one of the interesting articles I came across was a report from the May 1927 edition which reviewed that year's Chicago Golf Show. The show formed part of the inaugural annual meeting and convention of NAGA and it just so happened to feature legendary Australian professional and then nine-time PGA Tour winner Joe Kirkwood entertaining show delegates with his famous trick shots.

In a highly entertaining review of the show (it seems greenkeepers had just as good a sense of humour back then as they do now), the authors poke plenty of fun at the overeager sales reps (dare I quip that nothing has changed there either...) and outline some of the "many new inventions" from the two dozen companies exhibiting their wares.

Among the innovative products to wow greenkeepers back in 1927 were the intriguing 'Electric Worm Eradicator', a compost steamer and a soil shredder. Much fuss was made about the special hoist on the Toro tractor and five-gang hitch which raised all cutting units off the ground and elevated the end sections for easy transportation, while the Jacobsen stand featured "an innovation to most greenkeepers" – a motorised walk-behind greens mower. The Buckner salesman proclaimed that fairway watering systems would be the next big thing to impact the presentation of golf courses and many eyebrows were raised at the "entirely different" herringbone reel design on the Worthington Mower Company's fairway units.

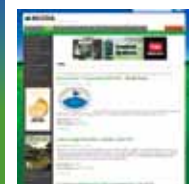
Flicking through this year's exhibitor listings, which form part of this edition's guide to the 28th Australian Turfgrass Conference, it's amazing to think 85 years on the variety and quality of products now available to the modern day turf manager. Regardless of whether these have made the art of greenkeeping easier or harder (and I'm sure many superintendents and turf managers would mount a strong case for the latter due to the heightened expectations they face nowadays), it is still impressive to think of just how far the industry has progressed and the role trade companies have played in advancing the way we manage our turf facilities.

As well as containing your Melbourne conference guide, this edition sees the welcome return of a familiar face. John Neylan kicks off his regular column 'Grass-Roots' by looking at the rather timely topic of *Poa annua* control, while elsewhere Royal Melbourne course superintendent Richard Forsyth recounts the recent works to the East Course which have brought to an end a mammoth four year period of course improvement works.

I look forward to seeing you all in Melbourne and please don't hesitate to corner me and discuss any ideas or feedback relating to ATM. In return, I'll be delighted to discuss, ad nauseam, the All Blacks' splendid victory at last year's Rugby World Cup! Enjoy the read...



Brett Robinson, Editor



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Summit puts AGCSA in the international spotlight



I'm not sure where the time has gone but we are now well into autumn and the 28th Australian Turfgrass Conference and AGCSA Annual General Meeting are fast approaching. It would be nice not to have to comment on the weather in one of these reports, but Mother Nature continues to wreak havoc on parts of the country. As I write this, Western Australians continue to tip dust from their rain gauges while those in south east Queensland have again had more than their fair share as recently reported via the AGCSA's weekly email newsletter 'The Cut'.

I recently had the pleasure of attending the Golf Industry Show (GIS) in Las Vegas as a representative of the AGCSA. It was a very busy week but proved a great opportunity to meet with like-minded people from other associations all over the world.

The Australian presence was everywhere with many superintendents making the trip across (not sure if the destination had anything to do with the large turnout or whether it was just coincidence!) After a quick walk around the trade show it was very evident that Australia is a prominent supplier of turf management products to the world with the likes of e-par, Graden, GreenCare and TruTurf on display – something we should all be proud of.

During the show, the AGCSA, in partnership with Toro Australia and Globe Australia, hosted a 'happy hour' for those Australians that made the trip. I am pleased to report nearly 80 attended and it was great to see some of the 'ex-pats' now based all over the world in attendance as well. The evening was a huge success and it is hoped that this may become a regular event when the GIS is at a West Coast venue.

At the AGCSA's February Board meeting and following subsequent discussion with Ted Baker

and Peter Schumacher, it has been agreed that the AGCSA Board trade representative positions will cease at the AGM in June. The board felt that a change of direction was required in dealing with trade members. Further details will be advised in due course, but one of the key objectives in my role is to improve and foster relations with trade members.

The Board's intention is to communicate with all trade members on a regular basis via an email newsletter, coupled with face-to-face meetings between the AGCSA and all trade segments within the industry. The Board also intends to establish a trade focus group to engage all trade members to ensure that we are meeting objectives. I would like to thank all those trade members who in the past have taken the time to represent the trade at AGCSA Board meetings.

COMING OF AGE

As I walked into the AGCSA office the other day, my eye happened to glance a couple of framed documents hanging on the wall. One was an old label from Turmat (for the young ones Turmat was an herbicide used for *Poa annua* control) and the other was a letter detailing the registration of a company – the Australian Golf Course Superintendents' Association.

It is hard to believe that on 1 August 2012 the AGCSA turns 21 – I was unaware that the AGCSA and I share a birthday! In my day your 21st was always seen as you're 'coming of age', but in modern times it doesn't have the same significance as it did all those years ago. In saying that, however, it is a major milestone in the AGCSA's history and it is refreshing to think back to the people that had the conviction and presence of mind to embark



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on the journey, setting up what is now a leading association not only in Australia but in the eyes of the rest of the world.

On the weekend prior to the upcoming conference, the AGCSA is proud to host the major superintendent associations of the world as they converge on Melbourne for the International Summit. At this stage there will be representatives from the GCSAA, BIGGA, Canada, New Zealand and even Norway.

The object of the summit is to meet and discuss the many issues that we all have in common. Given the significance of 2012 in the AGCSA's history, it is fitting that in the days preceding the conference in June the focus will be on our great association and Melbourne. To those international representatives making the long journey Down Under, we thank you and welcome you to Australia and trust that you will enjoy your short time with us.

I look forward to catching up with you all at the 28th Australian Turfgrass Conference and Trade Exhibition in June and should you have any issues, suggestions or feedback about the AGCSA and its activities, do not hesitate to contact me on 0418 593 072 or email peter@agcsa.com.au.

MEMBERSHIP UPDATE

The AGCSA membership drive for the 2012/13 year is in full swing. In the last 12 months, with the support of our members, the AGCSA has launched the 'Stop Take 5' OH&S initiative, completed a three-year bentgrass variety trial and provided access for all members to the Michigan State University's Turfgrass Information Centre.

In the coming year the AGCSA will conclude its 12-month golf course benchmarking project and continue with the groundbreaking golf course biodiversity and carbon benefit study.

To continue accessing the benefits available to AGCSA members, please forward any updates of your contact details to AGCSA membership manager Lyndel Conway on 03 9548 8600 or email info@agcsa.com.au, or come by the AGCSA trade exhibition stand during the Melbourne conference.

LYNDEL CONWAY
AGCSA MEMBERSHIP MANAGER

CORRECTION

Australian Turfgrass Management Journal wishes to highlight an error that appeared in Phil Ford's research article – **Winter clipping rates of turf-type perennial ryegrasses** – which appeared in Volume 14.2 (March-April 2012) pp44-46. In the note under Table 1 on page 44, it states that 1mm of mowing yields around 500g/m² of fresh clipping weight. That should have read 5g/m². Phil Ford and ATM apologise for this error.



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In June 2010, the NSW Government, the Australian Football League and the Royal Agricultural Society of NSW announced the upgrade of Sydney Showground's main arena which would transform it into the new home ground of the Greater Western Sydney franchise. The redevelopment has seen seating capacity increase to 25,000 and the installation of a new Legend couchgrass playing surface

At the end of May, the Sydney Showgrounds will join the AFL elite when it hosts Greater Western Sydney's inaugural home game against Essendon.

Over the past year the ground has undergone a major redevelopment both in the stands and on the turf and ahead of its debut fixture ATM editor

Brett Robinson looks back on what has been a challenging period for newly appointed head curator Terry O'Keeffe.



Giant steps for Sydney Showgrounds

When Sydney Swans midfielder Kieran Jack slotted the first goal of the 2012 season against AFL debutantes Greater Western Sydney (GWS), there was one fan among the red and white faithful gathered at Sydney's ANZ Stadium that night who felt just a few divided loyalties as he went up in celebration.

As Terry O'Keeffe jokes a few weeks later while sitting in the stands overlooking a beautifully striped main arena at the neighbouring Sydney Showgrounds, he feels just a tad confused. While first and foremost a passionate member of Parramatta's blue and gold army – just please don't ask him about the Eels' current NRL form – ever since the Swans arrived on the scene in Sydney in the 1980s he has been a regular follower of AFL.

Spending the past eight years working on the groundstaff at the Sydney Cricket Ground (SCG) saw O'Keeffe's affinity for the Swans develop even further and when defender Leo Barry took that incredible pack mark to guarantee the Swans the 2005 AFL premiership over West Coast, there was no fan more stoked than O'Keeffe.

Just recently, however, that allegiance to the Swans has been put to the test. Although enjoying his time at the SCG where he was in charge of preparing the ground's hallowed outfield, in mid-December 2011 it was announced by the Royal Agricultural Society of NSW (RAS) that O'Keeffe had

been appointed to the newly created role of grounds curator at the Sydney Showgrounds.

With the Showgrounds main arena (or Skoda Stadium as it will be called on game day) set to become the new home ground of the AFL's 18th and newest franchise from round nine of the 2012 season, O'Keeffe was brought on board to oversee the management of what is without doubt one of the more unique arenas in the country and ensure that is of a calibre befitting one of the competition's premier venues.

Since his appointment, everything 'GWS' has dominated O'Keeffe's life and all that will come to a head on 26 May 2012 when Kevin Sheedy's men face Essendon in front of what the AFL will be hoping is a capacity crowd.

GIANT UNDERTAKING

While the Giants are still very much feeling their way in their debut season and will more than likely do so for the next few years, the same can't be said of O'Keeffe. Having started his new post just a little over five months out from the Giants' first home game, O'Keeffe has had to literally hit the ground running.

On 19 December 2011, the very day he started his new position, the final maxi-rolls of washed Legend couchgrass sod were being laid by contractors M. Collins and Sons, completing just



one part of a multi-faceted redevelopment of the ground in order to get it to a standard to host AFL.

The Sydney Showgrounds main arena was originally built and opened in 1998 as Australia's premier baseball venue. It hosted the sport during the 2000 Sydney Olympics and in the year following became the home ground of the Canterbury Bulldogs. The NRL side's tenure there was short-lived, however, and aside from hosting lower level AFL NSW matches and metropolitan league soccer matches, including the occasional A-League pre-season match, the main arena has rarely been in the sporting spotlight since.

The upgrade to the Showgrounds, announced by the New South Wales Government, the AFL and RAS in June 2010, has entailed getting rid of an existing grass embankment at the northern end of the ground and constructing new stands to increase seating capacity from 13,000 to 25,000. New corporate hospitality facilities, bars and function spaces have been added, as well as new media facilities, improved audio and sound systems and one of the country's largest electronic scoreboards.

Out in the middle, the main arena has been extended by 15 metres and reconstructed with a new sand-based profile and Legend couchgrass playing surface (the Showgrounds uses StrathAyr's MegAyr reinforced turf system). The new surface was reconstructed in two stages, starting last spring with the northern end. Following Sydney Equitana, a four-day horse event in November, the remaining southern end was then transformed and after a short grow-in period the ground was officially handed back to the RAS on 4 February 2012.

UNIQUE VENUE

With a brand new, ready-made surface to manage, you would think that O'Keeffe's job would be pretty plum in the lead up to the Giants' first home game. However, the Sydney Showgrounds is no ordinary venue and far from sitting back and watching the grass grow the past few months have been a very steep learning curve for O'Keeffe.

While its calendar of sporting events has, in the past, been pretty light (it also doesn't host any summer sport), where the Sydney Showgrounds literally takes centre stage is for concerts and the annual Sydney Royal Easter Show. The Showgrounds currently hosts two of Australia's most popular music festivals during the summer – The Big Day Out on Australia Day and Soundwave a month later – while every Easter it is the main staging ground for the country's largest and longest-running agricultural show.

Attracting over a million visitors for a two week period, the Royal Easter Show, which is organised by the RAS, is nothing short of a Sydney institution. The show's history dates back to the 1820s and after residing at Moore Park for 115 years, in 1998 it shifted across to its current home at the Showgrounds.

For the duration of the show, the Showgrounds arena hosts everything from showjumping, barrel racing, rodeo, horse and cart races, stock drives, trail bike jumping, police demonstrations as well as night-time arena spectacles complete with fireworks and pyrotechnic displays. With 600kg-plus beasts leaping, bucking, galloping and racing over the surface for the best part of 14 days, by the end of the show the main arena barely has a blade of grass left on it.

And therein lies the challenge facing O'Keeffe. With the Giants now calling the Sydney Showgrounds home, managing the surface has been taken to a completely different level. Whereas in the past the surface would be renovated post-Show and left to slowly recover over a 6-8 week period, the ground now has to be ready to host elite-level AFL within a matter of weeks following the Show. Throw into the

In mid-December 2011, Terry O'Keeffe was appointed to the newly created role of Showgrounds head curator. O'Keeffe brought with him more than 25 years experience, including working the previous eight years at the Sydney Cricket Ground





To assist management of the redeveloped main arena, O'Keeffe was quick to bolster his equipment inventory upon arrival. With the support of the RAS, he has purchased a number of big ticket maintenance items, including a Toro Reelmaster 5610 fairway unit (top), an Amazone Groundkeeper 180 (middle) and a 70hp Kubota tractor (bottom)

mix a couple of massive concerts which each attract up to 50,000 punters and managing the playing surface at the Showgrounds isn't exactly for the fainthearted.

"Yeah, I've heard the word 'challenge' a fair bit since I started here," laughs O'Keeffe. "I think I said in a press release that the RAS put out just before I started that I was one to like challenge and I reckon I should have implemented a fine system every time someone came up to me and said 'Gee you've got your work cut out here'.

"But that's what I'm here for. I do love a challenge and the thing that makes this such an interesting job is that we have such a great variety of events on the main arena. I can't think of any other ground that would go from hosting music festivals to one of the country's biggest agricultural events and then elite level sport.

"I'll admit that when I first saw the job advertised I didn't really give it a second's thought. I was more than content with my role at the SCG, but the more I kept looking at this job the more I realised it had me written all over it. It was a great opportunity, not only to run my own show so to speak, but also to be a part of this whole redevelopment and establishing the new home base for Greater Western Sydney."

UNDER SCRUTINY

As well as bringing 25 years worth of turf industry experience to the role, perhaps the key criteria which won O'Keeffe the Showgrounds job was his knowledge of AFL and the exacting requirements the competition demands of its playing surfaces. Unlike Australia's other elite level sporting competitions, the AFL undertakes a rigorous ground assessment programme in the lead-up to the start of the season and, if circumstances require, during the season itself.

Employing the services of the AGCSA's technical division AGCSATech, the AFL undertakes pre-season inspections of all venues used for premiership fixtures – the likes of the Melbourne Cricket Ground, Etihad Stadium, the SCG, ANZ

Stadium, the Gabba, Metricon Stadium (Gold Coast), Pattersons Stadium (formerly Subiaco, WA), AAMI Stadium (Adelaide), Manuka Oval (Canberra) and Aurora Stadium (Launceston).

These one-off inspections are generally carried out 1-2 weeks prior to the venue hosting its first game of the season and parameters such as surface hardness, surface uniformity, surface stability and traction, surface levelness and uniformity of grass cover are measured and reported back to the AFL to ascertain the venue's suitability. (Assessments are also conducted on the number of regional venues which host pre-season NAB Cup competition matches with anywhere up to four inspections being carried out before game day.)

Given that the Showgrounds is a new venue in 2012 and the fact that there is always intense club and media scrutiny surrounding AFL playing surfaces, inspections started back during the ground's reconstruction and have continued throughout summer and autumn, in particular around the time of the Show. An inspection was carried out during the Show to ascertain the level of damage to the surface and then again afterwards to assess the progress of surface reinstatement works. A final inspection will be conducted on 16 May, just 10 days out from the match.

SHOWSTOPPER

Having been involved with the preparation of the SGC outfield for the best part of eight years previous, O'Keeffe is well aware of the AFL's stringent criteria and assessment regime. Given the amount of work that has been required to reinstate the Showgrounds in the aftermath of this year's Show, that will serve him well in what will be a race against time to get the surface back up to AFL standard.

"It was certainly a wild ride," says O'Keeffe as he reflects on this year's Show which ran from 5-18 April. "Everyone was telling me horror stories beforehand and showing me photos of what the ground looked like after previous shows, yet while I had a few strategies in place heading into this year's Show it was still very much a wait and see prospect.

"The ground had come back very well after the two major concerts in January and February and before the Show we just made sure that our practices focussed on hardening the couch up to make it as durable as possible. Although we did it more as an experiment, about two weeks out we also oversowed with Caravelle perennial ryegrass at 3kg/100m² to see how it would assist the surface in getting through the Show.

"During the Show itself, we tried to keep the wear concentrated as best we could, but there is so much tradition that goes with the show that you couldn't alter things too much. For instance there wasn't much we could do with the rodeo due to the infrastructure requirements with bullpens etc..., but we worked with the ringmaster Lorraine Angus who was fantastic.

"In fact, the attitude of everyone involved with the Show was great. They could easily have said, 'Well, we've been doing it like this for 'x' amount of years and we're not changing now', but they were really good and were aware of the timeframes we had to reinstate the ground after the event. Obviously the centre of the ground got trashed towards the end so we tried to have as much activity there as possible because we knew we would have to replace it regardless.

"We had a crew of four on every night and their job was to continually divot and roll the ground. On a few occasions we also vacuumed the surface to pick up debris from the likes of fireworks displays.

"The biggest hurdle we had was with water. The first week of the Show was very warm – up to 29 degrees on the opening days – and we were caught out a little trying to get water up to the surface. It was particularly noticeable with the showjumping. Because the new profile drains really well, the ground was just too dry and when the horses landed the surface would just explode underneath them.

"We ended up watering pretty much every day during breaks in the programme which certainly raised a few eyebrows and we also applied wetting agents to help retain some moisture within the profile. Once we were able to get the water on it did make a difference and the ground firmed up noticeably. Then to top it off, at the other extreme we copped 150mm of rain on the last two days!"



COUNTDOWN BEGINS

While the new surface certainly held up markedly better than it had done in the aftermath of previous shows, the ground still looked like it had gone the proverbial 10 rounds after 14 days of intense wear and tear.

As soon as the show finished O'Keeffe was out with the Amazone Groundkeeper 180, giving the surface a tickle with some light scarifying blades as well as sucking up as much loose organic material that had been churned up.

At the same time, contractors started milling the damaged turf in preparation for replacement turf to come in. As part of the redevelopment, the RAS had a 10,000m² pad of Legend couchgrass installed out at Camden for the specific purpose of re-turfing the arena if required.



With 14-days of concentrated traffic and round-the-clock events such as showjumping and stock drives, this is what the Sydney Showgrounds would typically look like in the aftermath of past Royal Easter Shows

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GOLF COURSE SHAPERS AND BUILDERS

While the redeveloped surface fared a lot better in 2012, more than 4000m² of turf still needed to be replaced in the aftermath of this year's show. Areas of the ground which weren't replaced were scarified, cored, topdressed and oversown with ryegrass in order to get the ground back up for the Giants inaugural home game on 26 May



The worst affected area was the centre square through to the northern end goal square with a total of around 4000m² needing to be replaced. A smaller pocket, just outside the 50m arc at the southern end of the ground, which had acted as the landing area for motorbike jumping during the Show, was also replaced.

As the replacement MegAyr maxi-rolls were being laid, the remaining 14,000m² of arena surface underwent a major renovation. To start with, a Phantom Corer was put over the ground twice to remove as much organic material out of the profile as possible. The ground was then oversown with Calypso perennial ryegrass at 4.5kg/100m² (the Camden pad had been oversown with Calypso six weeks prior to the Show) and then topdressed with 100 tonnes of sand to reinstate levels.

All that work was completed within a week of the Show finishing and as well as giving the newly laid turf a good roll, a hollow core and topdress, Evergreen turf covers were put down across much of the remainder of the ground to help stimulate couchgrass recovery.

"The issue we have now in the lead-up to the first game is that we will be effectively managing two very different surfaces," says O'Keeffe. "While the freshly laid turf certainly looks a lot better than the rest of the ground at the moment, it is a lot softer compared to the outside due to the imported thatch that came in with the rolls. Now we just need some warm weather and hopefully we can sit back and watch some grass grow."

"We've got a turnaround time of 36 days between the end of the Show and the game which should give us enough time to get the surface back up. Obviously a lot will be dependent on the weather of course, but it's a pretty good window – if we can't do something in that time then we are probably in the wrong business!"

"It has definitely been an intense start to my time here, but it has been very enjoyable. I certainly couldn't have done it without the crew here, as well as the suppliers who have been great in their support since my move across from the SCG."

"We're playing with the big boys now. The AFL has put a lot of money into this redevelopment and they, along with the RAS, expect results, as do I. If we can show to everyone that it can be done, it will be a great achievement for all."

With just a 36-day turnaround between the Show and the first Giants home game, Evergreen turf covers were used across much of the ground to help stimulate the couchgrass base



As part of the Showgrounds redevelopment, a 10,000m² pad of Legend couch sod was also installed at Camden for the sole purpose of returfing parts of the arena following the Show. The Showgrounds uses StrathAyr's MegAyr reinforced turf system

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Over the summer of 2009/2010 Royal Melbourne's West Course and seven holes on the East Course, including the par five 17th pictured here, were transformed as part of the club's major re-grassing programme. Over the past summer, following the conclusion of The Presidents Cup, the remaining 11 East Course holes were closed and redeveloped to bring them into line with the rest of the course



East meets West

Having already undertaken groundbreaking work in the lead-up to hosting last year's Presidents Cup, the mountain of reconstruction and re-grassing work continued unabated at Royal Melbourne Golf Club this past summer. Course superintendent Richard Forsyth reviews the changes made to the remaining 11 East Course holes which signals the end of more than four years of major course improvement works.

The summer of 2011/2012 at Royal Melbourne Golf Club will go down as one of the most significant in the club's long and illustrious history. The staging of The President's Cup in November 2011, the Master of the Amateurs tournament in January 2012 and the 2012 Women's Australian Open in February was a full schedule on its own, but there was still work to be done.

As has been well documented in past editions of Australian Turfgrass Management (**see ATM Volume 13.6 pp 8-22**), Royal Melbourne has been the subject of significant course improvement works which started as far back as 2008. Among the works have been over \$2 million spent improving and transforming the club's water management infrastructure, while a major re-grassing programme has seen significant works undertaken to reinstate Royal Melbourne's famed greens with Suttons Mix colonial bentgrass and a change in turf composition for fairways and surrounds.

The re-grassing strategy began in earnest during the summer of 2009/2010 when the West Course and Composite East holes (East 1, 2, 3, 4, 16, 17, and 18) were closed. With The Presidents Cup looming at the end of 2011, these were obviously the priority which left the remaining 11 East Course holes to be worked on to complete all 36 holes.

An ambitious plan to bring the remaining East Course holes in line with their West Course siblings was hatched in early 2011 with work to start within weeks of The Presidents Cup finishing. East holes 5 through 15 would be closed for three months from 12 December 2011 in order to complete the re-grassing programme.

In addition to this, Renaissance Golf Design (RGD), headed by renowned course architect Tom Doak, was appointed Royal Melbourne's consulting architect during 2011 and the club agreed to incorporate alterations to the East Course recommended by Doak during the period of closure which added to the scope of works significantly.

ENHANCING THE EAST

Many of Doak's recommendations involved enhancing the strategy of holes and improving protection of boundaries. Brian Slawnik from RGD moved to Melbourne for three months to supervise and undertake the shaping work and having him on site doing the work made the project run much more smoothly as there were no issues with interpretation of Doak's concepts.

Much of the work was relatively minor which included widening of fairways, reshaping bunkers, minor reinstatement of green contours, vegetation reduction and tee alignment. More significantly, new bunkers were constructed on East holes 10, 13 and 15, a new green and fairway on 15, major reworking of the green and surrounds on 6 and reconstruction of tees on holes 7, 8, 9, 13 and 17.

The work on 15 has been most significant with new bunkering down the right side and a reshaped fairway returning the original link with the adjacent fairway on 5 (see before, during and after photos on page 16). The green is now a fall away green with a higher ridge along the right side and a slope from front to back. This now places a premium on positioning the tee shot on the short par 4 to get the best angle and line to the pin.



PHOTOS: RICHARD FORSYTH AND BRETT ROBINSON

Other holes have now been linked with common fairway (such as 10, 11 and 12) which provides alternative routes to approach the greens. It gives a more spacious appearance and introduces some similarity to the linked fairways on the West Course. Hole 10 has additional drive bunkering introduced on the right side which pushes tee shots to the left, away from the boundary, which places more emphasis on the accuracy of the tee shot and makes the hole play slightly longer.

All of the changes appear very positive and it was impressive to see the way Tom and Brian assessed the course. Although most of their adjustments have been minor, they have made a significant improvement to strategy, appearance and boundary protection.

Brian's skill in shaping and eye for detail were excellent and throughout the works he used a D5 dozer and 13 ton excavator. The green contours needed only minor raking with a SandPro after he finished with the dozer to get them ready for turf, while the bunkers needed only minor hand work to have them in a playable condition.

GREENS AND SURROUNDS

The re-grassing programme for greens in 2009/2010 involved 20 of the 25 greens on the East and West courses. The resurfacing was deemed necessary to remove organic layer accumulation and deal with *Poa annua* infestation with a combination of re-seeding and turfing used to achieve the desired result. Since that work, the remaining 11 East Course greens have been intensively managed to eradicate *Poa annua* with good success to date.

The original concept was to resurface these 11 greens by reseedling, as we had done with the others. Based on that experience, however, we decided the quality of the 10-12 year old mature Suttons Mix turf in the greens would be far superior to anything we would re-seed or re-turf and the turf would have more resilience from the outset.

The desire to remove organic matter remained a priority in order to achieve consistency of the firmness and characteristics of the other greens. Therefore a programme to cut the turf, remove the organic layer and re-lay the existing turf was decided. Issues that this approach presented were couch encroachment, possible *Poa annua* regeneration and maintaining surface contours.

As planned, the 11 holes were closed on 12 December 2011 and the cutting of turf off the greens started. Turf was sliced off at a depth of 10-12mm to minimise the amount of organic matter transfer. This was as thin as we could cut without the sodcutter riding up out of the ground.

With the assistance of contractors, nine of the 11 greens were cut, rolled and stacked to the side. The next process was to cut the organic layer to a thickness of 50-60mm on each green. This material was then cut into blocks, manually shovelled into frontend loaders and trucked away. The result was clean sand reflecting the surface contours but 60-70mm lower than the original surface. The surface was then scarified in two directions, smoothed and amendments applied. Couch encroachment around the edges had been sprayed three times in the weeks prior and some of this turf had to be discarded.

The process of re-laying the turf started in sequence with the goal not to have any turf rolled up for more than two or three days before re-laying. With Christmas looming, we had nine working days to lift 10 greens, remove the thatch and then re-lay. In an outstanding effort, our staff and contractors completed nine greens in seven days with an excellent standard of laying achieved.

As this edition goes to print, the turf has taken root well and has the characteristics of a mature



Rather than reseeding the greens, as had been the technique used in 2009/2010, the existing 10-12 year-old Suttons Mix turf was stripped off the 11 remaining East Course greens and then re-layed

One of the key goals in the greens resurfacing has been to remove the existing organic layer to improve firmness characteristics and reduce the *Poa annua* seedbank. To achieve this, once the existing greens turf was removed, between 50-60mm of organic layer was cut into blocks and manually stripped off





PHOTOGRAPHS COURTESY OF NEARMAP.COM

The work on 15 East has been most significant with new bunkering down the right side, a reshaped fairway returning the original link with the adjacent 5 East fairway and a new fall away green which slopes from front to back. Work on the 6 East green and approach can also be seen

green with much more fineness and density which has supported the original decision to reuse the same turf. There is some *Poa annua* regeneration but overall the greens are relatively clean and we are very pleased with the result to date. The turf has been topdressed on two occasions since re-laying and is now ready for play.

The success of this method suggests we can look at such a process as a way of managing organic matter accumulation in the future. Legendary

Royal Melbourne course manager Claude Crockford (1937-1975) had a programme of lifting and re-laying greens during the 1960s and 1970s which was quite successful in maintaining firm and healthy bentgrass surfaces.

In addition to resurfacing greens, the approaches and surrounds were re-turfed with fine fescue. As with the works in 2009/2010, couch control of the existing surrounds was undertaken using Fusilade and despite some movement into green edges causing a few headaches, overall the product worked exceptionally well. Turf was stripped to a depth to blend with the now lower green edge and these areas were then heavily scarified and smoothed, amendments added and turf laid.

All of the fescue areas have been irrigated separately to give maximum control of water applied to greens, approaches, surrounds and fairways. Greens have part circle sprinklers and the surrounds are covered by a mixture of smaller heads designed to irrigate only the fescue. There can be as many as 30 sprinkler heads per approach and surround on some of the more intricately shaped areas.

Surround areas averaged over 1000m² in size requiring 1.2 hectares of fine fescue turf which was contract grown in advance by Australian Seed and Turf. A supply and lay arrangement was in place with the laying starting in the first week of January 2012. Fortunately weather conditions were favourable as we had found previously very hot temperatures were not helpful to the turf or the people laying it. The turf has established better than last time around so all of the approach and surround areas should open in good condition.

The fescue surrounds have proven a success and the grass enables us to chemically control both couch and *Poa annua* invasion into greens. The herbicides haloxyfop and fluazifop are used with good success to control grass weeds. Accuracy of application on the green edges and couch edges is challenging and the risk of off-target damage is ever present.

While we have doubled the area of cool-season grass to manage during the summer with the addition of the fescue, which can add to the workload and stress level a little, the playing surface it provides is very appropriate for Royal Melbourne and far outweighs the workload and stress to maintain them.

FAIRWAYS

The West Course and East Composite hole works in 2009/2010 saw the introduction of Legend couchgrass into the Royal Melbourne fairways. The approach we took to convert the remaining 11 East Course holes was also different on this occasion with the decision made to encourage some of the existing local couch to recover and produce a mixed couch surface. This was decided because of the quality of some of the existing couch present was at least equal to the Legend.

There was also the complication of large patches of Wintergreen existing in some fairways which needed to be controlled. Previously we had tried repeat herbicide applications with glyphosate and fluzifop and while the results were initially good the Wintergreen eventually reappeared and aggressively re-established.

There were over two hectares of existing Wintergreen over the 11 fairways which had a dense and heavy thatch layer. The approach to control it involved two passes with a topmaker to strip organic matter before the ground was tilled and Basamid spread. A reverse till machine was then used to incorporate the Basamid, the ground rolled to seal and a second rate of Basamid applied and watered in. In addition, Fusilade was also applied to assist in controlling any remaining vegetative material. All this work was undertaken in the first two weeks of closing the holes in December.

Initially all fairways were sprayed with Glyphosate 540 gram strength at 1 litre per hectare. A follow-up application 10 days later at 2l/ha gave a consistent surface browning off of all couch present. Line-planting of Legend sprigs using two planting machines started on 3 January and nine hectares were eventually completed in four days.

We were pleased with the quality of the line planting, but the areas where the Wintergreen was removed were impacted by the herbicide applications which retarded root initiation. Over planting of these



areas was required later in February. Planting into a thatch layer for the remaining fairways also has restricted the establishment of the planted sprigs to some extent. Melbourne's cooler summer also impacted the result and a full cover of couch will not be achieved until next season, which is a little disappointing. Some overseeding with fine fescue has been done to assist in providing a playing surface through the winter months.

The result of the suppression of the existing couch was ideal with the herbicide keeping the existing couches controlled for the first six weeks which allowed the Legend sprigs to establish and start to spread. Weaker or less tolerant couch has not recovered and will be taken over by the Legend.

In addition to resurfacing greens, the approaches and surrounds were re-turfed with fine fescue. The existing turf was stripped to a depth to blend with the now lower green edge and these areas were then heavily scarified and smoothed before turfing



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The approach taken to convert the remaining 11 East Course fairways with Legend couch was slightly different than in 2009/2010 with the decision made to encourage some of the existing local couch to recover and produce a mixed sward



◀ **Nine hectares of Legend couch line-planting was completed in four days**

This was the intention of the method used and we hope to see a strong cover of couch in all areas by January 2013 with consistent characteristics throughout all 36 fairways.

BUNKERS AND TEES

Drainage was required in four of the new bunkers where there is a shallow sand profile over the clay. The bunkers were excavated down to the clay line and shaped into a V-base. Flat pipe was installed in the bottom and sand relocated from another area of the project to fill the base. Faces and lips were formed from the better compacting materials created from the excavation of the bunkers.

New tees were shaped in a style to broaden and flatten the surface and blend the shapes into the surrounding ground. This has achieved a much improved appearance and there was attention to alignment of tees down the line of the hole.

New irrigation was installed in a dual row of part circle heads down each side of the tee surround giving much improved uniformity. Tees were also laser levelled, turfed with Santa ana and have been subsequently topdressed and oversown with fine fescue.

VISION REALISED

The East Course was due to re-open on 21 April and although the fairway turf in places will be somewhat patchy we are confident the overall improvement in

appearance, consistency and strategy will be well received.

The project has been a major undertaking for all of the contractors and suppliers and the Royal Melbourne links crew. We set targets to complete various stages of the project so the next phase could start and all involved worked hard to complete tasks on time. A special thanks to the contractors and suppliers for their efforts to produce the desired outcome and meet the targets set.

The staff have had a particularly solid six months moving from tournament preparation, which has its own pressures and extended hours, to re-grassing and construction works which involve long hours and often physically demanding work. The East Course team, led by assistant Paul Thomas and foreman John Mann, have approached the whole project with enthusiasm and commitment.

All of the staff have had an involvement in the work and the positive result is a credit to them all. It is unlikely we will see another season as busy as this one at Royal Melbourne, but all of the team can be very proud of what has been achieved. 🙌

With the East Course holes closed the opportunity was taken to reconstruct tee complexes on holes 7, 8, 9, 13 and 17 (pictured)



THOMAS HEADS WEST

Following The Presidents Cup, Royal Melbourne course superintendent

Richard Forsyth was forced to reshuffle the staff deck following the departure of

West Course assistant **Simon Muller**, who in March took over as superintendent of The Dunes on Victoria's Morning Peninsula.

Paul Thomas (pictured), Forsyth's former East Course assistant, has moved across to become West Course assistant which has paved the way for former West Course foreman **Andrew Boyle** to shift across as East Course assistant. Foreman **John Mann** switches from East to West, while **Paul Irvine** has been promoted to East Course foreman.



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The global super

One of the unique aspects of the golf course management profession is the world of opportunities that can open up to those willing to venture overseas. Cameron Thompson is one such Australian who has embraced that tenet and in the first of a two part feature he looks back over a diverse career which has taken him to the US, the Caribbean, the Tiger Woods Dubai project and now China where he is IMG's Director of Agronomy for the Asia Pacific region.

I can pinpoint exactly where my fascination with golf originated. I was 13-years-old, hitting 5-irons with my grandfather at Middle Ridge Golf Club in my home town of Toowoomba, Queensland. More than two decades on and it is hard to believe that the sport of golf and the golf course management profession have taken me around the world, opening my eyes up to not only diverse agronomic practices but the many and varied countries and cultures which make up our planet.

My journey in golf course management began just like many others would have. I spent my formative years working through various positions at Victoria Park Golf Course and Ashgrove Golf Club in Brisbane, but after nearly a decade of doing that I was yearning for a change.

It was through the unwavering support and guidance of the Ohio State University that I embarked on what was supposed to be a one-year tenure as a student on their renowned intern programme. Ten years since leaving Australian shores, I am still yet to find my way home!

OPENING UP DOORS

I literally hit the ground running in America, arriving at Fort Myers in Florida midday and going straight to work from the airport. My first international posting was with Troon Golf at the new Colonial Country Club development where I assisted with the construction, grow-in and transition into daily play. During this time I was fortunate to also be a part of the PGA Tour's Chrysler Championship tournament preparations at the Westin Innisbrook in Tampa Bay.

The second part of my US experience was spent in Scottsdale, Arizona at Legend Trail Golf Club. One of the great aspects of the Ohio intern programme is

that you get to spend time at both warm-season and cool-season grass courses and it was critical that I add the management of the latter to my bow, as well as experience the overseeding process. The natural topography and saguaro cactuses were something to behold at Legend Trail and during my time there I was appointed assistant superintendent.

My goal when arriving in the US was not to initially work at the illustrious courses. Rather, I sought to open myself up to every disparate aspect of the industry, from construction to tournament play

CAMERON THOMPSON — CAREER SNAPSHOT

2011-present: Director of Agronomy, IMG Services (based out of Shanghai) and Director of Agronomy Jinji Lake Golf Club, Suzhou, China (one hour west of Shanghai)

2011: Superintendent Lake Malaren Golf Club, Shanghai, China (grow-in and Shanghai Masters tournament preparations)

2008-2011: Superintendent Tiger Woods Dubai (Al Ruwaya), United Arab Emirates

2006-2008: Superintendent Amata Spring Country Club, Thailand

2005: Assistant superintendent Abaco Club, The Bahamas

2004: Assistant superintendent Legend Trail Golf Club, Scottsdale, Arizona, US

2003: Intern at Colonial Country Club, Florida, US

2000-2002: Victoria Park Golf Club

1999-2000: Irrigation technician at Ashgrove Golf Club, Brisbane

1994-1999: Victoria Park Golf Club, Brisbane

and everything in between. I was determined to get to the bigger courses on my own merit.

Eventually, however, the sad day came when I had to leave the US. The plane ticket was booked and the bags were packed in readiness for my return to Brisbane. However, the night before I was due to leave, at midnight in fact, I got a call propositioning an interesting job. I accepted instantly. The next morning I still showed up at the airport, but instead boarded a plane for Marsh Harbor, a town in the Abaco Islands, Bahamas. It happened so quickly that I forgot to inform my family, who turned up at Brisbane airport waiting for me!

The next time I contacted them was from the Abaco Club and it was from here that my career really began to take off. Since then (2005) I've been fortunate to work in a diverse set of agronomic and cultural circumstances, including involvement with about 25 golf courses in 12 countries. During that time I have experienced 45 different cultures, 15 international tournaments, five construction and grow-in projects and honed my skills in the art of managing warm- and cool-season turf.

THE GLOBAL SUPER

The golf course management profession has without doubt provided the ideal platform for expediting my agronomic experience. It has also scratched my itch as a world traveller and offered exposure to what is fast becoming a passion of mine – culture and language.

Understanding different cultures is the key to unlocking international agronomic success. I learnt this the hard way and I attribute many of my early failings to my personal inability to compromise or understand a different viewpoint.

Acceptance of different realities is mandatory when you decide to take the plunge overseas. During my time in the Middle East our soil scientist's name was Saddam Hussein! No one there blinked an eye! It's a fascinating topic and one that has given me an education far removed from the classrooms and golf courses of Australia. I place so much importance on cross-cultural understanding that I consider myself a novice ethnologist!

Communication breakdown is consistently at the base of a lot of golf-related agronomic failings. As the world of golf globalises, acceptance of culture on a deep mental level becomes the principal skill set requirement. Once I 'got it' and truly started capturing and harnessing the power of culture, some amazing things happened.

For example, when I was superintendent at the IMG-managed Amata Spring Country Club in Thailand, just four weeks out from the Royal Trophy and in the final stages of tournament preparations, our paspalum tees, fairways and approaches started showing significant signs of saline sodic stress.

I decided to aerate with 19mm hollow tines and within a 48-hour period, working through the night, we cored, removed all objectionable material, applied gypsum at 4.5kg/100m² and a fast-release fertiliser (21-0-0) at 0.25kg N/100m² and topdressed all surfaces. To see the team of local Thai staff line the fairways closing in each individual core hole by hand was out of this world!

The golf course was totally playable within four days with no visible signs of any mechanical disturbance and when Seve Ballesteros came in for a course inspection a couple days later, he threw his arm around me and said "These are some of the best conditions I have seen anywhere!" If only he had seen the course a week earlier!

THE TIGER WOODS DUBAI

Achievements like that were the catalyst for my candidacy for perhaps one of the most talked about course developments in the world at the time – The Tiger Woods Dubai. After many months of back and forth I finally got the call from IMG corporate headquarters in early 2008 and was informed that I had been appointed golf course superintendent of The Tiger Woods Dubai course development in the United Arab Emirates, Woods' first course design project. For the next three years I put my heart and soul into the construction and grow-in of the golf course and anything and everything 'Tiger Woods' consumed my life.

To say we were creating the 'Disneyland' of golf would be an understatement. Back then Dubai

Opposite: Amata Spring Country Club in Thailand is one of a number of courses ex-pat Australian Cameron Thompson (pictured inset) has been involved with during a diverse career in agronomy. An internship through The Ohio Program over a decade ago kicked started his journey around the world



Acceptance of different cultures and realities is mandatory when taking the plunge overseas

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For three years Thompson was construction and grow-in superintendent at The Tiger Woods Dubai development. Inspiration for core golf was pulled from the Australian sandbelt courses, in particular Royal Melbourne and Kingston Heath

was bustling and stepping foot on our golf course had a special mystique about it. One of the more amazing things about The Tiger Woods Dubai was the unbelievable attention to detail which really set it apart. Everything was on the grandest of scales and we even had a pair of live tigers in an elaborate artificial habitat situated at the office headquarters!

The Tiger Woods Dubai (Al Ruwaya was the actual name of the golf course, which is Arabic for 'serenity') was located within the larger Dubailand Development Project, which was part of the coastal development corridor of Dubai. Dubailand was a monumental development covering about three billion square feet (27,870 hectares), planned within a broad framework that included six different 'character zones'.

Though each character zone would include a mixture of land uses, it contained one dominant use as its distinguishing feature or theme. The Tiger Woods Dubai was located within the Sports and Outdoor zone, occupying 38 million square feet (approx 350 hectares).

The conceptual project plan naturally placed great emphasis on the aesthetic appeal of the development. This was expressed in innumerable ways – the landscaping, building architecture and façades, fountains and water features including ornamental lakes, the creation of arrival sequences for the hotel and clubhouse to prepare the visitor for the architectural character of the main structures, and the design of open spaces and plazas. One key directive was to create an artificial world that removed you from the typical Dubai lifestyle and landscape experience.

Pre-construction, the Tiger Woods Dubai site consisted of uninspiring and uninhabited desert. The long-term vision was to transform the area into a green oasis through the primary provision of the golf course and landscaping



Pre-construction, the site consisted of flat, uninspiring and uninhabited desert. The long-term vision was to transform the area into a green oasis through the primary provision of the golf course and landscaping. The golfing development held the strong potential of delivering a host of environmental benefits including:

- The creation of new wildlife habitats. Planting suitable cover species and retaining local ghaf trees (*Prosopis cineraria*) made the area attractive to a range of migrant birds, while freshwater lakes attracted water birds and waders. Much of the natural surface and vegetation was retained, thereby strengthening native flora and fauna;
- Preservation of open space and remnant vegetation within the urban environment;
- Greening of the site assisted in reducing stormwater run-off, sediment loads and pollutants;
- Irrigating with reclaimed water; and
- Educating the community on environmental issues.

GRAND DESIGNS

The golf experience at The Tiger Woods Dubai was to be second to none. The architecture respectfully reflected the cultural heritage of the Islamic people while also incorporating a dynamic modern feel. Inspiration for core golf was pulled from the Australian sandbelt courses, in particular Royal Melbourne and Kingston Heath. Woods himself was particularly fascinated with the bunkering style of the sandbelt, while 'green' architecture and sustainability were also important considerations.

Vegetation for the surrounding landscape of the golf course was lush and unlike anything ever seen in Dubai, creating a paradise of sorts filled with lakes, rockwork, dense planting and precisely manicured fairways. The landscape was breathtaking, contrasting bright green expanses against the natural earth tones of an artificially engineered Australian sandbelt.

Rolling sand dunes created dramatic elevation changes within single shots and water continuously flowed throughout the site, a constant reminder that this was truly an 'oasis in the desert'. Clusters of palms sat near these lakes, creating a stunning backdrop to the golf course.

Key specimen trees accented important features at tee and green complexes around the course, leaving the impression they had been there forever. The golf course interfaced with the future surrounding community through a continuous tree belt that created a secure and beautiful buffer for future potential golfers and homeowners alike.

The agronomic and construction facts and figures for The Tiger Woods Dubai were impressive to say the least. The golf course site was on an area of undulating sand sheets, sand ridges and harder sandy-gravel inter-dunal plains and some 22 million

cubic meters of cut and fill native dune sand was relocated during initial excavations.

With surface winds getting up to 30 knots at times, it was not uncommon during the construction phase to lose a shaped golf hole that took days in a matter of hours. Needless to say we had great respect for the local winds.

There was the equivalent of 54 holes worth of greens-quality grass being maintained between 3-5mm. Greens and tees were TifEagle, approaches grassed with Tifdwarf and fairways wall-to-wall 419 Bermudagrass. The maintenance equipment was equally comprehensive, nothing short of a wish list, even by 36-hole complex standards.

The nursery site alone encompassed 80 hectares in total, the largest in the United Arab Emirates. The site included two 419 Bermudagrass nurseries (one 20ha and one 5ha maintained at 10mm), 2ha of TifEagle (sprig nursery) and one Tifdwarf nursery maintained at 5 mm. The entire golf course was solid turfed with mega rolls (all done in-house) except for greens and tees which were sprigged.

Ten thousand specimen trees, some up to 10 metres high, as well as hundreds of thousands of shrubs were flown in from around the globe, creating a bold, one-of-a-kind landscape. These were regularly shipped into the nursery, returned to health after their international journey then transplanted into a methodically chosen spot for them on the golf course.



The irrigation system at Tiger Woods Dubai project was monstrous. There were two pump stations, one for each nine, which were each specified at 5000 gallons per minute, providing a total of 10,000 gallons per minute (630 litres per second). On the course itself there were 7000 sprinkler heads. Two temporary reverse osmosis systems were constructed on the nursery site and at all times wastewater was treated to virtually potable water standard.

The irrigation demand for the whole site was estimated at 1.5million ft³/day (42,600m³/day) and during the peak of summer evaporation losses were

The Tiger Woods Dubai course boasted the equivalent of 54 holes worth of greens-quality turf which was maintained between 3-5mm. Greens and tees were TifEagle, approaches Tifdwarf and fairways 419 Bermudagrass

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◀ **The Tiger Woods Dubai nursery site encompassed 80 hectares in total, the largest in the UAE. The entire golf course was solid turfed with mega rolls except for greens and tees which were sprigged**



Ten thousand specimen trees, some up to 10 metres high, as well as hundreds of thousands of shrubs were flown in from around the globe to create an instant one-of-a-kind landscape

The water treatment and irrigation system at Tiger Woods Dubai project was monstrous. There were two RO plants and separate pump stations for each set of nine holes



calculated at 15mm/day. Over the course of a year, the total demand for irrigation water was projected to be 548million ft³ (15.5million m³). The total irrigated area for the development was estimated at 30.6 million square feet (284 hectares), or 76 per cent of the project site. With a daily demand of 42,600m³, this implied an irrigation rate of 15l/m² per day!

NEXT CHAPTER

Despite the incredible amount of work and expense that went into creating The Tiger Woods Dubai, ultimately the course would never realise its potential. Due to a number of reasons, but primarily due to the world economic downturn, the whole project was closed down in 2011. Six holes had been completed and were being maintained at near tournament conditions, while the remaining 12 holes had been shaped, six with services, infrastructure and irrigation. All materials for these remaining holes were in the nursery and only needed to be transported to the course.

While it is heartbreaking that we never got to deliver to the world the magical oasis we were creating, it was nevertheless a once in a lifetime experience from a superintendent and turf management perspective. From the inside I got to watch Tiger go through his last major Tour victory and a knee reconstruction, before witnessing his world unravel around him in 2010.

After shutting the gates on The Tiger Woods Dubai chapter in March 2011, I've now transitioned into the role of Director of Agronomy for IMG Golf Services. Based out of Suzhou, China I currently oversee an agronomic portfolio of 14 international golf courses for IMG in the Asia Pacific region, 12 of which are in China. I am responsible for overseeing the turf conditions at these courses and ensuring playing surfaces are maintained to world class standards.

The diversity of the job is intense. In any given day I could go from assisting a client design with the functionality of a maintenance facility, to a grow-in, to bentgrass, Bermudagrass or paspalum greens management, to delivering speeches at client functions, interviewing superintendents, playing golf with local movie stars, or hosting international tournaments. Most recently we successfully prepped for the WGC HSBC Champions Tournament at Sheshan Golf Club in Shanghai and the China Challenge at Red Flag Valley Golf Club in Dalian.

Having migrated into the corporate world, this role is quickly teaching me about the other side of the game, namely player management, events and business development. Simply due to the heavy influx of content volume, I have to place a premium on organisation, communication and time management. In the second part to this article, which will appear in the July-August 2012 edition of Australian Turfgrass Management (Volume 14.4), I will delve more into my current role and some of my experiences to date in Asia.

TAKE A PUNT

Looking back, the journey I have taken to where I am today would not have been possible were it not for my involvement with Ohio State University and in particular programme director Mike O'Keeffe's dedicated belief in me, specifically in the early years. For this I am eternally grateful.

Recently, to show my respect, I went back to the Ohio State University Short Course, which interns attend as part of the programme, to conduct a seminar entitled 'The Global Superintendent' for the next generation of students.

When delivering my talk I couldn't help but scan the room and wonder who the next 'global superintendent' would be and hoped that perhaps I was influencing them the way The Ohio Program influenced me in the same classroom some 10 years ago. As they say, anything is possible.

Editor's note: Cameron Thompson can be contacted at cameron.thompson@imgworld.com or through Facebook <http://www.facebook.com/thegolffather>. You can also visit www.cameron-thompson.com/ For more information about The Ohio Program visit the Ohio State University website – <http://ohioprogam.org> – or view YouTube videos uploaded by programme director Mike O'Keeffe at www.youtube.com/user/topturfgrass. 🌱

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Are you chasing the impossible?



John Neylan
needs little
introduction

to ATM readers and in this edition he begins his regular column 'Grass-Roots' which will look at issues of the day affecting superintendents and turf managers. To kick things off, John looks at the eternal quest to control *Poa annua* and asks whether superintendents need to take a more holistic approach to its eradication.

At a recent VGCSA meeting, a presentation was given by David Warwick on how he manages *Poa annua* at Avondale Golf Club in Sydney. This presentation was also complemented by a discussion on the new *Poa annua* control herbicide bispyribac sodium.

Poa annua always generates a lot of discussion, most of which is out of frustration of not being able to find a 'silver bullet' method of control. The questions that were raised at this meeting made me think that we actually have a lot of research information that explains why it is such a tough weed to control, with some of the most significant work having been undertaken here in Australia by Dr. Mary Lush. What follows is a review of the literature and a refresher on the ultimate weed – *Poa annua*.

P. annua is the most written and talked about weed affecting turf and has been at the forefront of the minds of turf managers since the 1920's (Zontek, 1987). Piper and Oakley (1921) described the value of *P. annua* as a turf for putting greens and also commented that it would be very expensive to control and that such attempts would be hard to justify.

This profound statement is as true today as it was 91 years ago. The biology, physiology and control of *P. annua* have been researched more than any other turf problem and still there are no simple effective control strategies.

P. annua is an unsown component of many sportsturf areas in temperate climates, however, it also occurs in environments ranging from the sub-Antarctic to the tropics. It is one of the five most

***Poa annua* is the most written and talked about weed affecting turf. Its biology, physiology and control have been researched more than any other turf problem yet still there are no simple effective control strategies**

widely distributed plants in the world (Fenner, 1985) having developed effective survival strategies that allow it to persist under a range of soil, moisture and nutritional regimes.

P. annua will withstand close mowing and as the predominant species forms a dense turf that can provide a high quality playing surface. However, *P. annua* has a lower tolerance than other turf species to stresses such as heat, drought and diseases (Peel, 1982) and under summer stress will die out and leave dead, bare and unsightly patches in mixed swards.

In creeping bentgrass greens, *P. annua* is undesirable due to its upright growth compared to bentgrass which may affect the speed and direction of ball roll. The colour difference between the two species also detracts from the appearance of the surface and it flowers prolifically at very low cutting heights which disrupts the quality and appearance of the playing surface. Any effort to keep the *P. annua* alive gives it a competitive edge and allows it to spread further.

P. annua is treated by many superintendents as a weed to be eradicated. Most treatment methods give variable results and repeated treatments are necessary to prevent the proportion of *P. annua* from increasing. The difficulty in achieving control is due to the large seed bank of *P. annua* and the potential for year round germination and rapid seedling growth (Lush 1988).

This gives *P. annua* a competitive advantage over other species in mixed swards where the *P. annua* can colonise bare areas left by mature *P. annua* plants that have died due to chemical applications or environmental stress. For any *P. annua* control programme to be successful, both pre- and post-emergent control is required (Lush, 1990).

POA ANNUA BIOTYPES AND LIFE CYCLE

To develop an effective control strategy it is important to understand the characteristics of the plant and its life cycle. *P. annua* is a very diverse grass with potentially over 50 subspecies in a given turf area (Gibeault, 1974). *P. annua* as a species is not strictly an annual and is represented by a continuum of types ranging from annual (*Poa annua* f. *annua* L.) to strongly perennial (*Poa annua* f. *reptans* [Hauskins] T. Koyama) forms (Johnson et al. 1993). Gibeault (1974) and Breuninger (1993) described the main characteristics of the annual and perennial forms (see Table 1, page 28).

In intensively maintained turf swards with high levels of nutrition and irrigation, the perennial form dominates. Due to the prostrate and stoloniferous

growth characteristics it has the ability to spread into thin or bare areas, potentially 'swamping' the more desirable grass species particularly when conditions favour *P. annua*.

In a four year study on three golf greens, Cline et. al. (1993) identified four distinctly different phenotypes, including;

- Prolific and continuous seed producers which are relatively coarse textured;
- A group of dense, fine-textured plants that form distinct, relatively small clones. This group produces less seed and is resistant to invasion by bentgrass;
- A group that exhibits more cold-temperature sensitivity; and
- A group of coarse, upright 'curly' textured plants with a dark blue-green colour.

Hagley et.al. (2002) sampled putting greens on four golf courses representing different soils and ages of golf course and found that the difference in ecotypes was due to age. That is, the older the golf course the higher the proportion of the perennial type plants.

Mitra et.al. (2009) demonstrated substantial diversity in the different strains of *P. annua* collected by PennState University. Their research demonstrated significant variations in rate of germination and establishment, turf colour, quality, leaf texture, tiller numbers and number of seedheads among the *P. annua* cultivars with some having the potential to

be used on golf course putting greens even under warm growing conditions.

In research undertaken by AGCSATech (Neylan and Peart, 2008) the biodiversity of the *P. annua* population of a putting green was determined. There were seven distinct forms of *P. annua* that were normally distributed and varied from a very dense, compact, fine-leaved plant that had very limited lateral spread and no seedheads, to a more open plant with coarse leaves and numerous stolons that exhibited strong lateral spread and large numbers of seedheads. The majority of the plants were moderately dense to slightly open with coarse leaves and strongly stoloniferous.

The true annual form of *P. annua* germinates from seed in late summer-early autumn, growing vegetatively in winter, seeds and produces flowers in spring and then senesces in summer and dies. The perennial types can flower all year round with a major pulse in the late winter and spring (Lush, 1988). There is a major period of germination in the late summer-early autumn with some germination occurring in the spring.

Lush (1990) has suggested that the main germination period could be in the spring, following flowering and seed set. At this time there is some reduction in the number of tillers of *P. annua* which creates space for the new seedlings to grow. The perennial types survive throughout the year, however, there is a decline in the number of tillers during the



The difficulty in achieving control is due to the large seed bank of *Poa annua* and the potential for year round germination and rapid seedling growth



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Studies both in Australia and overseas shown that there is a huge diversity in *Poa annua* populations and in order to develop effective controls superintendents need to first identify the predominant *P. annua* types in their surfaces

summer (Cline et al 1993) and then an increase in the autumn. The work of Lush (1988) indicates that the die back may be quite large, however, the continual germination and rapid seedling growth disguises what could be a significant death rate.

The main attribute of *P. annua* that gives it such a strong competitive ability is the large seed bank it establishes. Banks of seed up to 200,000 seeds/m² are common in *P. annua* turfs (Lush, 1990) with most of this germinating in spring or autumn. However, some seeds remain in the soil to form a long-term reserve, with up to 20,000 seeds/m² in this bank. The germination of seeds in the long-term bank is often stimulated by scarifying, coring or some other damage to the surface.

A large percentage of the seeds formed at close cutting heights are viable since *P. annua* has the unique capability of producing ripened, viable seeds on panicles excised from the plant only 24-48

hours after pollination (Beard, 1970). Certain strains of *P. annua*, particularly the annual types, possess a seed dormancy factor. As a result, *P. annua* seed can remain in the soil for one or more years.

The above information about the life-cycle of *P. annua* demonstrates that it has a very high level of diversity through growth form, seed production, rate of seed germination and seed dormancy. This gives it excellent adaptability and survivability no matter the cultural and environmental conditions.

POA ANNUA CONTROL

The control of *P. annua* involves both chemical and cultural techniques that have been well documented in numerous articles (Breuninger, 1993, Zontek, 1987 and Vargus, 1990) and include a variety of chemical treatments which have been used with varying success. Once *P. annua* is established in bentgrass it is very difficult to eradicate and it is preferred to prevent the germination of seeds and to prevent the flowering and seed set so as to reduce the seed bank.

The other challenge in achieving effective control/suppression is that repeated applications of the same herbicides will result in the selection of resistant plants. As herbicides become less effective there is a tendency to apply the herbicide at higher rates and more frequently, this in turn confers stronger selection pressure. Once these resistant forms dominate the sward, further herbicide applications are generally ineffective and control can only be achieved through fumigation and reseeding with bentgrass.

There have been many *P. annua* control trials undertaken over many years, however, none of these have taken a strategic or a multifaceted approach to control and suppression. Most trials have only examined one or two herbicides applied at different rates and generally concentrated on post-emergent control with some limited use of pre-emergent herbicides.

TABLE 1: GROWTH CHARACTERISTICS OF ANNUAL AND PERENNIAL BIOTYPES OF *POA ANNUA*

Growth Characteristics	Annual Biotype <i>Poa annua</i> var. <i>annua</i> L.Timm	Perennial Biotype <i>Poa annua</i> var. <i>reptans</i> (Hauskins) Timm
Life Cycle	Mostly annual but sometimes biennial	Perennial
Growth Habit	Erect, compact bunch type growth	Low growing, spreads by prostrate stolons and tillers
Flowers	Panicles are open with dense flower formation. Quick flowering formation	Panicles are open with sparse to moderate flower
Tiller Number	Variable. Low in spring and high in autumn	High. Produces secondary tillers, more stable in growth. Produces a very tight turf
Rooting	Few adventitious roots	Numerous adventitious roots
Seed Dormancy	Will germinate after dormancy of two or more months	Can germinate within three days of maturity on the plant
Growing Location	Occurs in golf course roughs, fairways and couchgrass greens and tees	Predominantly found on bentgrass greens. Also found on irrigated fairways and tees

Effective herbicidal control of *P. annua* requires taking a strategic approach by targeting different stages of the life cycle and varying the herbicide chemistry. Unfortunately, too many superintendents continue to take a single herbicide approach with multiple applications. The strategic life cycle approach involves the use of:

- Post-emergent herbicides to control mature plants;
- Pre-emergent herbicides to reduce the numbers of new seedlings; and
- Seed head inhibitors to reduce flower head production.

There are various herbicide treatments, however, most provide a variable result, are either ineffective or damage the desired species. Trials undertaken by Neylan et.al. (1997) demonstrated that paclobutrazol alone and in combination with the pre-emergent bensulide provided effective suppression of *P. annua*. Endothal in combination with bensulide also provided significantly improved *P. annua* suppression compared to endothal alone. Bensulide is an effective pre-emergent herbicide but it can cause suppression of new roots (McMaugh, 1970 and Neylan, et.al. 1997).

Kageyama et al. (1989) demonstrated that paclobutrazol was effective in suppressing *P. annua* in a creeping bentgrass sward while Johnson and Murphy (1995) concluded that paclobutrazol was not highly effective, however, properly timed multiple

applications reduced *P. annua* sp. reptans ground coverage in creeping bentgrass. Ethofumesate can provide good *P. annua* suppression (Adams, 1989 and Lewis and Dipaola 1989) though multiple applications can result in a reduction in turf quality (Neylan, et.al. 1997).

Reicher et.al. (2011) evaluated different PGR's and herbicides for *P. annua* control across several locations. Control was highly variable from location to location and among years. Bispyribac sodium, paclobutrazol, and flurprimidol were the best performers across all years and locations.

Yelverton et.al. (1999) found that paclobutrazol was the most effective treatment in reducing *P. annua*. Flurprimidol was less effective, with trinexapac-ethyl having no effect in reducing *P. annua* at any of the sites. Acceptable turf quality was obtained with all PGR applications, however, higher rates of paclobutrazol resulted in lower turf quality than other treatments. Dithopyr or ethofumesate were also ineffective in reducing *P. annua* populations in these studies.

In research undertaken by AGCSATech (Neylan and Peart, 2008) individual biotypes of *P. annua* were subjected to applications of different herbicides and there were distinct differences in herbicide tolerance with the dense, perennial plants most tolerant to herbicides such as endothal and paclobutrazol. These studies also showed that while herbicide programmes can be very effective in reducing the



A 'whole of golf course' approach needs to be taken to control all sources of *Poa annua* infestation. This requires controlling *Poa* in the fairways and roughs as well as the greens and greens surrounds



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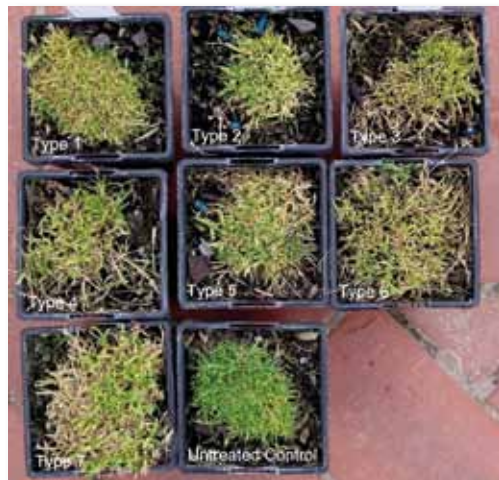



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As part of its *Poa annua* control trials in 2008, AGCSATech examined the effects of endothal (left) and paclobutrazol herbicide applications on seven *Poa annua* biotypes



P. annua population, they also have the potential to select out the more tolerant types which then over time will dominate the bentgrass turf.

Over the past few years there have been trials undertaken to evaluate several new herbicides including bispyribac-sodium, amicarbazone and methiozolin. Bispyribac-sodium has demonstrated to be effective against *P. annua* in several trials (Teuton et.al., 2007, McCullough et.al., 2010, Han and Kaminski, 2011) with multiple applications at low rates proving to be the most effective.

Teuton et.al., 2007 also stated that the removal of *P. annua* caused soil exposure until the creeping bentgrass grew over the bare areas and this decreased turf quality for a period of time. They stated that the management of *P. annua* in creeping bentgrass putting greens is possible with bispyribac-sodium, however, their results indicate that it can cause excessive injury.

Jefferies et. al. (2010) investigated the use of paclobutrazol treatments with the addition of amicarbazone. The research found that amicarbazone applied on less than four week sequential intervals caused unacceptable creeping bentgrass quality while a tank-mixture of amicarbazone and paclobutrazol reduced *P. annua* cover while maintaining acceptable creeping bentgrass quality, compared to both applied alone. Haguewood et.al 2011, also demonstrated the efficacy of bispyribac-sodium, however, they found

that when it was tank mixed with paclobutrazol that there could be unacceptable phytotoxicity.

Han and Kaminski (2011) examined the effects of bispyribac-sodium, amicarbazone and methiozolin on perennial forms of *P. annua*. Results from this study indicate that post-emergent control of perennial biotypes may be possible, but tolerance among these naturally occurring biotypes may exist.

The introduction of ethephon into turf management has provided the third key component to *P. annua* suppression – an effective seedhead regulator. Gelernter and Stowell (2001) and Borger (2008) have demonstrated good seedhead suppression, particularly in combination with trinexapac ethyl.

As described by Kaminski (2006), *P. annua* seedhead suppression can be unacceptable if the applications miss the narrow window of opportunity for effective seed head suppression. Suppression requires treatment prior to seedhead formation. Under field conditions, estimates of seedhead formation are difficult due to the wide range of environmental conditions that seed head formation occurs (Haguewood et.al., 2011) and consequently, sequential applications are often necessary.

It is interesting to note that across all the research that has been undertaken that paclobutrazol features very prominently as a consistently effective method of *P. annua* suppression. It also has to be noted that all of the herbicides and PGR's can and will give variable results depending on biotype, time of year, locality and climate.

MAINTENANCE PRACTICES AND POA ANNUA

The use of maintenance practices that encourage the desirable species and give them a competitive advantage is essential. Maintaining a dense turf reduces the number of spaces in which *P. annua* seedlings can colonise and this can run contrary to *P. annua* control programmes involving low fertility which often results in an open turf.

Beard et.al. (2001) assessed the relative competitive ability of *Agrostis stolonifera* cultivars to *Poa annua* L. on a very closely mowed putting green. Penn G2, Penn G6, Seaside II and Penn A1 ranked superior in competitiveness which was due to the high shoot density. Ranking lowest were Penncross and Pennlinks.

Turf subjected to high wear is a prime candidate for *P. annua* invasion and a balance must be achieved between ensuring adequate nutrition to give good turf recovery and the downside of stimulating the *P. annua*. Inadequate fertility and the resulting lack of turf density leaves the turf vulnerable to *P. annua* invasion. This is particularly a problem during winter when recovery is slow and *P. annua* is at its most competitive. It is essential to go into winter with high turf density and then switch off the nitrogen.

Information about the life-cycle of *Poa annua* demonstrates that it has a very high level of diversity which gives it excellent adaptability and survivability, no matter what the cultural and environmental conditions.

CONTINUED ON PAGE 32

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Controlling *Poa annua* involves multiple strategies including moisture control, herbicides, fertility management and hand weeding

CONTINUED FROM PAGE 30

Other maintenance factors that affect the increase in the *Poa annua* population include;

- **Water:** Water high in salinity can weaken bentgrass over summer and provide an opportunity for *P. annua* to establish in the autumn/winter.
- **Renovations:** There is no doubt that hollow coring and scarifying in the cooler months can stimulate *P. annua* germination and create spaces for seedlings to establish. As with all successful weed species, *P. annua* is an opportunistic plant that can quickly establish in a small space devoid of competitors. Autumn renovations in particular are to be avoided and summer coring etc. would appear to be more advantageous to the bentgrass. Some golf courses are avoiding annual renovations and this has to be balanced against thatch accumulation, soil compaction and the health of the bentgrass.
- **Irrigation:** Irrigation management is seen as an important tool in restricting the conditions suited to *P. annua*. That is, deep infrequent irrigations that allow the surface to dry out are preferable to frequent, shallow irrigation. *P. annua* and its shallow root system is favoured by keeping the top few millimetres regularly watered. The ability to achieve this is dependent on the bentgrass having a deep and healthy root system.
- **Traffic:** *P. annua* needs an unoccupied space in which to germinate and grow. Any factor that reduces turf density will invariably favour its invasion. Traffic was identified as a key factor that favoured the presence of *P. annua*. Greens with limited pin placements, poor traffic access and small greens are most susceptible.
- **Greens design:** Greens that have poor surface drainage (e.g. gutters through the centre of greens, surface drainage towards the fronts of greens, the lack of multiple runoff areas and surface drainage into key pin areas), will have a greater *P. annua* population.
- **Nutrition:** For many years there has often been a strategy of 'starving' out the *P. annua* by maintaining very low levels of fertility, in particular nitrogen. What has become apparent

is that it is not so much about the quantity of nitrogen applied but when. A key aspect to *P. annua* control is to maintain the density of the bentgrass so that it can resist invasion during the autumn/winter periods of the year.

HOLISTIC APPROACH

From all the research that has been undertaken, do not be mislead – *Poa annua* is a highly diversified and successful weed species. There are no 'silver bullets' and a successful programme of suppression involves all facets of turf management. From the research that has been undertaken there are some simple rules to consider if a successful control strategy is to be employed;

- Identify the predominant *P. annua* types – if there is a high proportion of perennial types don't waste your time on herbicides. If you want 'Poa free' greens, fumigate and start again and in the meantime maintain suppression with paclobutrazol.
- A 'whole of golf course' approach needs to be taken to control all sources of *P. annua* infestation. This requires controlling it in the fairways and roughs as well as the greens and green surrounds.
- Use pre-emergent herbicides on the green and on all areas outside of the green.
- *P. annua* control must start at day one in the life of the green.
- Effective control will involve multiple strategies including moisture control, herbicides and fertility management.
- Hand weeding is a legitimate and important part of the control strategy.
- Maintain high turf density in the bentgrass going into winter.
- Minimise coring and scarifying, particularly in autumn. Note that thatch control is still critical and other programmes such as dusting and regular mini-tying (and dusting) during summer must be employed.
- Control the factors that favour *P. annua* such as soil compaction, wet surfaces, excessive thatch, traffic and shade.
- Healthy bentgrass turf = 'success'.

Our knowledge of *P. annua* is extensive but we still look for the short cut to success. Do your homework and understand why it is a problem and then implement an appropriate strategy. Sometimes it is better to do nothing and to concentrate on producing a good quality surface rather than chasing the impossible.

Editor's Note: This literature review contains references to several chemicals that are not registered for turf in Australia and under no circumstances should it be implied that they are recommended for use. This article contains many references to research work and a full list of these can be obtained from the AGCSA (03) 9548 8600 or email info@agcsa.com.au. 🍷

“Across all the research that has been undertaken, paclobutrazol features very prominently as a consistently effective method of *Poa annua* suppression.”

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The new AMI Stadium in Christchurch 10 days out from hosting its first Super15 match on 24 March 2012. The four months prior saw the former rugby league ground completely redeveloped to provide the earthquake-damaged city with a temporary facility for sporting and community events

Recycling

AMI Stadium

WORDS: BRETT ROBINSON. PHOTOS: DR RICHARD GIBBS

In what is believed to be one of the biggest turf recycling projects undertaken in New Zealand, the playing surface at Christchurch's earthquake-damaged AMI Stadium has been re-used as part of an ambitious \$NZ20 million project that has seen the construction of a temporary 17,000-seat sporting arena within the space of just four months.

Australian Turfgrass Management readers will be well aware of the dramatic and devastating earthquake which hit New Zealand's second largest city Christchurch last February. In Volume 13.3 (May-June 2011), New Zealand Sports Turf Institute agronomist Jaymie Batchelor, himself a resident of Christchurch, outlined the significant damage sustained to many of the region's sporting venues, among them the city's pride and joy – the 39,000 capacity AMI Stadium which was home to the Canterbury Crusaders Super15 rugby team.

Fifteen months on from the earthquake and AMI Stadium remains desolate and its future is still very much up in the air. Engineering reports tabled to Christchurch City Council in August 2011 confirmed that there was severe damage across the facility and among their many recommendations they earmarked the demolition of the Hadlee Stand. The venue's other stands would also require significant structural repair and consolidation on a level that would be unprecedented in New Zealand.

Out on the ground itself, the entire playing surface would also need to be rebuilt from the base up due to severe liquefaction underneath the surface and in the drainage system, not to mention the physical damage sustained to drainage and irrigation infrastructure.

With AMI Stadium crippled, the city has been without its iconic sporting venue, a place which during winter and summer would be regularly packed with sports-mad Cantabrians. If the damage

to the stadium wasn't a big enough blow, one of the more heartbreaking announcements in the months following the earthquake was the decision by the 2011 Rugby World Cup organising committee to pull the seven tournament matches, including two quarterfinals, scheduled at AMI Stadium.

\$NZ20MILLION TEMPORARY FIX

Without an outdoor venue for major sporting fixtures and other community events, in September 2011 a bold plan was hatched to convert another of the city's sports facilities, Rugby League Park in the suburb of Addington, into a temporary 17,000 seat stadium.

The principal idea behind the project was to provide the Canterbury public with a temporary rectangular arena, expected to have a life of between 3-5 years, which would become the city's major sporting venue until the future of AMI Stadium was decided upon. Such a facility would be flexible enough to be used for the likes of Super15 and ITM Cup rugby fixtures, NRL and A-League matches and concerts, with the potential to increase seating capacity to 25,000 for major sporting events such as rugby Test matches.

With funding underwritten by the New Zealand Government and support from the Christchurch City Council and the New Zealand Rugby Football, the \$NZ20 million plan, which was officially announced by New Zealand Prime Minister John Key in early November 2011, was ambitious to say the least.

It involved the demolition of Rugby League Park's two existing stands and the construction of two new partially covered stands on either side of the playing surface, with a third open air stand at one end. On the ground, the existing playing surface would be ripped up, re-levelled, a new drainage and irrigation system installed and an international-calibre playing surface laid.

What made the project even more challenging was the timeframe in which it needed to be completed by – 24 March 2012, the Canterbury Crusaders' first Christchurch home game of the 2012 Super15 season. In effect just four months.

NOVEL IDEA

As an army of architects, engineers and builders went to work on the stadium design and construction, down at ground level the man charged with making the playing surface a reality was Terrafirma Turf's Chris Lewis. Up until the 2011 earthquake, Lewis had called AMI Stadium home for the past 16 years. Lewis was employed as curator back in 1995 when the stadium was then known by its original name, Lancaster Park, and over the years he has witnessed some of New Zealand and Canterbury rugby's finest moments. Three years ago Lewis started up his own company called Terrafirma Turf and took the maintenance contract for AMI Stadium with him.

Following the earthquake, Lewis and his crew of five had only ventured back to AMI Stadium a



handful of times, but when the plan to build the temporary stadium in Addington started gathering momentum he was approached by the Canterbury Rugby Union seeking advice on installing the new playing surface.

After looking at the options and with little money at his disposal, Lewis came up with the novel idea of harvesting the turf off AMI Stadium and laying it on the new site, essentially recycling it. Of the 16,000m² of Motz stabilised perennial ryegrass turf at AMI Stadium, which was about four years old, Lewis estimated that around 8000m² was salvageable. The problem was, however, that the turf had more

Turf at the earthquake damaged AMI Stadium was brought back to health following eight months of neglect after the February 2011 earthquake and then harvested to use on the new site. The mound to the right of the photos is a pocket of liquefaction



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Above: Silt from liquefaction deposited in a lateral pipe drain at AMI Stadium

Right: Harvesting the Motz stabilised turf from AMI Stadium for recycling at the new temporary stadium in Addington



or less been abandoned ever since the earthquake hit. Needless to say the state of the ground was dire when Lewis was given the all clear in October, some eight months after the earthquake, to go back into AMI Stadium and start implementing a programme to revive the once pristine surface.

"She was pretty bloody ugly," recalls Lewis with a laugh. "It was borderline dead which was no surprise considering there had been no mowing, fertilising or watering for the best part of eight months and there were weeds everywhere."

"The turf was crusty and dry but there were a few green patches here and there and once we got a temporary irrigation system rigged up and started fertilising we could see it starting to come back."

Over the next 12-16 weeks, Lewis and his team gently and painstakingly coaxed the playing surface back with regular fertilising, watering and application of wetting agents to get it in a state where it would be ready for harvest. Lewis says one of the most critical aspects was ensuring they promoted the right kind of growth.

"Because it was a Motz turf system, we didn't want to encourage root growth," explains Lewis. "We were only foliar feeding the turf to keep the top alive because if we got excessive root growth it would make it more difficult to harvest."

At the same time that Lewis and his team went about nurturing the AMI Stadium surface back to health, they were also across at the new temporary stadium site where the existing pitch was removed, re-levelled and a new drainage and irrigation system installed.

What made this aspect of the project challenging was that they had to do it in stages, rather than all at once. Due to the sheer volume of work that was going on – at times there were some 400 construction workers and builders on site – Lewis and his team would get 15m long sections of the

playing surface at a time. They would install the system of lateral and sand slit drains and irrigation system infrastructure in that area and then wait until the next section became available.

A GOOD HARVEST

While getting the surface back to a suitable standard proved relatively straightforward, harvesting had its own challenges. Early on in proceedings Lewis conducted a trial to see how the Motz system would withstand harvesting. Cutting at 60mm, the turf came up "like a dream", but when harvesting for good began in earnest a problem quickly became evident.

As cutting began, they discovered that in parts liquefaction had come up underneath the Motz system and had stuck to the bottom of the stabilising mesh. This had set hard and as a result Lewis and his staff literally had to hand scrape every roll of turf they harvested. It was so hard in some places that the turf would literally snap in half and what was supposed to be a week-long harvesting process took upwards of a month.

One thing that was working in Lewis' favour however was the fact that in the years after the Motz had been laid he hadn't needed to carry out much physical treatment through the profile. This meant that the backing material was more or less undamaged, which in turn allowed 60mm thick turf to be harvested and re-laid at Addington intact.

Laying turf at the new site started on 15 February 2012 with the last roll of the 120m x 70m playing surface put down on 18 March, just six days out from the Crusaders' match against the South Africa-based Cheetahs. The Saturday before the game Lewis was able to apply fertiliser and topdress with 100m³ of sand, while four days out from the game



At the same time as nurturing the old AMI Stadium turf back to health, Lewis and his team set about re-levelling the Rugby League Park site and installing a new drainage and irrigation system

CONTINUED ON PAGE 38

“The result of the world’s best netting technology is clear”.



The Metropolitan Golf Club - Melbourne. 24m high safety screen adjacent to practice fairway.

High safety screens are becoming an important yet sometimes unwelcome development on golf courses and ranges around the world – often driven by risk of litigation but also by responsible management of potential safety issues.

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“On behalf of the Committee and Members of The Metropolitan Golf Club I wish to confirm our satisfaction with the work undertaken and the result.

I have already received many compliments from members, most of whom (previously) felt the high fence would be a visual intrusion on our lovely course. That the net is almost completely transparent is quite amazing”.

Allan Shorland
Secretary Manager
The Metropolitan Golf Club



Terrafirm Turf's Chris Lewis stands on what is now left of the old AMI Stadium surface following harvesting. The Hadlee Stand in the background, which suffered significant structural damage from the earthquake, has been earmarked for demolition



CONTINUED FROM PAGE 36

a five metre wide perimeter strip of turf outside the playing surface was installed. In total the project saw around 9500m² of turf laid.

Like the playing surface, much of the infrastructure used in the stands and elsewhere around the new stadium has been recycled from New Zealand's other major sporting venues. Temporary seating from last year's Rugby World Cup has come from Eden Park where it was no longer required, while toilet and food outlets were also shipped down from Auckland.

Stadium lighting (the venue is lit to broadcast standard) has come from Dunedin's Carisbrook ground, which was recently superseded by the new Forsyth Barr Stadium development, the world's first permanently closed roofed stadium to boast a grass playing surface (see ATM Vol 13.5). Corporate boxes were installed into custom designed, lightweight prefabricated buildings lifted into place at the top of the northern stand and where possible furniture and fittings have been borrowed from the old venue.



Re-laying the AMI Stadium turf at the new site. Starting on 15 February, the last roll of turf was put down just six days out from the ground's first match on 24 March



MASSIVE EFFORT

In what was an emotional homecoming, the Crusaders stepped out onto the new ground on 24 March and failed to disappoint their faithful fans, christening their new home with a last minute 28-21 win over the Cheetahs in front of a sell-out crowd. The new stadium, which will be known as AMI Stadium after AMI bought the naming rights to it, will host a total of seven Super 15 games through until the qualifying finals in mid-July, but the big one will come on 16 June when the All Blacks play a Test match against Ireland.

Despite only being completed just a few days before the opening match, the ground performed exceptionally well and Lewis says that he is looking forward to seeing the recycled playing surface improve over time.

"We were lucky in that we knew the Motz product and what we were dealing with, so once we laid it down we knew it would perform pretty well straight away for that first game," says Lewis. "If you had have put a level across it there would have been a few bumps there, but as we maintain it and as each game passes the surface will only get better.

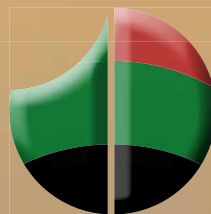
"Looking back it was a massive project and I'm very proud of what we achieved. A lot of people said at the start that what we were doing couldn't be done, but we were pretty confident it would work, although we didn't want to shout too loud just in case it backfired. Not only did we prove to ourselves that we could do it, we proved to a lot of other people that it could be done which was very satisfying."

ACKNOWLEDGEMENTS

ATM would like to thank Chris Lewis (Terraforma Turf) and Dr Richard Gibbs (STANZ) for their assistance in putting this article together. Chris Lewis would like to acknowledge the support of the turf industry for this project, in particular Peter Barwell (Advanced Irrigation), Mark Shaw (PGG Wrightson Turf) and CB Norwood Distributors Kubota. 🙌



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MELBOURNE 2012

28th Australian Turfgrass Conference and Trade Exhibition

Official Guide

Melbourne Convention
and Exhibition Centre
4-8 June 2012



Welcome to Melbourne

Welcome everyone and a big thank you for making the important decision to attend the 28th Australian Turfgrass Conference and Trade Exhibition at the Melbourne Convention and Exhibition Centre. As always, the Australian Turfgrass Conference is proud to bring together the Australian turf industry for another week of top class education, networking and social gatherings for the benefit of all turf professionals.

The AGCSA is also extremely proud this year to be the host of the International Summit, which will bring together many superintendent associations from around the world to Melbourne for the week. This group of international visitors will be meeting to share ideas and ensure that turf associations around the world are developing with common goals and objectives. This is an exciting time for the AGCSA as it will be our first opportunity to host this event and I am confident we will all show these international guests the best of Australian hospitality.

If you study this year's conference programme you will see that once again a wide variety of presenters will converge to provide world class education and knowledge on various topical issues relating to the profession, both in Australia and worldwide. The wonderful AGCSA staff, in particular events and education manager Simone Staples, have again gathered some fantastic experts from all over the globe to share new ideas to help us develop as turf managers.

This fine collection is headed by Dr Frank Rossi, Associate Professor, Turfgrass Science, Cornell University. I was fortunate to meet Frank and attend a day-long workshop in the UK this year at the BIGGA/BTME conference in Harrogate. Frank will be covering some interesting subjects and will treat us all to some entertaining and sometimes confrontational discussions... his sessions are not to

be missed. Other agronomic experts presenting include Jyri Kaapro, Don Loch and Phil Ford, so we are in for a few days of great content.

As well as the traditional Golf and Sportsfield streams, there will also be dedicated programmes for general managers, turf technicians and golf course architects, making this conference a must-attend for all sectors of our industry.



As ever, I am most grateful to our wonderful trade members who have again shown overwhelming support for this year's trade exhibition. Exhibition space has sold very well, due to the hard work of AGCSA business relationship manager Melissa Wallace, and without this tremendous support we would find it very difficult to run such a successful event. I encourage all delegates to take the time to have a thorough look through this year's trade exhibition and see what our valued trade has to offer. Please support those trade members who support our industry.

The week will not be all hard work and we should all be given the opportunity to socialise with our friends and colleagues, both old and new. The AGCSA team has organised some exceptional social gatherings where delegates can unwind while meeting up with old friends and associates from conferences past. Here you will have the chance to network with your colleagues at some great venues in a relaxed atmosphere.

I look forward to meeting as many of you as possible in Melbourne and I am sure you will all have a wonderful week of education and networking. The most important thing though is have fun and make sure you get the most from your conference experience.



ALLAN DEVLIN,
PRESIDENT, AGCSA

28TH AUSTRALIAN TURFGRASS CONFERENCE AND TRADE EXHIBITION



Phil Ford



Don Loch



Jyri Kaapro

In conjunction with major sponsors **Toro, Syngenta, Jacobsen, Rain Bird** and **John Deere**, the AGCSA extends a hearty welcome to delegates of the 28th Australian Turfgrass Conference and Trade Exhibition at the Melbourne Convention and Exhibition Centre (4-8 June).

Every year the Australian Turfgrass Conference prides itself on bringing together the industry for a week of cutting edge education and networking and the 2012 event will again have something for all sectors of the industry, whether you are a superintendent, curator, apprentice, trade member, turf technician, general manager or course architect.

To ensure that the conference keeps abreast of the times and taking on board the feedback of delegates from past conferences, there have been a few tweaks and additions to this year's education component which it is hoped will enhance the experience for delegates.

As well as the traditional Plenary sessions to open the conference on Tuesday and the separate

Golf and Sportsfield sessions on Wednesday, the programme for Thursday has been modified and split into 'Agronomic' and 'Management' streams which delegates who have registered in either the Golf or Sportsfield streams can pick and choose from to attend.

The 'Agronomic' stream will include presentations on the AGCSA's recent HAL-funded project work, including the recently completed three-year bentgrass variety assessment trials and golf course benchmarking study. Initial findings from the carbon benefit and biodiversity study in conjunction with Melbourne University will also be presented.

Other presentations will be made by **Mark Coffelt** (new fungicide mode of action), **Jyri Kaapro** (controlling parasitic nematodes), **Don Loch** (screening warm-season grasses for tolerance to Group A herbicides), **Phil Ford** (organic matter) and conference keynote **Dr Frank Rossi** (resource efficient sportsturf management).



PHOTO: JOHN COLLINGS

The Melbourne Olympic Parks Trust precinct, which among other venues includes AAMI Park and Rod Laver Arena, will be the subject of an 'End Users Forum' in this year's Sportsfield Stream. Delegates will also get the opportunity to visit the precinct on Friday's Turf Tour

The 'Management' stream will include workshops on social media (conducted by **Nadeem Zreikat** and **Robin Doodson**) and behavioural profiling (hosted by leadership and people skills development expert **Sharon Kaibel**).

INTRODUCING DR FRANK ROSSI

The AGCSA is delighted to present **Dr Frank Rossi**, associate professor of turfgrass science at Cornell University, to Melbourne as one of this year's conference keynote speakers.



Dr Rossi is one of the industry's foremost researchers in the areas of nutrient management, mowing technology and non-chemical pest management programmes for golf and sports turf. In his educational programmes, Dr Rossi places firm emphasis on improved environmental compatibility, increased resource efficiency and believes strong problem-solving skills are a must for turf students and professionals alike.

Dr Rossi will be making a number of presentations across all streams during his time in Melbourne, including talks on:

- **Organic or biologically based cultural and pest management programmes in the real world:** This talk is based around a 10-year research project that Dr Rossi was part of at Bethpage Golf Club in New York (**Plenary Session, Tuesday 1.30pm**);
- **Sustainable turf management programmes:** This session will address practical aspects of sustainable turf management with an emphasis on climate change and carbon economy and easy-to-implement management practices (**Sportsfield Stream, Wednesday 9.45am and Golf Stream, Wednesday 11am**).
- **Resource efficient sportsturf management:** This seminar will focus on mowing, fertilisation,

cultivation and pest management programmes and will aim to challenge conventional thinking about current cultural management practices with an eye on improved efficiency (**Agronomic and Management Streams, Thursday 2.30pm**)

Dr Rossi's sessions underpin what is a diverse education programme in Melbourne and some of the other highlights this year will include:

- **Simon and Marina Bourne:** Everyone will have read about the tragic holiday accident in 2010 which left Cottesloe Golf Club course superintendent **Simon Bourne** confined to a wheelchair. Through the incredible support of friends, family and the turf industry Simon was back at work within six months. The AGCSA is delighted to have Simon and wife **Marina** join us in Melbourne and they will look at the life-changing events of the past couple of years. Their session dovetails with **Gerry Power's** talk on financial planning as well as **Dr John Riley's** opening plenary address on men's health issues. (**Plenary Session, Tuesday 8am-11.45am**)
- **MOPT End Users Forum:** The Melbourne Olympic Parks Trust (MOPT) precinct covers a number of sports and professional clubs all within a stone's throw of the Melbourne CBD. This forum will include personnel from teams that use the turf surfaces within the precinct (e.g.: AAMI Park). These include the likes of the Melbourne Storm, Collingwood Football Club, Melbourne Victory, Melbourne Rebels and Melbourne Football Club. These end users will join MOPT horticulture manager **Adrian Black** in discussing what they, from their perspective, are looking for from the surfaces and how they communicate with the groundstaff. Not to be missed. (**Sportsfield Stream, Wednesday 11.40am**)



The Bourne family



Gerry Power



Michael Bradbery



Cameron Sutherland



John Neylan



Daryl Sellar



Andrew Peart



Nadeem Zreikat



Robin Doodson

- **Manly Golf Club redevelopment:** If you read course superintendent **Michael Bradbery's** extensive piece in this year's conference Proceedings, you will get an idea of just how much work has gone into the Manly Golf Club course redevelopment project in recent years. Michael will be in Melbourne to provide an overview of this massive project on Sydney's North Shore. (*Golf Stream, Wednesday 9.40am*)
- **The WACA – The Science Behind the Bounce, Part II:** WACA curator **Cameron Sutherland** will make a follow-up presentation to last year's talk in Adelaide on the rebuilding of the wicket table at Perth's iconic cricket ground. His 2011 Sportsfield Stream presentation covered the search for the right wicket soil, from the use of old documentation and soil tests, through to working in the field finding and analysing potential clay sources. This year's talk will examine the work that went into choosing the right grass species, its establishment across the block and managing the new wickets while the arena was in play. (*Sportsfield Stream, Wednesday 2.30pm*)
- **Sustainable golf course management:** **Philip Russell**, assistant to the director – golf course management at The R&A will be venturing to Melbourne as part of the International Summit which will be held the weekend before the conference. Philip will join with local experts **John Neylan** and **Daryl Sellar** to discuss the business of golf course management sustainability (*Golf Stream, Wednesday, 12pm*)
- **Controlling parasitic nematodes - where to from here?** In Australia fenamiphos has been the only nematicide registered for the control of nematodes in turf situations. With fenamiphos now under review by the regulatory authorities and questions remaining about its availability in the future, **Jyri Kaapro** (Bayer Environmental Science) will look at practices to help manage turf affected by the presence of parasitic nematodes, and if there are any new or emerging products that may assist. (*Agronomic Stream, Thursday 11am*)
- **Social Media 101:** Love it or loathe it, social media is here to stay. This workshop, conducted by **Nadeem Zreikat** (Colin Campbell Chemicals) and **Robin Doodson** (Sanctuary Cove G&CC) will offer a general introduction to social networking websites and how to use social media as an effective business tool. Concentrating on turf related apps, blogs, Twitter and Facebook, this is a great workshop for those who want to make more use of their smart phones and social networking but are not sure how. (*Management Stream, Thursday 8.30am*)
- **Turf Tour:** If you are attending the MOPT End Users Forum mentioned above, then do not miss the Friday Turf Tour. Delegates are invited to join **Adrian Black** for a tour of the entire MOPT precinct, including Gosch's Paddock, AAMI Park, Rod Laver Arena and Hisense arenas. This will be a great opportunity to see some of Melbourne's iconic sporting facilities. (*Turf Tour, Friday 9.15am*)

2012 AGCSA GOLF CHAMPIONSHIPS

Two of Melbourne's iconic sandbelt golf clubs – Commonwealth and Metropolitan – will be dual hosts of this year's revamped Toro-sponsored AGCSA Golf Championships. Following a detailed review of AGCSA golf events and subsequent discussion with AGCSA staff, sponsors Toro and trade representatives, the AGCSA Board has made a number of changes to the golf tournaments which will be held on Monday 4 June.

Among the changes include the addition of a Nett title and a new state teams format, while a separate trade teams competition will also be held which replaces the AGCSA Scramble. Players will now also be required to have an official handicap and your handicap will determine which competition and which course you play.



Commonwealth Golf Club will be host venue for the revamped Toro AGCSA Golf Championships

Commonwealth (host superintendent and AGCSA member **Mark Prosser**) will host the Stroke, Nett and State Teams events, while Metropolitan (host superintendent and AGCSA member **Glenn Stuart**) will host the Stableford competition, with a total field (across both courses) limited to 140. This year's presentation lunch will be held in Commonwealth's impressive clubhouse and those who play Metropolitan will be bussed over to Commonwealth following their round.

As well as these changes, a new trade championship event is set to replace the AGCSA Scramble. Woodlands Golf Club (host superintendent and AGCSA member **Rod Tatt**) will host the AGCSA Trade Championships which will also be held on Monday 4 June with both team and individual stableford titles up for grabs.

This tournament is open to all AGCSA and state superintendent association trade members with companies having the ability to enter multiple teams. Teams comprise three members with the best two stableford scores counting (the third score will come into play in the event of a tie). An official handicap is required and mixed teams are not allowed.

ALSO PRESENTING IN MELBOURNE...

Stephen Bernhard (Bernhard & Co)
Dr Van Cline (Toro)
Mark Coffelt (DuPont)
Scott Dufek (Lastec)
Rebecca Dynon (Racing Victoria)
Tim Fankhauser (The Dunes)
Barry Fraser (VIC)
John Geary (AGCSATech)
Andrew Peart (AGCSATech)
Dr Henk Smith (Syngenta)



Dr Henk Smith



Rebecca Dynon



Tim Fankhauser



Dr Van Cline



**JOHN DEERE
GOLF**



EVENT INFORMATION AND CONFERENCE REGISTRATION

The conference registration desk will be located in the main foyer of the Melbourne Convention and Exhibition Centre (MCEC). Delegates are requested to visit the registration desk upon arrival to receive their conference accreditation and delegate satchel. The registration desk will operate at the following times:

Sunday 2.30pm-4.30pm
Monday 9am-4pm
Tuesday 7am-4pm
Wednesday 8am-1.30pm
Thursday 8am-3pm

2012 TORO AGCSA GOLF CHAMPIONSHIPS

Where: Commonwealth Golf Club and Metropolitan Golf Club
When: Monday 4 June
Details: Buses depart for both clubs from MCEC at 6.45am for an 8am shotgun start. Light breakfast will be served upon arrival. Those playing at Metropolitan will be bussed across to Commonwealth for the lunch and presentation ceremony. Buses to return to MCEC mid-afternoon.

2012 AGCSA TRADE CHAMPIONSHIP

Where: Woodlands Golf Club
When: Monday 4 June
Details: 8am shotgun start (light breakfast available from 7am). Luncheon and presentation ceremony at 1pm.

BAYER ENVIRONMENTAL SCIENCE WELCOME RECEPTION

Where: Showtime Events (located on the Yarra River just past the MCEC)
When: Monday 4 June (7.30pm-10pm)
Details: As we will be in an old boat shed and Melbourne is located on the Yarra River, the theme for the evening will be all things nautical. Free for all fully registered delegates. Additional tickets (\$88) can be purchased from the registration desk.

28TH AUSTRALIAN TURFGRASS CONFERENCE TRADE EXHIBITION

Where: MCEC
When: Wednesday 6 June (9am-5pm) and Thursday 7 June (9am-3pm)
Details: This year's trade exhibition will feature over 70 leading turf management companies exhibiting their products and services. Entry to the trade exhibition is free. If you are attending the trade exhibition only you will be required to fill in a registration form before entering. See later in this guide for a full listing of companies exhibiting. Trade exhibition cocktail opening will be held from 4-6pm on Tuesday 5 June.

2012 AGCSA AGM

Where: MCEC – Room 218
When: Wednesday 6 June (5pm)
Details: Open to all current financial AGCSA members. Two board director positions including president will be up for election.

SYNGENTA PRESIDENTS DINNER AND 2012 AGCSA AWARDS

Where: MCC Members Dining Room, MCG
When: Thursday 7 June (from 6.45pm)
Details: To cap off a week of camaraderie and education we have planned a fantastic night at Melbourne's iconic MCG which includes the 2012 AGCSA Awards. The dinner is an optional extra for all delegates. Tickets can be purchased from the registration desk up until Tuesday. **Dress code:** Semi-formal, dress pants and collared shirt (jacket and tie optional).

POST CONFERENCE TURF TOUR

When: Friday 8 June (9.15am-12pm)
Details: This year's half-day post conference tour visits the Melbourne Olympic Parks Trust (AAMI Park, Gosch's Paddock). Buses to depart MCEC 9.15am.

Disclaimer: The above event information was correct at the time of this edition of ATM going to print. Any changes will be announced during the conference sessions or posted at the registration desk.



Woodlands Golf Club

2012 AGCSA AWARDS – RECOGNISING OUR LEADING PERFORMERS

The 28th Australian Turfgrass Conference will provide an opportunity for the industry to recognise its outstanding leaders through the bestowing of the 2011 AGCSA Awards. Five AGCSA awards will again be handed out in Melbourne along with the STA/TGAA National Sports Turf Graduate Award which was bestowed for the first time at last year's conference in Adelaide. The AGCSA awards include:

- **AGCSA Distinguished Service Award**, bestowed by the **AGCSA Board**;
- **AGCSA Excellence in Golf Course Management Award**, presented in partnership with **John Deere**;
- **AGCSA Claude Crockford Environmental Award**, presented in partnership with **Bayer Environmental Science**;
- **AGCSA Graduate of the Year Award**, presented in partnership with **Toro Australia**;
- **AGCSA Award for Academic Achievement**, presented in partnership with **PGG Wrightson Seeds**

The AGCSA is delighted to welcome Bayer Environmental Science as new sponsor of one of the AGCSA's premier awards in 2012 – the AGCSA Claude Crockford Environmental Award. This award has become one of the most sought after at the annual presentation ceremony and always attracts a highly competitive field of nominees. Winning the AGCSA Claude Crockford Environmental Award provides a huge fillip for the superintendent and their crew and the AGCSA is very grateful to Bayer Environmental Science for recognising the stature of this award by being its principal sponsor.



Perhaps the most hotly contested awards are those which recognise the industry's up and coming turf practitioners. The AGCSA Graduate of the Year Award has, since 1996, been awarded to the country's top apprentice and every year the calibre of finalists improves. Quickly developing a similar reputation is the AGCSA Award for Academic Achievement which is bestowed upon an individual who has excelled in the Diploma of Sports Turf Management course.

Tim Fankhauser was last year's popular recipient of the latter, making it two from two for Chisholm TAFE graduates. Tim will be presenting during the Melbourne conference on his trip to New Zealand courtesy of award sponsors PGG Wrightson Seeds. Likewise, inaugural National Sports Turf Graduate Award winner Rebecca Dynon will be giving a talk on her time at the University of Massachusetts' Winter School for Turf Managers, which was part of her prize from sponsors Toro Australia.

Here, then, are the finalists for both the AGCSA and STA/TGAA graduate awards and the AGCSA Award for Academic Achievement. The AGCSA, together with the STA and TGAA, congratulate all finalists for their efforts in making the national finals.

industry. His application in class was consistent, professional and thorough, and by his example he raised the academic output of his fellow students. Craig's assessments, including any written reports, were always very professionally presented and his presentations were interesting and informative.

Recently, Craig achieved the goal of becoming 3IC at the exclusive Pennant Hills Golf Club in Sydney's north working under course superintendent Richard Kirkby. He has made an impression at the club since arriving and is in charge of greens pest control and greens nutrition.



BEN LUCAS

**Tocumwal Golf Club
Wodonga TAFE, VIC**

Ben began his career in the turf industry as an apprentice at the Hume Country Golf Club before relocating to finish his apprenticeship at Corowa Golf Club. He completed the final year of his studies in 2006 and stayed on at Corowa, eventually becoming a senior greenkeeper.

In 2009 Ben was successful in being appointed assistant course superintendent at Tocumwal Golf Club working under course superintendent Matt McLeod. Ben has been in this role for the past three years and has done a fantastic job in assisting Matt with managing the staff, the 36-hole golf course and supporting several apprentices and trainees through their respective programmes.

Ben began his Diploma studies at the start of 2010 and completed his final unit in late 2011. During the two years of Diploma study Ben proved to be an extremely reliable and conscientious student. Ben's supervisors were impressed with his passion for the industry, his work ethic and the sound knowledge base that he has built through his studies and his experiences on golf courses.

AGCSA AWARD FOR ACADEMIC ACHIEVEMENT

Presented in partnership with
PGG Wrightson Seeds

PGG Wrightson Seeds



CRAIG GEEVE

**Pennant Hills Golf Club
NSI Ryde College, NSW**

Craig has been a student at NSI Ryde College since the start of 2006 when he began his Certificate III studies. In June 2010 he successfully completed the Certificate IV in Sports Turf Management and in December 2011 completed the Diploma of Sports Turf Management. During the Certificate IV and Diploma courses Craig consistently showed his dedication to his studies and to progressing his ambitions in the industry.

His willingness to contribute in class and help other students in the class makes him stand out as a person who will progress a long way in the



KANE MCKARTIN

**Mornington Racing Club
Chisholm TAFE, VIC**

Since starting his turf management studies at Chisholm as an apprentice in 2002, Kane has developed into an accomplished, confident turf practitioner. Kane's attitude and overall approach towards education and his career resulted in his nomination as Outstanding Apprentice of the Year in 2003 and 2004.

Kane gained valuable experience at Mornington Racing Club during his apprenticeship. Upon completion of his apprenticeship, he gained a position at Sorrento Golf Club where he worked for two years before moving to The National Golf Club for a further two years.

In 2009, Kane returned to Mornington Racing Club after being appointed assistant track manager working alongside course manager Michael Suey.

Kane has been actively involved in the complete reconstruction of the course proper at Mornington, including a new irrigation system, bringing recycled water online and managing staff and contractors throughout this process. Since completion of his Diploma studies Kane continues to work at Mornington and has developed into a very competent turf manager.



GERRI O'CALLAGHAN

**Sandringham Golf Links
NMIT, VIC**

Whether on the golf course or in the classroom, Sandringham Golf Links assistant superintendent Gerri O'Callaghan never fails to impress. Originally hailing from Cohuna, Gerri moved to Melbourne in 2007 to work on the groundstaff at the Sandhurst Club during which time she completed her Certificate III studies through NMIT.

Gerri followed this up by enrolling in the Diploma course the following year, where her input to the class was always beneficial and would often lead to stronger discussions among the class. The quality of her assignment work was of the highest standard and could easily be presented to any forum.

An accomplished golfer who has won four club championships at both Cohuna and Rich River golf clubs as well as being a Pennant player for Southern Golf Club, Gerri's interest and ability in golf has led her down the path to a successful career in turf management.

Her exemplary work ethic and drive to succeed in the trade led to her new position as assistant superintendent at the Sandringham Golf Links and she is one of only a handful of women that has worked their way up to a managerial role in what is a male-dominated industry.



SCOTT ROBERTS

**Sebastopol Bowling Club
Ballarat University, VIC**

Scott Roberts is a highly regarded greenkeeper at Sebastopol Bowling Club as well as an elite-level bowler. He completed his Diploma studies in 2011 and in that same year won the Ballarat Region Pennant grand final with the Sebastopol team and finished runner-up in the state pairs.

Prior to his career in turf, Scott worked in a foundry, but his love of the game convinced him to switch to greenkeeping six years ago. During his Diploma studies Scott achieved excellent results in his exams and readily applied the skills and knowledge gained on the course to the management of his greens.

Scott's research project, conducted in the summer of 2010/11, was an example of his uncomplicated approach. He had identified a problem of excessive heat on synthetic bowling greens, found that there was very little research on

the topic, devised a simple but fair and unbiased trial, collected data and applied the relevant statistical treatment and compiled a report that is clear and indisputable. This report has already been forwarded to the RVBA and Bowls Australia and could have enormous ramifications for the use of synthetic turf in bowls and other sectors of the industry.

AGCSA GRADUATE OF THE YEAR AWARD

Presented in partnership with Toro

ACT

Mark Spicer

The Moorings Golf Course

The elder statesman of this year's AGCSA Graduate of the Year Award field, 47-year-old Mark Spicer hails from Mossy Point, just north of Moruya on the south coast of NSW. Married 21 years with three children, Mark works at The Moorings Golf Course, a nine-hole par three course which forms part of The Moorings Resort. The Penncross bentgrass greens measure 5000m² with the remainder of the course kikuyu. The longest hole measures just 190m and shortest 80m. In the near future a floating golf range and mini-golf facility will be built on site along with a supermarket, tavern and restaurant.

Mark's entry into the turf management professional certainly wasn't through conventional means. It was 13 years ago when he drove past The Moorings course and thought to himself that it looked like a great place to work and better than his then job of ripping ironbark fence posts. Hired initially as a labourer, five years ago the former superintendent left and Mark inherited the job. It was then that he decided to go back to school after some 30 years, completing his Certificate in Turf Management through the Canberra Institute of TAFE.



NEW SOUTH WALES

**David Canterbury
Adelaide Shores**

Former Kiama Golf Club apprentice and assistant superintendent David Canterbury had an Easter to remember. Not only did he turn 21, but the week before he was bestowed the NSWGCSA's Vince Church Graduate of the Year Award, beating home a strong field of five other finalists to represent the association in the final of the national award.

David, who was appointed assistant superintendent at Adelaide Shores under Tim Warren only earlier this year, served his apprenticeship at Kiama Golf Club on the NSW south coast and completed his Certificate III Horticulture (Turf Management) through Yallah TAFE. As a second year apprentice at Kiama, in 2008 David was promoted to 2IC by course superintendent Mark Yates, such was his ability and professionalism.



**JOHN DEERE
GOLF**



PGG Wrightson Seeds

AGCSA
Australian Golf Course Superintendents Association



As assistant superintendent, David undertook a myriad of responsibilities at Kiama and took over the day-to-day running of the course when Yates was away. Such was his proficiency that when he applied for the Adelaide Shores job, he beat home a field of more than 30 applicants for the job. David now hopes to further his turf management studies while in South Australia by undertaking the Diploma of Sports Turf Management.



QUEENSLAND

Nick Reeves

Murwillumbah Golf Club

Young Murwillumbah Golf Club greenkeeper Nick Reeves was awarded the GCSAQ Golf Course Turf Apprentice of the Year in a very close result from fellow finalists Scott Fletcher (Jindalee Golf Club) and Michelle Musgrave (Cairns GC). Nick is the first apprentice at Murwillumbah to be kept on as a greenkeeper following the completion of his apprenticeship.

Murwillumbah course superintendent Brian Cox commented in his nomination letter that Nick deserved to win the GCSAQ award because of his dedication, thirst for learning the art of greenkeeping and the manner in which he went about assisting presenting the golf course in best possible condition.

Nick joins an elite band of five former state graduate winners who have completed their training at Wollongbar TAFE, three of whom have gone on to win the national award – 2010 recipient Adam Shields (Casino Golf Club, NSW), 2008 winner Chris Thompson (Maclean Golf Club, NSW) and 2006 recipient Sean Kinsley (Yamba Golf Club, NSW).



Working at Ivanhoe, Nick was given the chance to experience a raft of turf management duties and formed part of a small yet dedicated team to present the course in the best possible condition. With such a small team it was important for everyone on staff to have experience in all aspects of course presentation as well as have the ability to work closely as a unit.

Nick's time at Ivanhoe paved the way for him to join the crew at Rosanna Golf Club earlier in 2012 where he has quickly become a valuable asset to course superintendent Dean Bailey, so much so that he was named the VGCSA's Graduate of the Year at the recent AGM held at Royal Melbourne Golf Club. Outside of work, Nick enjoys photography and travelling and in 2011 had the opportunity to travel to nine different countries.



WESTERN AUSTRALIA

Jeremy Malkin

Mosman Park Golf Club

Jeremy completed his apprenticeship at Mosman Park Golf Club and as the 'old man' of the class was successful in winning the TAFE Student Award.

Jeremy has a genuine interest in the golf turf management industry and is passionate about his position at Mosman Park, which is located just five minutes from the centre of Fremantle. Due to his keen observational skills, his dedication to learn and desire to see Mosman Park improve as a golf course, Jeremy was quickly promoted to assistant by course superintendent Neil Jones.



NATIONAL SPORTS TURF GRADUATE AWARD 2011

Presented in partnership with Toro



ACT

Damien Miller

Young Bowling Club

Damien's passion for greenkeeping and bowls is apparent in his work at Young Bowling Club where he has worked for the past three-and-a-half years. From day one at the club he was cutting, rolling and marking out the greens and loves the fact that there are always different things happening on the greens and he is continually learning about their management. Damien also plays a lot of bowls and has won a few club, district and zone titles in his short bowling career. He strives to be the best greenkeeper he can and one day an expert on bowling greens.



NEW SOUTH WALES

Logan Booby

Bathurst Regional Council

Logan has been employed at Bathurst Regional Council for three years and is a valuable member of the staff. He was recently involved in the preparation of one of the council



SOUTH AUSTRALIA

Ryan Smooker

North Adelaide Golf Links

The last state finalist to be confirmed for this year's AGCSA Graduate of the Year Award, SAGCSA representative Ryan Smooker hails from the public access North Adelaide Golf Links. Ryan is very highly rated by his lecturers at Urrbrae TAFE and his peers and should he win this year's national award will become the first recipient to do so from South Australia.

North Adelaide Golf Links is operated by the Adelaide City Council and contains two 18-hole courses – the par 71 South Course and par 69 North Course – as well as an 18-hole par three course.



VICTORIA

Nick Marino

Rosanna Golf Club

Nick's first taste of the turf industry came back in 2007 when he undertook a two-week work placement at La Trobe Golf Club in Melbourne's inner northeast. After giving landscaping a go for a six month period, in 2008 he switched to turf management and began his apprenticeship at Ivanhoe Public Golf Course.



JOHN DEERE GOLF



PGG Wrightson Seeds

AGCSA
Australian Golf Course Superintendents' Association



grounds for a major sporting event for the Bathurst region, an A-League match between Newcastle and Adelaide. The staff received compliments on the preparation and presentation of the surface and they were very proud of the outcome.

Along with rugby, boxing and cricket, Logan is very passionate about his work and long-term ambitions in the turf industry.



SOUTH AUSTRALIA

David Sampson
Belair Turf

David is employed at Belair Turf, Landscape and Irrigation, an organisation that provides construction, maintenance, management and renovation services to a broad range of clients including golf courses, local and state government and sporting and community clubs in South Australia.

Prior to working with Belair, David worked at The Grange Golf Course for three years during which time he gained a lot of experience, particularly with his involvement in the East Course redevelopment. His work, over the past six months at Belair has given him further opportunities to learn and develop his turf management skills.



VICTORIA

Tim Hunt
Scotch College

Tim has been working at Scotch College in Melbourne since May 2011 and prior

to that worked at Woodlands Golf Club. He enjoys working in a team environment and the constant learning he receives in the day-to-day challenges faced at work.

Tim takes a lot of pride in his work at Scotch and looks forward to continuing his education by undertaking the Diploma in Sports Turf Management and one day taking on the challenges of a management role. He loves AFL football coaching, golf and surfing.



WESTERN AUSTRALIA

Rory Bairnsfather-Scott
WACA

Rory has the honour of being the first WA finalist for this award and for the past three-and-a-half years has been employed by the Western Australian Cricket Association (WACA). While studying horticulture, Rory started working two days a week at a local bowls club. Upon completing his Certificate II he began an apprenticeship at the WACA ground in Perth under curator Cameron Sutherland. He was the winner of the CH Bailey & Son Shield Award for Technical and Further Education at the completion of his apprenticeship.

Rory has been involved in assisting the redevelopment of the WACA's wicket block, the construction of the Murdoch University playing fields and assisting in bulk density testing of the wicket block. His long-term ambitions include travel to further his career and experiences with wickets and turf in different conditions.



JOHN DEERE
GOLF



PGG Wrightson Seeds

AGCSA
Australian Golf Course Superintendents' Association



THE AGCSA WISHES TO THANK THE FOLLOWING COMPANIES AND ORGANISATIONS FOR THEIR SUPPORT OF THE 28TH AUSTRALIAN TURFGRASS CONFERENCE

PRINCIPAL SPONSORS



syngenta



JOHN DEERE
GOLF

RAIN BIRD

JACOBSEN

SUPPORTING ORGANISATIONS



AGIC



Monday

7-00am - 3:00pm

Toro AGCSA Golf Championships
and presentation lunch

7:30 - 10:00pm

Bayer Welcome Reception

Tuesday

Plenary

8.00 - 8.30am

Allan Devlin

Welcome & Awards

8.30 - 9.15am

Dr John Riley

Mens Health

9.15 - 10.00am

Keynote address

T.B.A

10.00 - 10.45am

Morning Tea

10.45 - 11.05am

Simon & Marina Bourne

Moving forward from personal
injury

11.05 - 11.45am

Gerry Power

Planning to ensure your future
financial security

11.45am - 12.30pm

Barry Fraser

Staff recruitment and training

12.30 - 1.30pm

Lunch

1.30 - 2.40pm

Dr Frank Rossi

Organic or biologically based
cultural and pest management
programs in the real world

2.40 - 3.25pm

Henk Smith

Resistance to insecticides

3.25 - 4.00pm

Don Loch

Mites

4.00 - 6.00pm

Trade Show Opening

Wednesday

Golf

8.30 - 9.00am

Tim Fankhauser

Academic Achievement Award

9.00 - 9.40am

Dr Van Cline

The age of precision in turf
management

9.40-10.30am

Michael Bradbery

Manly G.C. redevelopment

10.30 - 11.00am

Morning Tea

11.00am - 12.00pm

Dr Frank Rossi

Sustainable turf programs that in-
clude climate issues and carbon
neutrality

12.00 - 1.00pm

Philip Russell, John Neylan, Daryl
Sellar

The business of sustainability

1.00 - 5.00pm

Lunch/Trade Show/Afternoon Tea

5.00 - 6.30pm

AGCSA AGM

Technicians

8.30 - 10.30am

Workshop session Toro Australia

10.30 - 11.00am

Morning Tea

11.00am - 1.00pm

Workshop session John Deere
Australia

1.00 - 3.00pm

Lunch/Trade Show

3.00 - 5.00pm

TBC

Workshop

11.00am - 1.00pm

Stephen Bernhardt

Better Grass for Less Money

Sportsfield

8.30 - 9.00am

Rebecca Dynon

The UMass winter school
experience

9.00 - 9.45am

Phil Ford

Safer football fields: The role of
the Turf Manager

9.45 - 10.30am

Dr Frank Rossi

Sustainable turf programs that in-
clude climate issues and carbon
neutrality

10.30 - 11.00am

Morning Tea

11.00am - 11.40am

Dr Van Cline

The age of precision in turf
management

11.40am - 1.00pm

Adrian Black and Friends

End Users Forum

1.00 - 2.30pm

Lunch/Trade Show/Afternoon Tea

2.30 - 4.00pm

Cameron Sutherland

The science behind the bounce

4.00 - 5.00pm

Trade Show/Afternoon Tea

5.00 - 6.00pm

STA/TGAA National Executive
Meeting (TBC)



Thursday

Agronomic

8.30 - 9.15am

AGCSATech Update

Bents, Benchmarking and Biodiversity

9.15 - 10.00am

Mark Coffelt

A new fungicide mode of action for disease management programmes

10.00 - 11.00am

Morning Tea/Trade Show

11.00 - 11.45am

Jyri Kaapro

Controlling parasitic nematodes. Where to from here?

11.45am - 12.30pm

Phil Ford

Organic Matter - Friend or Foe

12.30 - 1.00pm

Don Loch

Screening warm-season grasses for Group A herbicide tolerance

1.00 - 2.30pm

Lunch/Trade Show

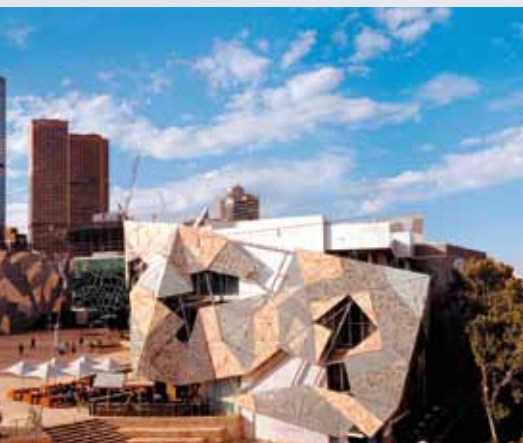
2.30 - 4.00pm

Dr Frank Rossi

Resource efficient sportsturf management, looking at mowing fertilisation, cultivation and pest management programmes

7.00pm - 12.00am

Syngenta Presidents Dinner



Thursday

Management

8.30 - 10.00am

Nadeem Zreikat and Robin Doodson

Social Media 101 - Apps, Tweets, Blogs explained and demonstrated so you can get networking

10.00 - 11.00am

Morning Tea/Trade Show

11.00am - 1.00pm

Sharon Kaibel - Rightturn

Behavioural Profiling - Understanding yourself and others

1.00 - 2.30pm

Lunch/Trade Show

2.30 - 4.00pm

Dr Frank Rossi

Resource efficient sportsturf management, looking at mowing fertilisation, cultivation and pest management programmes

7.00pm - 12.00am

Syngenta Presidents Dinner

Technicians

8.30 - 9.15am

Scott Dufek

New technology in articulating rotary decks for mowers and the benefits and savings of belt drive units

9.15 - 10.00am

Dr Van Cline

The age of precision in turf management

10.00 - 11.00am

Morning Tea

11.00am - 1.00pm

Workshop Session Jacobsen Textron

1.00 - 3.00pm

Lunch/Trade Show

3.00 - 4.00pm

TBA

Friday

Plenary

9.00 - 11.00am

Communications Workshop

Sharon Kaibel

Presentation Skills - Getting your point across

9.15am - 12.00pm

Turf Tour

Melbourne Olympic Parks Trust hosted by Adrian Black

Buses depart Convention Centre at 9.15am.



Disclaimer: The above event information was correct at the time of this edition of ATM going to print.

28th Australian Turfgrass Conference Trade Exhibition

More than 70 of the turf industry's leading trade companies, associations and education institutions will be present at the Melbourne Convention and Exhibition Centre for the 28th Australian Turfgrass Conference Trade Exhibition. To be held across the Wednesday and Thursday of conference week (6-7 June), the trade exhibition forms the backbone of the week in Melbourne and this year delegates will get the chance to view all the latest products, services and technology to assist them in their turf management operations.

ABEL SPORTS

Stand 7

Abel Sports is a leading manufacturer and supplier of goal post and sports ground systems for major stadiums, councils, schools and sporting clubs throughout Australia. Abel Sports manufacture and install goal posts for AFL, rugby league, union and soccer. All goal posts are designed to be easily and safely installed/removed and OH&S compliant.

AFL and rugby goals are available in all lengths up to 16m and come with ground tubes, base plates or hinges. Soccer and futsal goals are available for both junior and senior level and semi-permanent or portable soccer goals are also available with rear posts and hinged based net supports. Abel Sports also makes code-approved rugby/soccer combo goals. Post storage systems are also available for both onsite and offsite storage.

Other products include coaches boxes and interchange benches, goal post pads, boot cleaning and goal post lifting systems. Abel Sports also designs and installs barrier/safety netting systems for AFL, soccer and cricket grounds. Recent projects include AAMI Park, Gosch's Paddock, Adelaide Oval, Bellerive Oval and Jiangwan Stadium in China. Abel Sports guarantees all manufactured products (five years), has its own team of installers and guarantees all installations.



ACTIVE SAFETY

Stand 56

Active Safety has been a supplier to the golf industry for over 20 years and specialises in safety equipment, clothing and footwear. We deliver Australia-wide! We will be featuring the Tipezee 200-litre drum tipper, a new innovation to drum handling and decanting, minimising risk of back injuries and liquid spillage.

By removing the need to struggle with large awkward drums and barrels, it makes the handling of liquids easier and less likely to cause an injury. The 'pivot point and tilting action' design enables the drum to be loaded, stored upright and brought to the horizontal



easily. It then allows the drum to return to the upright position, avoiding drips and leaks.

Our extensive range of quality products and services includes uniform and protective clothing; safety footwear; chemical handling – equipment and training; first aid supplies; eye, head, face, hand and respiratory protection; hearing protection and hearing tests; safety and golf course signage; and much more..... We strive for service unequalled by our competitors. For a fast professional response, ring Ted on 0418 108 609 or Ian on 0422 819 130. Email sales@activesafety.com.au, www.activesafety.com.au, or call (03) 9560 4755.

ADE TURF EQUIPMENT

Stand 107

ADE Turf Equipment is pleased to bring together an exciting range of innovative turf equipment to the conference. Shibaura Golf and Turf products include compact tractors, rotary and reel mowers and the amazing Slope Mower CE certified to 25 degrees. Japanese quality at a competitive price.

Ferris commercial zero turn mowers feature unique 4-wheel suspension for maximum operator comfort, productivity and slope performance. Engine options up to the incredible 33hp Caterpillar Diesel. Ferris – the first choice for commercial operators.

Buffalo Turbine boasts the most comprehensive range of turbine blowers in the market. Check out the impressive 40hp Twin Turbine blower along with front mount and PTO versions. Turfex USA manufacture the most cost competitive range of spreaders, bulk material spreaders and sprayers to fit all types of traction units. For the first time in Australia view the new ride-on compact spreader sprayer combination.



ADVANCED SEED

Stand 64

Advanced Seed is a leading importer and provider of turfgrass seed and related products for both the commercial and retail markets throughout Australia. Although only formed



in 2000, the proprietors and management of Advanced Seed collectively have over 100 years of experience in the industry. This has contributed to Advanced Seeds market positioning as one of the leading suppliers of turf seed products in Australia.

Advanced Seed strives to import only the finest quality product from around the world with emphasis on those products suited for Australian conditions. We are actively involved in the testing of new seed varieties with the aim of continual improvement. Our products are used by most of the leading racecourses, golf courses, turf farms, local governments and sporting facilities throughout Australia. Advanced Seed is a wholesale supplier dealing through a group of specialised distributors located throughout Australia.

Advanced Seed aims to be the best supplier in the industry. To achieve this, the company maintains ample levels of quality stock with modern blending facilities and utilises labelling standards endorsed by the Australian Seed Federation. Customer satisfaction is a priority and regular monitoring of our services is undertaken.

ALCO BATTERY SALES

Stand 10

Alco Battery Sales has evolved to become one of Australia's leading battery distributors. As master distributor for Trojan deep-cycle batteries across Australasia, Alco batteries can offer a full range of deep-cycle and automotive industrial batteries. Alco Batteries have a comprehensive distribution network and a large mobile and dedicated sales team who take pride in supplying quality products and after sales service with continuous expansion into new products and technologies.

More than 98 per cent of America's top golf courses use Trojan batteries in their fleets. Why? Trojan invented the golf car battery back in 1952 and has been making superior products ever since. Check under the seat of an electric golf car and you're likely to see Trojan deep-cycle batteries. Built to deliver



superior performance, durability and reliability, these batteries are Trojan's flagship line and can meet the challenges of the toughest, hilliest courses in the world.

Outstanding technical support is available on the phone or web. For more info call 1300 883 643 or visit www.alcobatt.com.au

ANCO

Stand 25

For over 35 years Anco has been growing and supplying quality instant turf to the professional turf industry. Anco turf is grown on fumigated sandy soils ensuring the turf you receive is of the highest purity and weed free. Anco also supplies washed turf in small and big rolls. Our turf range includes greens grade bentgrass, Santa ana, Santa ana Plus, Grand Prix couchgrass, Village Green, kikuyu, Winterkike, tall fescue and Sir Walter buffalo.

Anco can contract grow to specification. Our contract growing and laying projects include turf for resurfacing Flemington and Caulfield racetracks and greens turf for Huntingdale Golf Club. In addition to our extensive turf range, Anco supplies a wide range of sod quality turf seed which is a grade higher than certified seed.

Anco is experienced in line planting and has developed a state-of-the-art line planting machine that has floating heads, ensuring minimal disturbance to the existing surface on both flat and undulating ground. Our experienced staff can help you with your next grassing project. See us at Stand 25.

BA GROUP AUSTRALIA

Stand 61

BA Group Australia is a manufacturer of spraying equipment, established in 2008 with a dedicated team encompassing years of experience in the ag spraying industry. Our head office is based in Geelong, Victoria and we also have a warehouse based in Toowoomba, Queensland. Together we distribute a large range of sprayers and accessories, creating spraying solutions for the turfgrass industry.

Drop in to our stand to see our range of trailed and skid-mount units, our new 'Greenskeeper' walk behind sprayer especially designed for green and bunker surrounds. We will also have our TeeJet nozzle demonstrator on site to display the latest in nozzle technology. Why not discuss a custom build solution with one of our sprayer specialists that will be available for a chat throughout the exhibition. For all your spraying equipment and accessories, call in and see us at Stand 60-61 today. Keep your spraying on course with BA Group Australia.

BAYER

Stand 79

Bayer is a global enterprise with core competencies in the fields of health care, material science, bio science and crop Science. As an inventor company, we set trends in research-intensive areas. Our products and services are designed to benefit people and improve their quality of life. At the same time, we aim to create value through innovation, growth and high earning power. We are committed to the principles of sustainable development and to our social and ethical responsibilities as a corporate citizen.

Bayer's turf product offerings include fungicides (3Sixty5, Banor, Bayfidan, Signature, Rovral GT and Dedicate), herbicides (Destiny, Ronstar, Spearhead and Tribute) and insecticides (Merit, Initiator, SilvaShield, Ficam and Tempo). Visit the Bayer stand (79) at the 28th Australian Turfgrass Conference Trade Exhibition and meet our team. Our new Turf Technical Manual will be available along with giveaways and a chance to enter our 'Business Card' competition. Hope to see you there! Bayer – Science for a better life.



BERNHARD AND COMPANY LIMITED

Stand 68

Bernhard is the leader in the grinder market and one of the world's most influential forces in the presentation of quality turfgrass. That is why we are in over 65 per cent of the world's top 100 golf courses. Our products include:

- Express Dual 4000: The world's fastest and most accurate grinder. Self-aligning. Intuitive reel sharpening system.
- Anglemaster 4000: Exceptional tolerances to within one thousandth of an inch.



BROWN BROTHERS ENGINEERS

Stand 66

Brown Brothers Engineers Australia is an importer and distributor of Lowara pumps and pumping equipment, with sales offices in Melbourne, Sydney and Brisbane. Lowara pumps were established in Vicenza, Italy in 1968 and it is part of Xylem Inc., a global engineering and manufacturing company. Lowara specialises in the manufacture of premium quality pumps and fluid handling equipment and is recognised worldwide for quality, efficiency and reliability.

Brown Brothers specialises in the design and fabrication of purpose built booster systems particularly for golf courses in both



Provides easy loading, flood cooling and autocue system of angle finding.

- Express Dual 3000 MC: Easy to use. Lift table standard. Mowers ground in situ – no need to remove bedknives or rollers.
- Anglemaster 3000 MC: Independent in-feed and a single point advance make this the easiest bottom blade grinder on the market. Automatic traverse and coolant system standard.
- Rapid Facer: Quick turnaround machine. A perfect edge in 90 seconds. Prolongs life of bedknife between re-grinds.
- Rapid Relief: Portable and fast. Restores relief on your reel in minutes. Powerful magnets hold unit firmly to mower.

Bernhard supports and develops research and education programmes alongside superintendent associations and promotes and explores the relationship between cutting practices and grass health.

CLEARPOND

Stand 18

Clearpond will be presenting their range of lake management aeration equipment and water treatments designed for use in large water bodies to improve water quality. Since 1992, Clearpond continues to be a leading and exclusive distributor of a wide range of high quality lake management, fountain technology, water entertainment and water garden products throughout Australia and NZ.

Clearpond is a true specialist and can provide you the right solutions and products to almost all your water chemistry and water quality issues. We are constantly improving and expanding our product ranges, to provide you the latest in product innovation and quality. Products being exhibited at the conference include lake aerators, water treatments, pumps, ultra violet lights, skimmers and commercial water entertainment equipment.



Australia and New Zealand. Many of these booster systems include a microprocessor pumping system controller, but it does more than just change the speed. It actually manages the performance of the pump to match a wide range of system conditions and requirements.

The Hydrovar software is designed specifically for centrifugal pump operation, control and protection. It can be set up to protect the pump for operating under various unfavourable conditions, e.g. cavitation, operating against a closed head, low NPSH etc. The Hydrovar provides the golf course superintendent with flexibility of watering when required with substantial savings on installation, power usage and maintenance.

COUNTRY CLUB INTERNATIONAL



Stand 22

Country Club International is today probably the most diverse supplier of equipment to the golf industry of almost any company in the world. The driving philosophy over the years of sourcing and manufacturing the 'best' products available have created an eclectic high quality range of equipment from the biggest and best in the business.

Country Club International is the master distributor of Par Aide golf course equipment, Waste2Water wash water treatment systems, Enviromist spray equipment, Convault fuel storage systems, Range Servant Sweden golf range equipment, Southwest synthetic turf, Redden safety barrier netting, Seair

irrigation water treatment systems, Greenjoy range and course equipment and much more. Complementing these big names, Country Club also distributes selected lines from Better Methods, Repeat Plastics, Netting Australia, Miller Brothers, Store Safe, Eagle One USA, Derone Enterprises, Parklands Trading, Enware, Turf Irrigation Services, Fiberbuilt, Tee-Up and many others.

While 'world's best' has been the yardstick, environmental and safety issues have been the driving force. Enviromist CDA spray equipment, manufactured in Australia, has now been launched into the US with the assistance of Country Club, while Waste2Water has quickly become the leader in washdown systems in just two years on the Australian market.

DAVID GOLF

Stand 100



Since 1956, David Golf has been a household name to golf course superintendents and club managers. Our company is Australia's largest supplier of golf course hardware and practice equipment. Other divisions within David Golf are Better Methods Australia, DG Signage, The Corporate Golfer, DG Safety & Environmental and Sports Safety Netting.

Brands represented among our proprietary product range are: Geofabrics

– Bunker Mat and Megaflo drainage; Water Stax treatment systems; Fuelco petroleum and diesel tanks; Standard Golf course hardware (USA); Wittek driving range equipment USA; Derone Ent. – Twister ball washers (USA); and Sweep & Fill (USA).

At David Golf, our commitment to the turf market continues to grow. Our client's requirements are our priority. We intend to keep improving each year by providing the service and back-up customers have come to expect.

Clearpond provides both in-house and external training to ensure we keep ahead of our competition. Our standard is defined by the customer's expectations being met or exceeded, not by our perceptions as a supplier. Our goal is to work in partnership with our customers through the use of the latest technologies, careful design and supply of the most appropriate lake management system for that particular application.

COLIN CAMPBELL (CHEMICALS)

Stand 58



Come and visit the Colin Campbell (Chemicals) stand during the week. We will be providing updated information on our existing product range as well as showcasing a number of innovative new products, including:

- Dewcure – a moisture suppression (dew control) and frost protection for all turf;
- Monstar – a new active ingredient and fungicide resistance group to control fairy ring, with other disease control measures currently under development.

Social media is becoming more popular in everyday life and we will be demonstrating new tools and smartphone apps you can use

to assist with your daily turf management regimes. You can get updates and information before and during the show on our blog - www.campbellturf.blogspot.com. You can also follow us at twitter.com/campbellturf

DINT AUSTRALIA

Stand 90



DINT Australia is proud and honoured to have been commissioned once again to manufacture the magnificent trophies that

will be presented during this year's Australian Turfgrass Conference in Melbourne. The winners of the Distinguished Service Award, Claude Crockford Environmental Award, Excellence in Golf Course Management Award and Graduate of the Year Award, will all receive a magnificent 22ct gold-plated trophy, handmade by DINT, depicting the AGCSA logo. These trophies are expertly crafted by our foundry, J.A. Dinte P/L, which has been in business for 80 years.

It is this same experience, expertise and craftsmanship that goes into making the cast bronze tee plaques that so many of Australia's golf courses have displayed on their tees. In recent times there has been a resurgence in the demand for highest quality cast tee plaques. DINT is the leader in this area, providing unrivalled quality, design and finish in this 100 per cent Australian made product.

DRUMMUSTER AND CHEMCLEAR

Stand 20



Chemical users across Australia can take advantage of two fantastic industry stewardship programmes that can help them dispose of both their out-of-date ag vet chemicals and empty containers. The drumMUSTER service was first established in 1998 and works in conjunction with local tips and waste transfer sites to arrange the collection and recycling of pre-cleaned, empty chemical containers. Once you find your local collection site and clean your containers, simply call your local collection site, bring them in during the relevant opening hours and we will do the rest. To find out more about the programme or to discover your nearest collection site, go to www.drummuster.com.au or call 1800 008 707.

Leaving left-over obsolete chemical on your property can create a variety of potential dangers. ChemClear started in 2004 and is responsible for the collection and disposal

DUPONT

Stand 5



DuPont has continued to focus research efforts on the development of innovative, high performance products for the professional turf industry. DuPont Acelepryn® insecticide can provide turf managers with season-long control of the major turf-damaging insect species. As an unscheduled poison, Acelepryn® has few application restrictions and has low toxicity to the key non-target species of birds, fish and bees.

Many Australian golf course superintendents and turf managers now include DuPont Acelepryn® as a standard

treatment within their integrated pest management programmes and are extremely happy with the performance and benefits.

DuPont is excited about the forthcoming launch of DuPont Velista® fungicide (APVMA approval pending). Velista® represents a new active ingredient for turf managers and is effective on the top three turf diseases in dollar spot (*Sclerotinia homoeocarpa*), brown patch (*Rhizoctonia solani*) and anthracnose (*Colletotrichum graminicola*) plus other important turf pathogens. Come and talk to us at Stand 5 to learn more about Velista® and how to get optimal performance from DuPont Acelepryn® as part of your insect control programmes.

of your unwanted, inherited or out-of-date chemical products. We liaise with shire councils to arrange state-wide collection runs, which are set up according to demand. To get started, give us a call or 1800 008 182 or head online at www.chemclear.com.au to register and begin taking an inventory of the chemicals you wish to dispose of.

EVERRIS

Stand 62



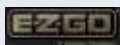
Everris is the new name for Scotts Professional. While Everris is new, our global product portfolios are renowned for innovation, performance and advanced precision and that hasn't changed. Everris continues to deliver powerful and reliable turf brands like Sierrablen, Sierraform GT, Sportsmaster and ProTurf (new to the range) and constantly delivers innovative nutritional programmes and complete solutions to the market.

As the world leader in fertiliser manufacturing, Everris has a vast range of solutions to deliver reliable and exemplary results. Everris offers high quality products such as premium fertilisers, seeds and plant protection to deliver a solution for every need. Turf managers put their trust in Everris' advanced technology to deliver high-quality nutrition for optimum health, performance, endurance and aesthetic appearance.

Dynamic products such as slow and controlled release fertilisers put the turf manager in total control which allows for efficient and precise delivery of nutrients. We also manufacture and supply economical short-term release fertilisers in mini prill sizes for quick response when needed. Everris is committed to maintaining balance and respect with the natural environment it is inspired by and with a strong and dedicated team of professionals globally, Everris is driven by innovation and inspired by nature.

EZGO

Stand 65



For over a century Cushman has been bringing the world quality utility vehicles and has become one of the most highly regarded manufacturers in the industry. The Cushman brand has witnessed two World Wars. During World War I, Cushman provided two- and four-horsepower engines to operate water pumps, washing machines and saws. By World War II, the company was producing scooters for the navy and army. By the end of the decade, Cushman moved on to three- and four-wheeled commercial and industrial vehicles. With it came a commitment to building 'green' energy-efficient electric vehicles and the introduction of heavy-duty utility vehicles.

EVERGREEN TURF



Stand 84

Evergreen Turf has been providing to the golf course industry, with services and products for over 20 years now. With our highly qualified and experienced staff, such as David Nickson and Tim Bayard, our aim is to provide solutions for our clients. Evergreen Turf offers a wide variety of specialist services to the golf industry which include consultancy, line planting, scarifying and top making. We supply premium turf varieties such as Grand Prix and Conquest couch which are accepted as market leaders.

Evergreen Turf has the capability to offer a full turnkey service to golf clubs which includes profile design, drainage and irrigation design and turf installation. Evergreen Turf is also proud to be the sole Australian agent for the Kesmac Root & Pest Controller, which offers an effective and innovative way to control root residing pests. This unit combines pressurised streams to both the surface and sub surface root layer.

Combined with supplying StaLok Pathways for stabilising granitic gravel paths and our range of Kesmac fairway mowers, you can see that 'Evergreen is more than just turf'. Come visit our stand at the trade show or visit our web site www.evergreen.com.au

Today, 100 years after the first engine was shipped out of the Lincoln, Nebraska plant, Cushman is still striving to provide rugged, dependable solutions for a variety of industries. And with the ever-expanding resources of Textron, one of the world's most renowned manufacturers of transportation vehicles, Cushman continues to grow.

Cushman vehicles are manufactured in Augusta, Georgia, in a plant recently honoured as one of the top 10 manufacturing facilities in North America by IndustryWeek

GLOBE

Stand 82



'You're at home with Globe.' The 2012 AGCSA trade show for Globe and Globe Equipment Solutions (GES) is all about our customers, staff and our global partners. We will be demonstrating how we provide a unique, friendly and professional service to all in the turf industry. Whether you're interested in the latest plant protection products, the most efficient equipment to improve productivity or marking the brightest lines you can, we invite you into our home in Melbourne to discover how we can assist your turf management needs.

magazine. The company continues to build on its reputation for delivering quality, heavy-duty industrial material carriers and comfortable yet rugged personnel transport vehicles.

FLORATINE PRODUCTS GROUP

Stand 87



Floratine Products Group has been designing and manufacturing high-grade nutrient products for the turf industry for over 20 years. With its technically trained and dedicated distribution team, Floratine works with turf managers to develop proactive plans that meet the goals of each particular facility.

Floratine's product line is divided among four general categories: foliar, soil, biological and additional (specialty) products such as wetting agents. In 2012, Floratine is proud to introduce several new products into its already extensive range. EON75 is an organic, long-term soil conditioner containing 75 per cent purified humic acid. Easy to apply, this greens grade size prill (80-110 SGN) provides multiple benefits to improve soil and the soil environment. Need to increase microbial numbers – then try EON75.

Floratine again is leading the way with new technology by introducing NutriFoamPRO, a foliar NPK mix in an aerosol can. It has been designed to help target specific areas of distressed turf, such as walk-on areas, around the cup or areas affected by heat stress, and will give the turf the boost it needs to make a fast recovery. Give your turf a kick in the grass. Visit Stand 87 for more information.

GOLF & BOWLING MACHINERY

Stand 99



Golf & Bowling Machinery are the Australian distributors of Scott Bonnar and Smooth Range of turf equipment. The Scott Bonnar 30" Queen mower, Scott Bonnar scarifier, Smooth Roll for golf and bowls, Smooth Spread and Smooth Cut mower are all products sold

We invite you to come and say hi to our special guest, former Royal Sydney superintendent John Odell. John will be available to discuss anything greenkeeping and to answer any specific questions in regards to our specialist machinery, such as Lastec Mowers and Tru Turf golf green rollers.

New for GES is the simple and effective RGF UAB-20 washdown bay. Specialists will be on hand to discuss how they work. GES will also be displaying Dakota spreaders, Agrimetal blowers, Imants root pruners and Amazone vacuums. Additionally we will have loads of new product information from our partners such as The Andersons, Aquatrols, Barmac and Fountain Line Marking.

Australia wide by Golf & Bowling Machinery. With five technicians employed across two branches we support our products with specialised service and repairs. We also stock a large range of spare parts for these brands. New to Golf & Bowling Machinery this year is the 'JRM' range of products. JRM high quality bedknives and tines make maintaining and improving your golf course easier.

Golf, bowling and sporting clubs can also benefit from our range of pre-owned equipment. From 'as traded' to 'fully reconditioned', we work with clubs to come up with the best product to suit their needs. Our hire equipment is also available to provide clubs with a flexible and economical option for renovation equipment. Our near new, top of the range hire equipment is a popular choice come renovation time. Golf & Bowling Machinery – sales, service and hire. Servicing the turf industry since 1982.

GRADEN



Stand 97

Graden plans to show new innovative products not seen in Australia before at this year's Australian Turfgrass Conference. We will be displaying our range of quality verticutting machines, including the CSI Verticutter with a new seeding attachment. Recent use of this new feature of the CSI Verticutter all over the UK, including St Andrews, has produced excellent results.

You are invited to visit our stand to discuss this new development in turf management as well as other new products on show. For more details about the Graden range please visit our website www.graden.com.au or contact your local Toro sales agent.

HONDA



Stand 29

Honda will again have an array of product on display at the Australian Turfgrass Conference. The Honda stand will feature a huge range of Honda's industry-leading power equipment, highlighted by the mow safe mower range, as well as four stroke generators, brushcutters, engines and more.

When you walk around the exhibition you will also notice Honda engines powering a huge range of products. Honda engines are used to power many products including ride-on mowers, turf rollers, scarifiers, sand injection machines, diggers/loaders and more!

Remember to keep an eye out for the green and gold approved logo, which indicates that a product is:

- Powered by a genuine Honda engine;
- Engine matched, approved and backed by Honda Australia;

- Built tough for Australian conditions;
- Compliant with Australian engineering and environmental standards.

Can't find a Honda powered product that you need? Come and check out our interactive iPad display on our stand to see the huge range of products available powered by Honda engines. All Honda power equipment is backed by a four year warranty and our GX series engines are backed by a three year commercial warranty, with a servicing dealer network of over 400 dealers Australia wide.

HUNTER INDUSTRIES

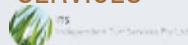


Stand 33

As one of the world's leading manufacturers of irrigation equipment for the landscape and golf course industries, Hunter Industries has enjoyed a well-established reputation as the innovation leader in irrigation. At Hunter, we continue to focus on the needs of the irrigation professional, just as we have since Hunter Industries began 30 years ago. Hunter is the only manufacturer to offer a true total top service (TTS) valve-in-head rotor that is in both adjustable and full circle models.

This year we are excited to be displaying the G900 series rotor which completes the Hunter Golf range of rotors, our award winning ACC (Advanced Commercial Controller) and Surveyor, Hunter's simple powerful central control for golf. Hunter will also be displaying our new ST 1600 synthetic turf large radius rotor. Come and visit Stand 33 to see more or contact Hunter Industries on 08 8363 3599.

INDEPENDENT TURF SERVICES



Stand 85

Independent Turf Services (ITS) is an Australian-owned and operated company. The business was conceived with one main objective – to service the commercial turf

industry with a range of quality products, unique renovation practices and sportsfield construction services.

The company manufactures imports and distributes a large range of goods. The product range encompasses turf seed, specialist fertilisers, chemicals, analytical services, general irrigation equipment and golf course accessories. ITS also leads the turf industry in warm-season grass conversions and specialised renovation equipment that has changed the way we manage our turf areas. ITS has completed a number of sportsfield reconstruction and new construction projects over the past five years and continues to introduce new and improved methods.

As an organisation we are committed to a practical research and development programme which in the past has seen the introduction of many successful chemicals, fertiliser and turf management techniques. This programme is industry driven and is the result of ongoing consultation with key turf professionals around Australia. Our customers are serviced directly by ITS trained technical sales consultants, who are all industry orientated and are committed to a high level of customer satisfaction.

K&B ADAMS



Stand 57

K&B Adams have been supplying quality products to turf managers since 1969. Owner operated and Australian owned, we continue to seek and develop new innovative products. K&B Adams will be represented at the 2012 trade show by all of our territory managers to discuss products from our key suppliers. These suppliers are chosen carefully to enable us to supply only the best quality products to the turf industry, at competitive pricing.

Highlighted at the trade show will be a

28TH AUSTRALIAN TURFGRASS CONFERENCE MAJOR SPONSOR

JACOBSEN



Stand 77

Jacobsen returns to the Melbourne Convention and Exhibition Centre at Stand 77 with a great display of new and innovative turf care equipment. Headlining at the stand will be the all-new Jacobsen Eclipse2 walk-behind greens mowers (pictured). Available as a petrol-electric hybrid or all-electric powered by a drop-in battery pack, these new mowers are available with three cutting widths of 18", 22" or 26" and with a choice of fixed or floating heads. The 26" version is only available with a fixed head cutting unit.

The highly productive Jacobsen Fairway 305 and the recently introduced Jacobsen

LF570 light fairway mower will also be on display along with the Jacobsen GP400 riding greens mower. Unique to the exhibition will be the opportunity to ride n' drive the Jacobsen Eclipse 322 riding greens mower. Because it's all-electric, the organisers have allowed us to run this

innovative mower on our booth, so it's your chance to experience the most technically advanced mower on the market today. Jacobsen - the one-stop shop for turf professionals!



28TH AUSTRALIAN TURFGRASS CONFERENCE MAJOR SPONSOR

JOHN DEERE



Stand 108

2012 marks the 175th anniversary of the year in which John Deere first manufactured machinery. Today with millions of dollars being spent on research and development, John Deere machinery has become the benchmark others try to emulate. Machinery is designed with a purpose in mind, but other factors such as safety and operator comfort are considerations equally as important.

Care of our environment by reducing noise and exhaust emissions, not to mention running costs, has led to development and acceptance by customers of hybrid technology on a whole range of John Deere Golf products leaving competitors struggling to keep up.

With original core values established 175 years ago of integrity, quality, commitment and innovation still as strong as ever, is it any wonder that John Deere Golf products can be seen maintaining the highest rated golf courses and sports stadiums around the world? Wherever people work on or in the land, that's where you'll find a John Deere presence. Not bad for a start-up company housed in a blacksmith shop.



breakthrough product called Humavator, which is proving to be very effective in the reduction of black layer, thatch, salt levels and *Poa annua*. Photographic evidence from trial work will be available at Stand 57. We will once again be showcasing our three-tier technologies range of products. This successful range utilises humates, beneficial bacteria and also offers guaranteed fairy ring control. Greens maintenance, biological regeneration, along with sodium and bicarbonate solutions are other features of 3 tier products. The role of the turf manager is a difficult one. With financial, climatic and environmental issues to contend with, our complete range of turf management products, along with dedicated and qualified staff, ensures that our customers get quality service, products and advice.

LAWN AND TURF MAINTENANCE

Stand 32



Established in 1989 and now incorporating one of Victoria's most advanced turf renovation systems, we at Lawn and Turf pride ourselves on providing highly efficient, cost effective, quality turf renovation practices to the wider turf industry. We have developed from exceptional results through our expertise, state-of-the-art equipment, our professional approach and more importantly by positive feedback from turf managers.

Expectations of turf surfaces in all sporting sectors has increased, however, the time available to carry out the most important turf requirement – renovations – has decreased! Just imagine scarifying, topdressing and verti-draining 19 greens by just after lunch; verti-draining or scarifying 18 fairways in just over one day; or seeding 12 ovals per day

in-between the cricket and football seasons – all without compromising on quality while ensuring competitive pricing.

These are just a few of the procedures we at Lawn and Turf have streamlined to suit that minimal window of opportunity. We also specialise in line planting of warm-season turf types with two specially modified line-planting machines capable of using turf rolls or your sprigs. We will be showcasing all our services at this year's show including the latest drainage, topdressing, dethatching and root pruning methods.

MAREDO BV

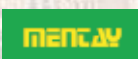
Stand 55



Maredo BV is a Dutch company that offers attachments for greensmowers that go further than verticutting. Maredo is becoming popular with their Vibe Recip Corer, which punches holes with hollow tines up to 1 inch (25mm) and works at mowing speed. It is the most perfect machine for controlling your thatch layer. As well as this Vibe Recip Corer, Maredo offers overseeder heads, vibrating spike attachments, counter rotating collecting brushes and many other special, unique attachments that fit to Toro, Jacobsen, John Deere and Baroness triplex greensmowers. Now use your greensmower for more than just mowing! Contact Marinus Reincke at M.Reincke@Maredo-BV.com

MENTAY STEEL FAB CONSTRUCTIONS

Stand 83



Mentay received an Industrial Design Award for the Mentay Hydra Glide way back in March 1980. It was presented by then Victorian

Premier John Cain and 32 years on we are still manufacturing our famous wicket rollers.

Maurie Menhennet, owner of Mentay, has never played cricket but understands pitch preparation intimately. In the beginning he set off with a roller on a tandem trailer and drove through Victoria and NSW. It was a bit like fishing – you need to present the bait for the fish to bite.

A good friend, Ted Hughes, travelled with Maurie to New Zealand and they hired a ute to transport the roller on. They travelled to Invercargill. The sign post said use a low gear. They thought the Kiwis were pulling their leg, but that big steep hill was as steep as Bulli Pass in NSW. Mentay ended up selling cricket pitch rollers right throughout New Zealand. That is how Mentay started – determination and the right gear put into their rollers. So let Mentay help you. Visit us at our stand where we will be displaying our latest rollers. Email mentay@bigpond.com

NO FUSS SOLUTIONS



Stand 35

Smart Track, a division of No Fuss Solutions, will showcase our new range of products. On show for the first time to the turf industry in Australia will be the super heavy duty I-Trac. This sensational temporary roadway is rated to 200,000kg yet only weighs 15.5 kg per section. I-Trac allows the build of a roadway or loading pad on turf or almost any surface without the use of machinery. Fast to install and fast to remove, with extreme load ratings.

Also on show will be Supa-Trac, a truly superior turf protection that will take all the punishment a large crowd can deliver. Supa-Trac is trafficable by forklifts and light vehicles with pneumatic tyres. This unique product will, in terms of ease of use and practicality, outperform any other turf protection system. Supa-Trac has an enviable international record where it has been used on some of the world's greatest venues, leaving the ground in pristine condition and the groundskeeper worry free.

NUFARM FORESTRY, INDUSTRIAL & TURF

Stand 31



Nufarm Forestry, Industrial & Turf is proudly part of Nufarm Australia Ltd and is the only manufacturer of non-crop protection products in Australia. With more than 30 registered turf and amenity products, Nufarm has had a strong focus in the industry for three decades.

Our products go through extensive research and development prior to commercial release and are designed to perform in Australia's tough conditions. Nufarm's provision of cost-effective options allows turf

managers greater budgetary flexibility. This in turn helps reduce financial pressure for clubs and can contribute to ongoing viability and job security.

We are proud of recent innovations to the Nufarm range, particularly:

- The introduction of new turf growth regulator – Maestro®
- The addition of Roundup® Attack™ with IQ inside™ to our glyphosate range;
- The development of Amicide Advance 700, a dual salt, non-volatile formulation for the control of broadleaved weeds in industrial and rights-of-way applications;
- To have received the 2011 Australian Packaging Design Award for our Quik Pour vessels.

Nufarm Forestry, Industrial & Turf has all your plant protection requirements. Come to Stand 31 and discuss how we can maximise the value of your plant protection budget.

NUTURF

Stand 1



Nuturf Australia is the leading distributor of products and agronomic services to the professional turf industry throughout Australia. Our national network of sales specialists provides a comprehensive range of products and services to our valued customer base.

Our mission is to deliver to the Australian turf and amenity horticulture industry products, services and agronomic solutions above and beyond the expectations of our valued clients. Our commitment is to our customers, our staff, the environment and the community.

Nuturf, Australia's link to the future in turf management and amenity horticultural solutions, is proud to have a stand at this year's AGCSA conference. Come and see us with Heritage Seeds at Stands 1. To find out more, please visit us and talk to one of our many sales and technical specialists who will be present. www.nuturf.com.au

OASIS TURF

Stand 114



Oasis Turf distributes only the highest quality fertilisers, seed and chemicals to the Australian turf market. Due to the vast network of fertiliser manufacturers we represent, Oasis Turf can offer the widest range of nutritional solutions to the turf manager. Our fertiliser range covers everything from liquid slow-release through to every granular slow-release source of nitrogen that is currently available in Australia.

Our strong focus on both cool- and warm-season species of grass seed sees us as 'the leading distributor of turf seed in Victoria'. Over the 15 years Oasis Turf has been operating, we have built relationships

PGG WRIGHTSON TURF

Stand 28



PGG Wrightson Turf is a division of PGG Wrightson Seeds, the largest plant breeding and seed production company in Australasia. We have been breeding turfgrass seed specifically for the Australasian environment for over 30 years and have established ourselves as innovative market leaders in turfgrass breeding, research and evaluation. We pride ourselves on our range of high quality seeds that are suited to all regions of Australia.

Our philosophy is simple – we base the offering of turf products upon scientific principles derived from a number of local

and overseas suppliers in order to utilise the leading technological advancements in turfgrass solutions. PGG Wrightson Turf has built a strong technical sales team that is backed by our scientific research group who ensure the right selection for your requirements. Our capabilities in Australia span the country with distribution facilities nationwide. We are strategically located to supply a full range of seeds all across Australia.

This year PGG Wrightson Turf will be promoting the use of certified browntops in the cooler climates of Australia and we will also be providing information about leading bentgrasses which are becoming a popular option at some of the most prestigious golf courses Australia has to offer.

PLP GOLF AND TURF

Stand 86



PLP Golf and Turf is a division of Powerup Lawncare Products and GA Power Equipment Spares which operate under the Roy Gripske & Sons Company. This gives us access to some of the biggest names and the highest quality equipment on the market today.

PLP Golf and Turf is one of Australia's largest distributors of aftermarket machinery spare parts, golf course accessories, quality power equipment, machinery and more with trusted names such as Hustler, Ryan,

Eastman, Bayco, R&R, Golf Co, Mean Green 2 and many more.

Our philosophy is to provide the golf and turf industry with quality, affordable products backed up by service that is second to none. With 10 area managers currently on the road servicing every state of Australia, we aim to provide customer service that is second to none. If you are not currently using PLP Golf and Turf, you are throwing money down the drain and settling for second best. Contact PLP Golf and Turf on 1300 363 027 or visit www.plpgolfandturf.com.au.

with all the major plant protection companies in Australia. This gives us access to the latest chemical technologies currently available.

Water management and soil moisture technologies also play an important role at Oasis Turf. The focus on correct soil moisture sees us distributing products that perform well in our extreme conditions. To find out more about us and our product range, please call into our booth at this year's trade show. www.oasisturf.com.au

PHANTOM CORE & HARROD UK

Stand 89



Phantom Core is unique in its offering, tailor-made to aerate, remove organic matter and improve player/surface interaction characteristics with one machine all in a single pass. This innovative product utilises a drum core chassis with over three hundred 12mm hollow tines to core and harvest in a single pass. With productivity of over one hectare an hour, you have never completed both practices with such efficiency.

The tine spacing is designed to allow implementation of the overriding turf maintenance principle of 'light and frequent'. This also allows you to aerate year round, no

need to wait for a break in play or favourable weather patterns; aerate when your turf needs it, not when your schedule dictates it. Take your sports surface, racetrack or golf course fairways to the next level – Phantom Core.

Harrod UK are again exhibiting following continued growth across Australia. The UK's leading manufacturer of sports ground equipment has been awarded the sole supplier contract to provide the London 2012 Olympic Games with football goals and nets and hockey goals, nets and team shelters. Within the Harrod UK range you will find a product to meet your needs. All are built for quality, strength, safety and performance.

PROFLOOR PORTABLE FLOORING

Stand 63



Profloor Portable Flooring (PPF) is Australia's leading manufacturer and provider of quality grass protection and access roadway solutions. With operations servicing Australia, New Zealand, Asia, Brazil and Europe, PPF products are used by most major events including the Melbourne and Singapore Formula 1 Grand Prix, Moto GP, MOPT, AAMI Park, Tennis Australia, VRC Melbourne Cup Carnival, Soundwave, Big Day Out, The

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RAIN BIRD

Stand 73



Now more than ever performance counts with your irrigation system. Come and see the exciting new Integrated Control System and the new Eagle Series rotors. Complete confidence in your irrigation system gives you as the turf manager peace of mind.

Rain Bird understands your need to get the most from your irrigation system. Our industry leadership and sole passion is irrigation and we continue our commitment to innovative irrigation solutions every day. Rain Bird Corporation – Golf Division manufactures a wide range of irrigation products for golf courses – pump stations, Rain Bird Eagle Gear Drive Rotors, field controllers, map-based central irrigation systems, decoders, swing joints, flow meters, filtration systems and valve and irrigation accessories.

Rain Bird Central Control and Pump Station components are serviced and supported by a comprehensive Global Service Plan (GSP). We invented irrigation technology and continue innovating every day. We are the world leader in irrigation expertise with a proven reputation for high quality products and services. Rain Bird is proud to be a principal sponsor of this year's conference. For further information regarding Rain Bird golf course irrigation system expertise, visit us at Stand 73 or www.rainbird.com



Presidents Cup golf, numerous V8 Supercar teams and most event and party hire companies. With a range of quality products for sale and hire our range of colours includes grey, green, black, silver, white, red, yellow, blue and translucent. PPF has your event covered.

REDEXIM CHARTERHOUSE



Stand 105

Redexim Charterhouse continues to address the global requirements for more efficient turf renovation and cleaning equipment for both natural and synthetic turf. Strong relationships and understanding of our clients' needs around the world, in all aspects and at all levels of turf maintenance, allows Redexim Charterhouse to address and meet these needs, while developing new and smarter models to achieve the ultimate results in deep tine aeration, slitting with ability for sand inlaying, coring, scarification, sweeping, seeding, topdressing and synthetic turf maintenance.

Redexim Charterhouse's reputation for quality, reliability, multifunctional applications, ease of use and high safety standards continues and remains paramount in our quest to continue serving our industry. For more information and to view our range of equipment, visit Stand 35 and chat with our representatives.

SST AUSTRALIA

Stand 11



SST Australia is a significant manufacturer and supplier of soil moisture maintenance

aids and spray additives for the turf industry in Australia and New Zealand. The principal products supplied by SST are:

- Aquaforce – premium highly penetrating soil wetting agent;
- Broadwet – irrigation applied soil wetting agent;
- Restore – economical general purpose soil wetting agent;
- Breakthru Gold – corrective wetting agent for severely water repellent areas;
- Envirodye – environmentally compatible marker dyes for turf sprays.

SST Australia is launching a new product at the Australian Turfgrass Conference known as BI-AGRA. BI-AGRA is a highly effective moisture retention aid which is easily applied to turfgrass and sports areas that suffer from poor moisture retention and consequent poor turf health and vigour.

Independent trials have shown that BI-AGRA can retain up to five-times the normal amount of moisture held in the rootzone at field capacity. Improved appearance and vigour can be obtained with half the amount of applied water to the turf enabling reduced irrigation requirements. SST's products are exclusively available from Globe Australia and from PPG Wrightson Turf (New Zealand).

SUPATURF

Stand 26



Supaturf offers a complete range of turf line-marking solutions based on experience and innovation. On display we have some new and exciting products to complement our established and proven line-marking systems.

STRATHAYR TURF SYSTEMS LEGEND COUCHGRASS



Stand 106

StrathAyr

Legend is a premium couchgrass that is used at several major golf courses including Royal Melbourne and Moonah Links. Legend couch is also in use in major sporting stadiums including AAMI Park, Suncorp Stadium, Parramatta Stadium, CUA Stadium and Gosch's Paddock.

StrathAyr provides turfgrass varieties and turf systems for all applications. Varieties grown in Victoria include Legend, Santa ana, Wintergreen, Sir Walter buffalo, Village Green kikuyu, RTF self-repairing tall fescue and Blueblend Premium/Rye.

StrathAyr Turf Systems products include reinforced all-weather turf system for stadia, in use in seven NRL stadiums. StrathAyr Track is in use at Moonee Valley Racecourse, Launceston's TOTE Racing Centre, Singapore and Hong Kong. Portable 'drop in' cricket wickets, removable turf systems for stadia and racetrack crossings and natural turf car parking systems. For all your turfgrass needs see the StrathAyr team at Stand 106. www.strathayr.com

SIMPLOT PARTNERS

Stand 93 SIMPLOT PARTNERS



Simplot Partners is among the largest suppliers of professional turf products in the world, with facilities throughout the western USA, Asia and Australia. Simplot welcomes the opportunity to be involved in the 28th Australian Turfgrass Conference in Melbourne. This year Simplot's BEST fertiliser will be celebrating 80 years. We will be celebrating this milestone with events throughout the year and at our stand.

This year we will have special guests from the USA including Tammy Harney from Profile products to discuss the advantages of using Profile, as well as John Maggiore and John Doyle from Simplot USA discussing the Simplot Specialty product range. We will also have on our stand Tony Braga the chemist from AAC to discuss Simplot liquids which are considered the most advanced liquid range on the market including Liquimaxx, Greenmaxx, Ferrocious and injectables.

As usual we will be running our competition to win a trip to the Golf Industry Show which will be held in San Diego in February 2013. Phil Soegaard (Lakelands Golf Club) was the lucky winner last year and attended this year's show in Las Vegas. Please talk to your Simplot representative to get more information on how to enter.

28TH AUSTRALIAN TURFGRASS CONFERENCE MAJOR SPONSOR

SYNGENTA LAWN & GARDEN

Stand 78

syngenta



Syngenta Australia delivers disease, insect and weed control as well as turf growth regulators to professional turf managers across the country. Syngenta has more than 20 years' experience in developing and marketing products specifically for golf course superintendents. We take a long-term approach to providing an extensive portfolio of products and services with optimal packages of chemistry and technology for professional turf maintenance in Australia.

In those 20 years we have developed a profound understanding of best practice golf course management and we take seriously our twin responsibilities – to deliver leading product performance for our customers, while demonstrating the highest level of dedication to human and environmental

safety. Syngenta takes product stewardship within turf management practices very seriously, and promotes environmental sustainability.

Syngenta is one of the world's leading companies with more than 26,000 employees in over 90 countries dedicated to our purpose: bringing plant potential to life. Through world-class science, global reach and commitment to our customers, we help to increase crop productivity, protect the environment and improve quality of life.



Along with improvements to our machines and liquids, our current marketing campaign has well and truly brought Supaturf into the 21st Century.

THOMAS AQUATIC SERVICES

Stand 59



Thomas Aquatic Services takes a practical approach to aquatic weed solutions by using innovative techniques and state-of-the-art machinery for aquatic weed harvesting and aquatic weed spraying. Thomas Aquatic Services mainly specialises in golf course waterway ornamentation.

We are equipped with multifunctional amphibious machinery and we can assure you that there is low impact on sensitive surroundings. Our machine proficiency is in weed removal, cutting or excavation of weeds, and ongoing maintenance. At trade exhibition Thomas Aquatic Services will be showing videos and photos of previous projects that will give you an insight to what we do.

TRIANGLE WATERQUIP

Stand 9



Triangle Waterquip is an Australian owned company that has been established for over 27 years as a major distributor of irrigation equipment to the golf course, turf and agricultural irrigation markets. A range of the Filtaworx® stainless steel, locally produced, fully automatic, self-cleaning screen filters that have developed a reputation for reliability and dependability even in the most difficult of water conditions will be on display.

Additionally we will be exhibiting a comprehensive range of electric fertigation injection pumps which can be installed to operate fully automatic with a controller and sensors or as a manually controlled system. Should your requirements be as simple as applying wetting agent on an irregular basis or injection acid for pH correction with every irrigation cycle, we will have equipment on display to suit your application. Other products on display will include water meters, hydraulic control valves, impact sprinklers and manual filtration equipment.

Our head office is based in Melbourne with branch offices in Perth, Sydney and Brisbane. Contact Wally Menke (managing director) or Gary Horton (national marketing manager) on (03) 9580 2122.

TURF CULTURE

Stand 75



Turf Culture develops products for a wide range of uses that help turf managers establish, maintain and manicure their turf surfaces to the highest quality. Turf Culture is the leading independent developer of plant protection products and technical support to the professional turf industry throughout Australia and New Zealand. Our national network of distributors and agents cover all areas, providing comprehensive geographical coverage for all of our products and services.

The only focus of Turf Culture is turf. We do not have products for the agricultural industry. The core segments

TURFCRAFT INTERNATIONAL

Stand 17



The TurfCraft team of Alastair Dowie and Ed Kryskow invite all our readers and interested people to call in at our stand (17) at the 28th Australian Turfgrass Conference Trade Exhibition. We will be demonstrating our searchable CD which includes stories from the past five years of TurfCraft. We will also have special subscription offers to new subscribers and to existing subscribers who extend their subscription. We would also welcome feedback and any ideas for the magazine.

As a strong supporter of the industry and industry organisations, TurfCraft is proud to be involved with the Australian Turfgrass Conference and Trade Exhibition.

TURF TEC AUSTRALIA

Stand 6

Turf Tec Australia

Turf Tec Australia has been manufacturing specialised turf machinery for over 30 years and is always proud to be a part of the Australian Turfgrass Conference.

A number of our machines will be on display at our stand, available for sale at heavily discounted show special prices. As well as manufacturing, we are an authorised Hardi dealer, Honda OEM and are Shindaiwa and Maruyama fertiliser spreader distributors. All of our products and parts are available at factory direct prices, Australia wide or exclusively in NZ from Agrowquip and D & E Christchurch. We also export at factory direct prices to the UK, Asia and South Africa.

We manufacture machines for aerating, renovating, collection, spreading, spraying, mowing and rolling, servicing all sectors of the turf industry and anyone that wants the best turf machinery at the best price available. Apart for our standard product range, we also do one off custom machines to suit your requirements.

of the turf industry business on which we focus are golf courses, bowling greens, racetracks, councils and sports-fields, spray contractors, turf farms and schools. We are an independent company that is Australian owned and where possible we manufacture our products in Australia, which is a rare practice in the chemical industry. By doing this our products generate jobs, security and strength to the Australia workforce and economy. Most of our competitors do not share the same links to Australia in terms of ownership and manufacturing. All of our products come with a formulation guarantee which ensures that turf managers can be extremely confident that they are applying a quality product.

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TORO AUSTRALIA



Stand 88

Toro Australia was founded over 40 years ago and is a wholly owned subsidiary of The Toro Company. Toro Australia today is a leading nationwide supplier of mowers, turf care and construction equipment that caters for golf, turf, sports fields and grounds, professional landscape contractor, residential and hire and rental markets. Toro has also expanded to become the largest single supplier of irrigation products to landscape, agricultural, turf care and domestic garden markets.

Toro Australia continues to provide unparalleled service and new technical advances across all of its ever-expanding fleet and irrigation products. Each equipment is designed to make the job safer, easier, more economical and kinder to the environment. Toro Australia's highly efficient golf sprinklers and controllers can help you save time, money and water and ultimately deliver improved playing conditions.

Built on a legacy of excellence and innovation, Toro Australia offers a range of commercial turf management equipment, irrigation products, quality used machinery and a reputation for service and support like no other. Visit Toro Australia at the Australian Turfgrass Conference Trade Exhibition, Stand 88 at the Melbourne Convention and Exhibition Centre from 4-8 June, 2012. For more information, please contact 1800 356 672 or visit www.toro.com.au



ASSOCIATIONS/EDUCATION ZONE AGCSA



Stand 109

The official host of the 28th Australian Turfgrass Conference, the Australian Golf Course Superintendents' Association is committed to the ongoing professional development and support of all those involved in the golf course maintenance and turf management industry. With a membership of over 1000, the AGCSA is growing in size and offers a range of unique services to help superintendents, turf managers and their staff who are seeking access to resources, training and networking.

Visit the AGCSA stand to experience first-hand the extensive range of services and

how they have been tailored to meet the needs of people working in the golf course maintenance industry. Copies of the AGCSA's flagship and award-winning publication, Australian Turfgrass Management Journal, will be available, while merchandise and turf text books will be for sale at discounted prices. New membership applications from delegates are always welcome and these can be processed at the stand. Current members can renew their membership, update contact details and arrange access to the members-only section of the AGCSA website. AGCSA Board members and AGCSATech agronomists Andrew Peart and John Geary will be present to help out with any queries.

TURF DRAIN AUSTRALIA



Stand 19

Turf Drain Australia offers a range of services associated with the drainage and construction of sports grass surfaces. We only use the latest machinery, time proven techniques and vast experience on all projects that we undertake. Our sportsfield drainage systems are extremely effective in removing water from grass surfaces. Sportsfields can be made useable immediately after a rainfall event. A properly installed system will also reduce soil compaction, turf loss and allow mowing and playing schedules to be maintained. A drainage system will also provide for the recycling of irrigation and precipitation to a single outlet.

We have installed hundreds of drainage systems over many years in a wide variety of applications and soil types. Drainage systems can be designed to meet both a budget and particular site conditions. Because low ground pressure machinery is used, minimal compaction and disruption of the grass surface occurs during installation.

Turf Drain's experience in sportsfield drainage is extended to sportsfield construction. We have been building and shaping football fields, turf cricket wickets and bowling greens for many years. Over that time we have completed projects for club and school sportsfields, top level rugby league, rugby union, AFL and international cricket.

OHIO STATE UNIVERSITY



Stand 48

The Ohio State University, in conjunction with various TAFE colleges in Australia, has been recruiting turfgrass trainees from Australia and New Zealand for over 25 years. We will be in attendance at this year's conference to advise and recruit potential trainees who are single, drug-free, between the ages of 19 and 28 and are willing to commit to a year in the US. Candidates must have a clean drivers licence and be willing to take a drug test upon arrival.

All expenses will be recouped due to the fact that all positions are paid well above minimum wage in US dollars. Housing, meals and uniforms are provided in most cases. Interns are placed on the world's best courses and experience some of the best cool-season and warm-season grass courses.

Opportunities to attend turf conferences and take turf education courses through Ohio State University are also available to all who are qualified/interested during the internship. Past students have gone on to gain excellent job opportunities both in Australia, Asia, Europe and the United States so stop by and talk with Mike O'Keeffe and past student David Goldie at Stand 48.

TGAA/STA



Stand 44

Turf Grass Association Australia (TGAA) and Sports Turf Association (STA) are a representative body for all sports turf-related workers and allied trades in Australia and dedicated to providing our members with knowledge, resources, ongoing education, training, support and networking opportunities. TGAA is represented in VIC, SA and WA and STA is represented in NSW, QLD and ACT, all working towards the same objectives. Each association offers educational and social events during the year to keep our members updated on industry changes.

The committees managing the associations are volunteer industry workers and are passionate about fulfilling their commitment to the industry. We are fortunate and thankful to be associated with organisations through sponsorship and partnership.

We are proud to offer the Australian Sports Turf Graduate of the Year Award with the support of Toro. The growth and development of our apprentices is vital to ensure the future of our industry. We thank Toro for the wonderful support they offer our associations and their recognition of the apprentices. If you would like to belong to an association developed for the turf industry by the turf industry, then contact the TGAA - www.tgaa.asn.au or STA www.sportsturf.asn.au.



Benchmarking the benchmarkers

NZSTI agronomist Alex Glasgow was heavily involved in the organisation's two golf course benchmarking projects undertaken in 2004 and 2009

Another reason why benchmarking is seen as a good idea is that it provides a quantitative assessment of course conditions as opposed to simply player perceptions. Green speed is the classic example which, if done on a regular basis, can provide excellent long-term data.

Benchmarking can assist in helping to provide solutions to certain issues and provide the superintendent with the necessary quantitative data to explain why a green may not be performing as the golfer would expect.

The most common concern is often centred around greens being too soft. The ideal tools to assess this would be the use of a Clegg hammer to assess the actual firmness, loss on ignition data to assess the organic matter content and a moisture probe to measure moisture retention.

With this information the superintendent may be able to suggest that more regular renovations are required, implement a more frequent dusting programme or simply modify their maintenance activities to improve the situation.

Lastly, benchmarking can assist the superintendent understand the consistency of their surfaces, particularly the putting surface. Ideally, all putting surfaces on the golf course should be consistent in terms of green speed, surface firmness, moisture content and smoothness. However, this can be particularly challenging, especially when clubs have differing aged greens that may or may not be constructed from the same growing medium, or even with the same construction technique.

By taking regular measurements of certain parameters, the superintendent is far better placed to understand the performance of each of their greens at certain times of the year and implement management techniques to assist in making them more uniform.

ASSESSMENT CRITERIA AND TOOLS

It was interesting to compare the assessment criteria and tools that we each use in undertaking course condition benchmarking. What follows are each of the assessment criteria conducted by both AGCSATech and the NZSTI.

GREEN SPEED

Green speed was the only assessment criteria where, at this stage, both organisations had the same methodology – using a stimp meter. This involves locating a flat area on each green and rolling three golf balls down the stimp meter and averaging their distance. The balls are then rolled in the opposite direction with their distance averaged. These two passes are then averaged and the result is green speed expressed in metres.

Senior agronomist Andrew Peart reviews his recent trip across the Tasman to compare AGCSATech's golf course benchmarking methods to those used by the New Zealand Sports Turf Institute.



Know-how for Horticulture™



During March I was fortunate to travel to Auckland, New Zealand to compare golf course benchmarking techniques. As the industry will be aware, last September AGCSATech embarked on a comprehensive 12-month HAL-funded golf course benchmarking study (Project TU11003) assessing various parameters on a monthly basis at nine golf courses of varying standard in Melbourne, as well as one-off assessments of three courses in Brisbane and Sydney.

The purpose of the trip to New Zealand was to compare the tools and techniques AGCSATech is currently using as part of this project to those of the New Zealand Sports Turf Institute (NZSTI) which has undertaken two benchmarking studies over the past eight years.

In 2004, the NZSTI, in conjunction with NZ Golf, conducted a golf course condition benchmarking project of 50 New Zealand golf courses. This was undertaken by NZSTI agronomists as well as Dr. Doug Linde from Delaware Valley College (USA). In 2009, the NZSTI received funding from The R&A to undertake a follow-up assessment to the 2004 project which also included reviewing current golf course testing methodologies.

One of the NZSTI agronomists heavily involved in both projects was Alex Glasgow with whom I was able to spend some time with during my visit to Auckland. Alex commented that one of the main reasons benchmarking was initially undertaken was because clubs that had their courses maintained by contractors wanted a set of criteria on which to gauge the performance of the contractor.

Playing surface performance assessments were generally carried out on a quarterly basis with failure to meet the set of criteria resulting in the contractor receiving a warning. Further penalties applied if those benchmark values continued not to be met.

SURFACE HARDNESS

AGCSATech has been conducting surface hardness with both the 0.5kg Clegg Impact Soil Tester (Clegg hammer) and the USGA's TruFirm® device. The TruFirm® is not used in New Zealand, however, they do use the 0.5kg Clegg hammer.

There are a few differences though. The NZSTI only tend to measure six locations per green and drop the hammer from a height of 0.3m. The AGCSATech drop height is 0.5m which is the same as the Sports Turf Research Institute (UK) protocol. During the visit no correlation was conducted to compare the two drop heights.

The NZSTI also uses the conventional flat head hammer (weight) whereas AGCSATech is using both the flat head and the newer designed dome head, with the intention of using just the dome head for further benchmarking assessments.

SOIL MOISTURE

AGCSATech had been assessing soil moisture using the Fieldscout® TDR300 with 120mm length probes, at 20 locations across each green. The NZSTI, however, is using the Fieldscout® TDR100 meter (the same recording device, just not mounted) and again only taking six readings per green.

The major difference was that the NZSTI were using the 38mm probes. On reflection, this provides a much more accurate indication of the moisture within the top portion of the green and may provide a clearer picture of issues that maybe associated with too much organic matter within the profile. As is often the case when assessing the performance of golf greens, it is usually the upper portion of the profile that dictates its performance.

The differences in moisture content of the top 38mm of the profile compared to the top 120mm was explored in the last AGCSATech Update where moisture readings were taken at certain depths.

As a result of this, AGCSATech will now undertake soil moisture readings at two depths – 38mm and 120mm – at nine locations per green for all future benchmarking assessments.

SMOOTHNESS

AGCSATech has not been assessing smoothness to date in its benchmarking project. As part of the NZSTI benchmarking project in 2004, it assessed smoothness by counting the number of 'bobbles' a ball takes in its last 3m of roll when released from the stimpmeter.

The STRI (UK) measures smoothness with the Trueness device that they have devised which is

able to detect both vertical deflection (smoothness) and lateral deflection (trueness), however, this is not yet available in either Australia or New Zealand.

After a lengthy discussion with Alex it was decided that smoothness would be measured by putting three golf balls towards the hole from a distance of 3-5 metres and its deviation (lateral movement) or 'chattering' (vertical movement) would be scored on a 0-5 scale (0 being excessive deviation and/or chattering and 5 being no deviation and/or chattering and extremely smooth consistent ball roll). This would be done in four directions to the hole with the score being averaged.

ORGANIC MATTER ACCUMULATION

Loss on ignition, which measures the amount of organic matter accumulation within the soil profile, appears to be the most popular method of greens performance monitoring in New Zealand. Many clubs undertake half-yearly tests of organic matter accumulation to determine the effectiveness of their renovation activities.

AGCSATech collected cores at a depth of 0-20mm and 20-40mm at the start of its benchmarking study (see AGCSATech Update ATM Vol 14.1 – 'Up to the mark' – pp34-36) and this is the same depth increments that the NZSTI also recommends, although initially they will often take samples at 40-60mm and 60-80mm as well to understand the natural level of organic matter contained within the growing medium.

GREENS QUALITY

The NZSTI also rated greens in terms of their overall colour, uniformity of appearance, turfgrass density, uniformity of leaf texture and weed content.

RESULTS

During my time with Alex and for the additional two days of my stay I was able to visit and conduct measurements at six golf courses around Auckland. From the six clubs, two clubs were able to be loosely classified into each of the three categories that the current AGCSATech benchmarking project is assessing, that being 'elite standard', 'mid-high standard' and 'public access'.

The main assessment data collected within all three categories was green speed, moisture content and surface hardness. Two greens at each club were measured and their results have been averaged and are presented in Table 1. The table also shows the results of the March assessment for the Melbourne-based courses.



Smoothness measurements were measured by putting three golf balls towards the hole from a distance of 3-5 metres and assessing deviation (lateral movement) or 'chattering' (vertical movement)

TABLE 1. GOLF COURSE BENCHMARKING DATA – MARCH 2012

Category	Auckland Golf Courses			Melbourne Golf Courses		
	Green Speed (m)	Moisture Content (%)	Surface hardness(g)	Green Speed (m)	Moisture Content (%)	Surface hardness (g)
Public	2.37	34	83	2.45	37	88
Mid-high Standard	3.15	38	94	3.08	42	91
Elite Standard	3.14	28	84	3.21	33	99



Whereas the AGCSATech benchmarking project uses 120mm TDR probes to measure soil moisture, the NZSTI uses 38mm probes

Green speeds were recorded using the stimpmeter, moisture content recorded using the Fieldscope TDR300 with 38mm probes over nine locations and surface hardness from the Clegg hammer (0.5kg dome head) dropped from a height of 0.5m over 20 locations.

The results from both the Auckland and Melbourne based clubs are generally similar although the recent renovation conducted at one of the Auckland-based elite clubs no doubt affected the overall average for green speed and surface hardness.

It is also interesting to note and something that was highlighted by Alex, that there is no correlation between green speed and surface moisture. This is clearly illustrated by the result between the mid-high standard and elite courses in Auckland where there green speeds were nearly identical, however, the elite courses had far less moisture content.

This is apparently completely different to bowls where there is a strong correlation between the moisture content of a bowling green and its green speed. This is due to the weight of a lawn bowl causing it to have much more interaction with the soil profile than a golf ball.

PAKURANGA GOLF CLUB

As well as visiting those six clubs, I had the opportunity to meet up with current NZGCSA president Peter Boyd, course superintendent at

Pakuranga Golf Club in Auckland's eastern suburbs, and undertook surface hardness readings using both the 0.5kg domed and flat head hammers as well as moisture content readings on six of his greens. The results of these tests are presented in Figures 1 and 2.

The surface hardness readings indicate that all greens were very uniform and similar in terms of overall firmness to those recorded at the elite clubs in Melbourne during the March assessment.

While there are differences in moisture content of the greens this is primarily due to their differing construction types. The 6th and 18th greens are older, soil-based greens (the 18th is 40-years-old), while the other four are sand-based greens differing in age and type of sand used. It would be assumed that if the longer 120mm probes were used then the differences between the sand-based and soil-based greens would be even more noticeable.

Peter regularly uses the Fieldscope TDR300 metre over the summer months to monitor the moisture content of his greens as the preferred tool to assess when they require irrigation. By using this approach it negates the subjectivity that can be associated with different employees' opinions and also can often detect greens becoming dry before the visual symptoms are observed.

CONCLUSION

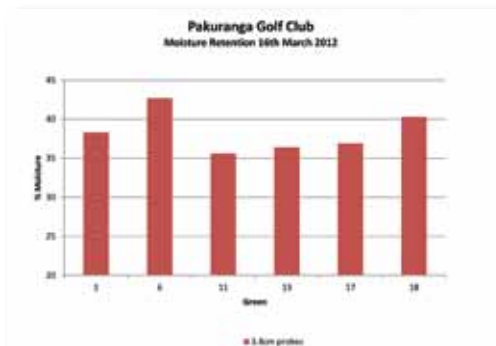
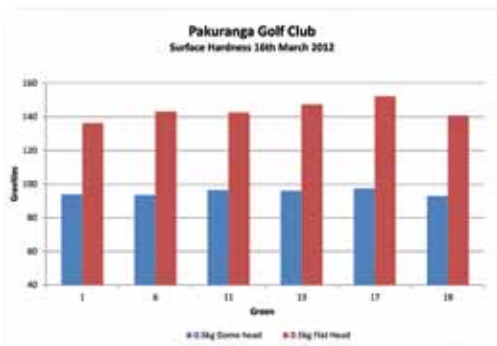
While undertaking regular benchmarking assessments can provide superintendents with a wealth of knowledge into the performance of their surfaces throughout the season, it is also great to be able to compare their performance with similar type clubs.

The results of the one-off assessments in Auckland would tend to show some similarities between category types. By continuing to share knowledge and methodologies the comparisons between clubs can be more closely correlated.

I would like to take the opportunity to thank Alex Glasgow of the NZSTI for his time, as well as sharing his benchmarking experiences during my visit to Auckland. Also to Peter Boyd and the other Auckland course superintendents who gave me their time during my visit. While I did not undertake any benchmarking assessments at Titirangi Golf Club in Auckland's west, I would also like to thank superintendent Greg Swafford for the time he took to show me the work he is undertaking there. 🌱

Right: Figure 1. Surface hardness readings (gravities) recorded at Pakuranga Golf Club

Far right: Figure 2. Moisture retention (volumetric water using 38mm probes) readings recorded at Pakuranga Golf Club



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UNDERSTANDING THE IMPORTANCE OF FREQUENCY OF CUT

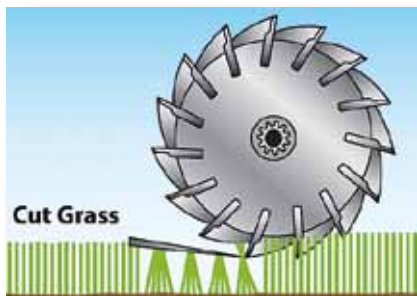
Richard Comely, Director of Product Management at Jacobsen, looks at Frequency of Cut (FoC) and its importance to the quality of cut on fine turf.

To begin, I'd like to quickly review the theory and fundamentals of cylinder mowing. This may seem elementary, but understanding the principles of mowing fine turf is a good starting place.

A cylinder mower cuts grass with a scythe-like shearing action between the rotating cylinder blade and the stationary bedknife. The cylinder has a number of helical knife-like blades evenly spaced and maintained at the same cutting angle on round support members called spiders, webs or collars.

Below the cylinder is the stationary bedknife mounted rigidly on a solid backing plate. The bedknife holds the grass erect, and as the rapidly rotating cylinder blades pass over the bedknife, they cut the tops off the grass blades (see diagram below.)

This cutting action is referred to as "shearing," "clipping," or "scything" by various mowing and sharpening equipment manufacturers.



FREQUENCY OF CUT (FOC)

Frequency of cut is the rate at which the cylinder blades cross the bedknife. In the US, this is quoted as the clip rate, and is expressed as either a decimal of an inch (0.15"/mph), or in millimetres (3.81mm/km/h). To determine the actual clip rate, simply multiply the rate by the speed. For example:

In other regions, FoC is often expressed as Cuts per Metre. Here,

a metre (1000mm) is divided by the clip rate, giving the number of cuts per metre.

This typically shows the number of cuts per metre at the highest forward speed, therefore the lowest standard of finish likely to be achieved.

This measurement is much easier to visualise that Clip.

Clip Rate: 0.15" clip at 6 mph = 0.9"

Cuts per Metre: 22mm per cut at 9km/h (6mph) = 45 cuts per metre

The cutting action of a cylinder mower results in cut grass that has small waves in it. At higher cutting frequencies, these are too fine to see, they can however be seen on units with lower frequencies, (meaning larger gaps between each successive cut).

The FoC can be described as the distance between the valleys of two successive waves. FoC is determined by the number of blades per cylinder, the cylinder speed (RPM) and the forward speed of the mower.

As the mower travels forward, the bedknife pushes against the grass in front of it. At the same time, the cylinder blade is gathering grass as it moves toward the bedknife. The opposing forces gather the grass blades together at the shear point, and the result is a singular wave-like profile on the cut grass.

As the mower continues to move forward, the cutting process continues for each successive cylinder blade as it passes over the bedknife.

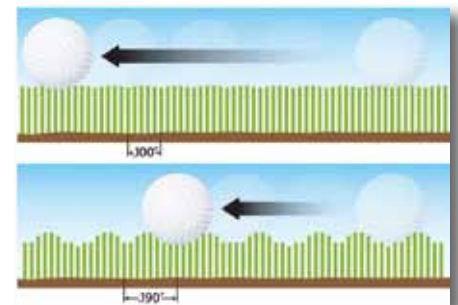
A cylinder unit is properly matched to the application when the FoC is approximately equal to the height of cut. The lower the height of cut, the more blades a cylinder will contain to match the correct FoC.

FREQUENCY OF CUT TOO HIGH

When a cutting unit is put into an application with a FoC greater than the height of cut, the waves that were invisible to the eye with the correct FoC are now visible. This is known as 'ribbing' or 'marcelling'. The most common cause of ribbing or marcelling is driving the mower too fast over an area. This leaves a very noticeable short, choppy wave pattern.

FREQUENCY OF CLIP AND BALL SPEED

In the golf environment, when the FoC is equal to or less than the height of cut, the wave-like profile of the grass is minimal and the smoothness of the turf surface allows faster ball speed.



When the FOC is greater than the height of cut, the wave pattern is larger and the surface is not as smooth, so ball speed is slower. A greater distance between clips is also more susceptible to stragglers than a shorter distance between clips. Stragglers further slow ball speed.

Cylinder configurations vary by diameter, cutting width, and the number of blades. The cylinder diameter and cutting width are usually fixed by the design of the cutting unit. A particular cutting unit, however, may offer cylinder options for the number of cylinder blades desired. The number of blades is one of the factors in determining the FoC.



JACOBSEN ECLIPSE GREENS MOWERS

So far we have discussed the importance of Frequency of Cut at some length. The latest development in mowing technology has been the ability to change the FoC, and then maintain it at a fixed rate, regardless of the forward speed of the machine.

This has been achieved by using electric motors for both cylinders and transmission, and linking them via a controller. The controller then adjusts the cylinder speed to match the forward speed of the machine. Eclipse mowers are unique in their ability to deliver a consistent, adjustable Frequency of Cut at changing speeds.

Finally, let's have a look at some theoretical applications.

APPLICATION

As we can now appreciate, the number of blades in the cylinder, rotational speed of the cylinder, and mower ground speed determine FoC. *The lower the FoC, the smoother the cut.*

In application, a 5-blade cylinder turning at 1200 rpm would provide enough clip rate for roughs, while an 11-blade cylinder turning at 2000 rpm

might be required for greens on a golf course.

When a customer is considering the correct cylinder for the application, it is important to check the manufacturer's stated FoC. A good rule of thumb to use is that the FoC should be within 20% of the height of cut.

For example, Green Acres Golf Course wants to purchase a trim mower. The unit can be purchased with 5-, 7-, or 10-bladed cutting units. Which cutting unit should the customer purchase? The first question to ask the customer is; What is your preferred height of cut? The customer replies that it will be 19mm.

Now, look at the manufacturer's specifications on FoC. In this example it states:

Cylinder type	Frequency of Cut Clip (mm / km/h)	Cuts per Metre (at 9.5km/h)
5-blade	2.66	40
7-blade	1.9	55
10-blade	1.2	87

It is important to note that manufacturers are not consistent in stating their FoC in relation to mowing speed. Some manufacturers give the

figure at a stated mowing speed, while others do not. It is therefore necessary to return to the specification sheet and confirm what the mow speed is.

Others may quote the Cuts per Metre (usually at the full mowing speed), as this is how most machines are actually used.

In this example, the specification sheet stated that the unit can mow up to 9.5km/h (6mph). By multiplying the FoC by the forward speed, we can find the actual FoC for any given speed.

Cylinder type	Frequency of Cut (mm/ km/h)	Mow speed km/h	Frequency of Cut at mow speed mm
5-blade	2.66	9.5	25.33mm
7-blade	1.9	9.5	18.09mm
10-blade	1.2	9.5	11.51mm

Since the desired height of cut is 19mm, we need to have the FoC within 20% of this number. The 7-bladed cylinder has a near perfect FoC of 18.09mm, which satisfies the within 20% rule.

The FoC for the 10-bladed cylinder is out of the recommended 20% margin, and the additional blades will cause more air turbulence. There will be more chance that the 10-bladed cylinder will fan the grass, causing it to not stand up for a clean cut.

Although this looks relatively complex, once you have done a couple of calculations, you soon get the hang of it. However, I hope the most valuable take-away message has been to explain the importance of frequency of cut and how it affects consistent ball speed.

A lower frequency of cut produces a smoother surface and better ball roll. If you can add to that *consistency* of cut, which can be achieved with the Eclipse mowers, it is possible for the first time to achieve consistency across ALL greens, irrespective of the operator or varying mow speeds.



JACOBSEN



Get wet

From pump shed to sprinkler head, the design and configuration of an irrigation system has a significant bearing on the conditioning and presentation of any golf course. The Pulse asked superintendents what changes they have made to their irrigation system in recent times and what these have enabled them to achieve.

“At Bonnie Doon Golf Club we have recently completed a major course redesign (Hydro Pumping & Controls) including the installation of a Rain Bird IC irrigation system (Australian Turf Projects). The main advantage with an IC system is the elimination of all secondary wiring. As the Nimbus 2 central control is linked directly to the sprinkler through maxi cable, we now have individual sprinkler control, a built-in diagnostics system and state-of-the-art lightning surge protection.

The Rain Bird 750 sprinkler series gives us the flexibility and coverage required especially during the grow-in period. Being able to retrofit the IC unit to our old 900 series sprinkler allowed these sprinklers to be used in the new practice fairway. The Nimbus 2 enables the old decoder system on the remaining holes to operate as a separate entity. The transition from decoder to IC was smooth with very little re-training required.” **David Scaife, Bonnie Doon Golf Club, NSW**

“The current system at Thurgoona Country Club is the original one installed some 30 years ago and needless to say it is very tired and has many shortcomings. Sprinkler spacing is inadequate, there are areas which lack sprinklers and there are flow issues. Because of pipe sizing being too small in some places it can take up to 15 hours to run through a cycle. This can interrupt golf, we don’t get full use of off peak power and we are often watering in the heat. Our sprinklers are in a block format too which reduces our ability to put the water where we need it most

On top of that, our control unit and wiring constantly cause problems and we lose a lot of time looking for short circuits in the wiring, decoders and lightning protectors. One of the main problems is that the faults can be intermittent – the fault can be hard to find when it’s not failing all the time.

To remedy some of the above issues, over the years we have undertaken the following upgrades to our system:

- Duo check foot valve installed on the suction line because loss of prime was an issue;

- Hydrovar installed on pump to regulate flow;
- New maxi cable installed in the field because the old wiring and system was beyond repair.
- Upgraded control unit installed, although it was a cheap option at the time;
- More sprinklers installed where flow would allow;
- Replacement of most of the original sprinklers; and
- More turf valves installed to enable more hand watering and knockers in hot spots.

The great news for us is our management is strongly in favour of a total irrigation system replacement. That would include a complete irrigation system from pump to sprinkler head and I am hopeful that may become reality as soon as next year.” **Tim Hicks, Thurgoona Country Club, NSW**

“Having just started at Bardwell Valley Golf Club, I had extensive talks with my assistant and gave him free rein to change most of the spacings over the course. He has been there long enough to witness the ‘hot-spot’ areas on greens and we have worked to rectify these. Every green on the course has had some work done to it in the three months I have been here.

Head spacing is, without a doubt, key to presenting areas to their best, so our trundle wheel certainly got a workout! Also, replacing many older model sprinklers to the latest models has brought noticeable benefits to many tees. I can use the maximum benefit of the sprinkler to get as much water evenly onto the tees to have them looking their best. If only my members would fill in their divots my tees would be looking even better!” **Ben Evans, Bardwell Valley Golf Club, NSW**

“The most significant irrigation works undertaken at Flinders Golf Club has been the installation of a new centrally based computer controller. The old irrigation controller relied on a pin time clock which basically turned the satellites on and off. You had limited programming as the station run times were set manually on satellites around the course. There were numerous problems with the old satellites –



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“Over the past 15 years, the irrigation system at Avondale Golf Club has endured numerous changes, modifications and upgrades. The first improvement to our water management came in 2000 with the installation of a full-time proportional flow wetting agent injection system. This resulted in a reduction of isolated dry areas around the fairways and rough areas in particular. It also made a large impact on water management of greens and gave the added benefit of being able to wash in products evenly through the profile.

The next stage of improvements occurred in 2007 and came about as a direct result of an extensive water management plan (WMP) review undertaken by AGCSATech. The WMP looked at everything from the catchment area, storage, distribution system, historical water use and climate data and turfgrass water requirements. The WMP identified several key areas where water management and water use efficiency could be improved. These included:

- Installing a weather station;
- Irrigating roughs independently of fairways; and
- Developing a method of prioritising and reducing water applications depending on the volume of water in storage.

Acting on the WMP, in 2009 we installed new irrigation heads down the side of each fairway (the lines were located in the side roughs for 90 per cent of the design). These irrigation heads were sized and spaced to throw water to the closest fairway sprinkler head. By utilising this side rough system and reducing the run time on the fairway heads, a 27 per cent saving in water could be achieved. In reality, it was far greater and I would go as far as to estimate savings of up to 40 per cent.

Many other benefits resulted such as the ability to wash in various products evenly (such as Monument on the shaded side of the fairway for *Poa annua*) and irrigate just dry roughs (typically on the sunny side of the fairway).



By utilising a side rough sprinkler configuration, Avondale Golf Club in Sydney has realised water savings of around 40 per cent

In 2010 the changes continued and we installed one solenoid valve to every green. The following year we installed a ring main around each green with adjustable arc sprinklers that only irrigated green surrounds. This was for the purpose of washing in various products applied to green surrounds, particularly during winter months when full circle sprinklers would leave the greens wet for prolonged periods. Water savings resulted but these were minimal in the whole scheme of things.

The irrigation system software was upgraded to the latest Toro Lynx system in 2011 and this included moisture sensors in four greens, weather station installation and improved overall water management. This year all of the full circle sprinklers located around greens have had their gear drives changed to adjustable arc sprinklers that only irrigate the putting surface, which means we will be saving a further 4-5 megalitres for the season.” **David Warwick, Avondale Golf Club, NSW**

sometimes they would skip stations, get stuck on stations or not come on at all!

The installation of the new satellites and irrigation tube was completed in-house by the course staff and an electrician was required to connect power to satellites and pumps. An antenna which is located on the maintenance shed roof is connected to the new computer and sends wireless radio communications to the satellites in the field.

The central computer allows programming from the superintendent’s office and a hand held radio for onsite operation. Individual programmes can

now be set for greens, tees and fairways to operate the valve-in-head sprinklers. The increased flexibility in system programming allows for efficient use of available watering time.

The highlight now is that you can log in to the central controller off site, from another computer. There is even a phone app so you can log in on your mobile. This gives me ultimate control, especially if there is a sudden change in the weather forecast. The next works we will be undertaking is an upgrade to the pump system.” **Colin Morrison, Flinders Golf Club, VIC**

superintendents and golf clubs course maintenance standards



Warm-season wear trials wind up

DEEDI senior research scientist Matt Roche looks back over the Horticulture Australia Limited-funded project TU08018 which over the past four years has extensively explored the wear tolerance and recovery of various warm-season turfgrasses used primarily on community sportsgrounds.



Know-how for Horticulture™

The recent Department of Employment, Economic Development and Innovation (DEEDI) community sportsfield studies have come to an end after nearly four years of R&D activities. In 2008, a two-year research project (TU08018), funded by Horticulture Australia Limited (HAL), was set up to investigate the effect of wear and compaction of different turfgrasses, primarily for sports field use.

Trial sites were established at DEEDI's Redlands Research Station (RRS) and the Redlands Touch Association (RTA) to apply and assess wear in a single simulated site utilising DEEDI's wear traffic simulator at RRS and two sites undergoing actual wear (through the playing of touch football games) located at RTA.

In 2010, an extension was granted by HAL to continue the warm-season wear studies being conducted in Queensland, but also undertake further R&D work associated with the grasses (as outlined in Table 1) suitable for sportsfield, recreational, golf and/or recreational use. These projects included:

- Establishing a case study site at the University of Queensland's (UQ) St Lucia Campus to trial, on a larger scale, unreplicated 1500m² plots of

TABLE 1. TURFGRASS CULTIVARS TRIALLED (HAL PROJECT TU08018)

Scientific name (common name)	Cultivar	
<i>Cynodon dactylon</i> (green couch)	TifSport™ OZ TUFF™ Wintergreen Hatfield Conquest™ Legend®	Grand Prix CT-2 AGRD Winter Gem Premier Blue Dynasty
<i>C. dactylon</i> x <i>C. transvaalensis</i> (<i>Cynodon</i> hybrid)	Tifgreen Tifdwarf MS-Supreme TifEagle	MiniVerde™ Novotek™ Santa ana Patriot
<i>Digitaria didactyla</i> (blue couch)	Tropika Aussiblu	QLD Blue MRD-1
<i>Paspalum vaginatum</i> (seashore paspalum)	Sea Isle 2000 Sea Isle Supreme™	Velveteen™
<i>Pennisetum clandestinum</i> (kikuyu)	Whittet	

Note: Not all turfgrass cultivars are being tested in each study.

The Redlands Research Station wear trial site as of 22 March 2012. HAL Project TU08018 has been running since 2008 to investigate the effect of wear and compaction of different warm-season turfgrasses used mainly for sportsfield use

Grand Prix, OZ Tuff, TifSport™ and Wintergreen couchgrass;

- Conduct ash and lignin fibre testing to correlate results against wear tolerance data; and
- Undertake efficacy/phytotoxicity testing of the plant growth regulator Trinexapac-ethyl. The growth regulator was also applied using different rates over a 12 month period to collect mowing frequency data.

As part of the RRS and RTA wear trials, subjective quality and percentage bare ground, along with traction, hardness (Clegg hammer) and moisture data has been collected from all three trial sites (RRS, RTA and UQ).

RSS TRIAL SITE – WEAR

Wear data obtained from the RRS simulated wear study (Table 2, pg 70) has shown enormous variation in wear tolerance (percentage bare ground) between the three species trialled (green couch, blue couch and kikuyu).

Following the recommendations of McAuliffe and Roche (2009), a field with 15 per cent or greater wear should be considered unfit for play. Under

these guidelines, if a sportsfield planted with blue couch (e.g.: cultivars Aussiblu, Tropika) undergoes high usage (as simulated at the RRS trial site in a sub-tropical environment), the results show that a field of this nature would be out of play 56-100 per cent of the time.

If kikuyu (e.g.: Whittet) was planted across a sportsfield undergoing the same amount of wear, the field could be closed between 55-100 per cent of the season. However, the kikuyu plots at RRS had to be re-established twice (January 2010 and November 2011) and by the end of the trial in late April 2012 would be in need of further turf replacement, because of minimal to zero recovery.

If a variety of green couch were planted (e.g.: Conquest, Grand Prix, Legend, OZ TUFF, TifSport™) across the field it would be less likely that a field closure would take place. On average, only 21-44 per cent of the time would a field closure result if wear was greater than 15 per cent. However, there is also significant variation present within the green couch varieties, with wear damage being between 5-83 per cent.

RSS TRIAL SITE – PGR

Trinexapac-ethyl treatments were applied six times in 2011 (5 April, 3 May, 14 September, 11 October, 9 November and 15 December) and three times in 2012 (10 January, 1 and 28 February) to the sportsfield and/or recreational grasses trial at RRS.



The DEEDI wear traffic simulator in action at the Redlands site

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As part of the extension of HAL Project TU08018, a height of cut trial site was established at Redlands to investigate the practicality of using growth regulators versus mowing requirements



Decompaction work being undertaken of the D1, D2 and D6 wear trial plots at Redlands Research Station

Twelve months' data was collected of turf colour (using a Turf Colour Meter) and mowing frequency. Variation in the number of mows required using different Trinexapac-ethyl rates on different grass species and cultivars was observed. These results, which will be published in the TU08018 HAL final report, will show to turf managers that, given the correct environment, they will have the ability to save time and resources by using growth regulators as per the recommended label to reduce the need for mowing.

Trinexapac-ethyl treatments were applied to the greens quality grasses located at the RRS greens testing facility (see photo page 72) on nine occasions in 2011 (5 and 19 April, 3 May, 17 and 28 September, 11 and 25 October, 9 November and 15 December) and three occasions in 2012 (10 January, 1 and 14 February.)

Phytotoxicity data (after Australian Weeds Committee 1979), Turf Colour Meter and subjective turf quality (0 = worst, 6 = acceptable, 9 = best) data is to be withheld until 30 June 2017 under a commercial-in-confidence clause with Voluntary Contributor Syngenta Crop Protection P/L. However,

performance information of these treatments will be made available in the final report.

The RRS greens testing facility containing four replications of the Cynodon hybrid cultivars Tifgreen, Tifdwarf, MS-Supreme, TifEagle, MiniVerde™ and Novotek™, and the seashore paspalum cultivars Sea Isle 2000, Sea Isle Supreme™ and Velvetene™, will be wound up in June 2012 following minimal interest associated with R&D activities with the improved greens quality grasses.

This is disappointing following interest sparked by the warm-season greens grass management trial (HAL Project TU05001), but somewhat understandable due to the slow conversion rate by golf and/or bowls clubs. The latter is largely due to the increase in resources and change in management practices (e.g.: dethatching) needed to maintain the latest 'ultradwarf' varieties.

RTA AND UQ SITES

Phase 1 (ratings of Fields 3 and 4) of the RTA site ended in May 2011. The two years of data collected,

CONTINUED ON PAGE 72

TABLE 2. AMOUNT OF WEAR (RRS SITE)

Cultivar	2009/2010		2010/2011		2011/2012	
	Bare ground higher than 15%	Maximum bare ground observed	Bare ground higher than 15%	Maximum bare ground observed	Bare ground higher than 15%	Maximum bare ground observed
Aussiblu	75%	87%	77%	97%	41%	88%
Conquest	61%	58%	65%	83%	38%	70%
Grand Prix	8%	17%	54%	53%	38%	57%
Legend	31%	43%	62%	59%	38%	41%
OZ TUFF	0%	5%	0%	14%	0%	6%
TifSport	3%	16%	65%	69%	35%	81%
Tropika	69%	85%	100%	99%	42%	89%
Whittet	94%	87%	100%	89%	55%	98%

Note: Figures represent the amount of wear (bare ground) observed following analysis of collected data from within the RRS simulated wear study between 2009 and 2012. During 09/10 the collection period was from 16/5/09 to 14/5/09, at the time of publication only 36/80 days have been statistically analysed; During 10/11 the collection period was from 19/5/10 to 18/5/11, at the time of publication 26/58 days have been statistically analysed; During 11/12 the collection period was from 25/5/11 to 20/3/12 (current), at the time of publication 26/36 days have been statistically analysed.

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The Redlands warm-season greens grass testing facility trialled various treatments (rates) of growth regulator across a range of 'industry standard' and improved *Cynodon* hybrid and seashore *paspalum* cultivars for golf and/or lawn bowls use



CONTINUED FROM PAGE 70

including wear and turf quality ratings, traction, Clegg and moisture will be made available in full in the HAL final report.

The wear experienced at the RTA site compared to the RRS site is slightly less severe, largely because of the DEEDI wear traffic simulator used at RRS. The analysed wear data (Table 3, page 72) shows that the green couches experienced between 13-79 per cent damage. The extreme damage (up to 79 per cent) was observed on the 5 January 2011 assessment date, during the time of the 2011 Brisbane floods. The latter observations highlight the need for appropriately timed field closures during inclement weather.

TifSport data was captured as part of Phase 1, however, it is not statistically part of the trial. TifSport was not included in the statistical design at the request of Redlands City Council as it was on the remainder of the field, surrounding the trial.

Wear, subjective turf quality, traction, Clegg and moisture data was also collected from within Phase 2 (Fields 5 and 6) of the RTA trial. The trial evaluating the performance of six green couch varieties ended in March 2012 allowing for two complete years of data to be collected.

Results indicate that the wear damage observed (Table 4) is similar to that seen in Phase 1 (Table

3). The major difference is that Legend couch was excluded from the trial at the request of Redlands City Council and RTA staff because of its performance in the 2009-2011 (Phase 1) study.

Inspections of the UQ case study site (Field 4 at the university's St Lucia Campus) were conducted by the project leader on 10 November 2011, 2 March and April 2012. Information collected from the UQ site, including photographs, along with a summarised progress report from UQ's senior supervisor grounds Shane Biddle will be made available in the HAL final report.

FINAL REPORT

Data and information collected throughout the duration of the TU08018 study will be made available to the wider turf industry in the HAL final report due in June 2012. You will be able to download a copy of the report from the AGCSA (www.agcsa.com.au) and Sports Turf Association (www.sportsturf.asn.au) websites following its release by HAL. Information will also be rolled out in future editions of Australian Turfgrass Management Journal.

Past updates on HAL Project TU08018 can be found in Australian Turfgrass Management Journal Volumes 12.2 (March-April 2010 – '**Grass roots wear and tear**'), 12.4 (July-August 2010 – '**Turf wearability and recovery of community**

**TABLE 3. AMOUNT OF WEAR
(RTA SITE – PHASE 1)**

Cultivar	Bare ground higher than 15%	Maximum bare ground observed
Conquest	21%	44%
Grand Prix	9%	38%
Hatfield	4%	18%
Legend	42%	79%
OZ TUFF	3%	17%
Wintergreen	0%	13%

Note: Figures represent the amount of wear (bare ground) observed following analysis of collected data from within Phase 1 (Fields 3 and 4) of the RTA wear study between 2009 and 2011. Data was collected between 12/5/09 and 23/5/11, to date only 38/72 days have been statistically analysed.

**TABLE 4. AMOUNT OF WEAR
(RTA SITE – PHASE 2)**

Cultivar	Bare ground higher than 15%	Maximum bare ground observed
Conquest	24%	40%
Grand Prix	5%	20%
Hatfield	5%	25%
OZ TUFF	0%	14%
TifSport	5%	28%
Wintergreen	0%	12%

Note: Figures represent the amount of wear (bare ground) observed following analysis of collected data from within Phase 2 (Fields 5 and 6) of the RTA wear study between 2010 and 2012. Data was collected between 17/3/10 and 11/1/12 (available data), thus far 46/46 days have been statistically analysed.

sportsgrounds') and 13.2 (March-April 2011 – 'DEEDI wear tolerance trials extended').

ACKNOWLEDGEMENTS

DEEDI gratefully acknowledge support from the following organisations, clubs and business groups in funding, contributing in-kind or assisting with the trials. They include: Horticulture Australia Limited, Redlands Touch Association, Q Turf Machinery, Sports Turf Institute (Aust.), Sports Turf Association QLD Inc. (STA QLD), Sports Turf Association NSW Inc. (STA NSW), Turfgrass Association Australia Inc. (Victoria) (TGAA VIC), Australian Golf Course Superintendents Association (AGCSA), Golf Course Superintendents Association Queensland (GCSAQ), Golf Queensland, Syngenta Crop Protection P/L, Oz Tuff Turf, Australian Lawn Concepts, Dad and Dave's Turf, Evergreen Turf, Twin View Turf, Turf Force, Turf Solutions, Turf World, Caboolture Turf, Jimboomba Turf and Progressive Seeds.

A special mention needs to be made about Redland City Council and University of Queensland who should be congratulated for their proactive approach to keeping the community's sportsfields safe and open and investing in research that will allow members of the community to continue playing sport and living a healthy lifestyle.

DEEDI staff would also like to thank the Turf Industry Advisory Committee (IAC) and HAL for their support in extending the project over four years.



Doing so has provided community sporting groups who rely on the performance, including safety, of natural turf surfaces with solid information on which to base future turf installation decisions.

Should you wish to discuss activities of the above trials or speak to Matt Roche regarding innovative research and development opportunities for your business or organisation, please contact him via email Matt.Roche@deedi.qld.gov.au.

Field 4 at the University of Queensland's St Lucia Campus which has been established with unreplicated 1500m² plots of Grand Prix, Oz Tuff, TifSport™ and Wintergreen couchgrass

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Overseeding of couch surfaces is a common practice for many sportsfield managers and offers benefits such as improved colour and turf resilience and recovery through the winter season

Phil Ford outlines the results of a trial to ascertain the winter evapotranspiration rate of couchgrass in comparison with couchgrass oversown with perennial ryegrass or *Poa trivialis*.



Winter ET rates of oversown couchgrass

Couchgrass provides an excellent, low input sporting surface, but goes into dormancy over winter, losing colour and activity. The dormancy period of the hybrid couchgrass cultivar 'Santa ana' is usually from around late June to late August in southern Victoria.

The practice of winter overseeding a couch sward with a C_3 grass such as perennial ryegrass takes time and money and can interfere with couchgrass recovery in the spring, but potentially offers benefits such as improved colour and turf resilience and recovery through the winter season.

The decision to oversow or not is finely balanced for many turf managers and it is important that all relevant information on the costs and benefits are available to support the decision.

One potential benefit to be factored in is that a C_3 grass such as perennial ryegrass or *Poa trivialis* uses water over winter as it is still actively growing. This transpiration will remove water from the rootzone and should result in lower soil moisture and a firmer, more resilient surface.

Adam Robertson, currently superintendent at Kew Golf Club in Melbourne, did some work on this many years ago during his Diploma studies and concluded that the 'pump action' ET effect of a winter-active grass was often as high as 1mm per day. But we could find no recent data on this, so a trial was established to accurately measure the ET rate of pure couch compared to oversown couch.

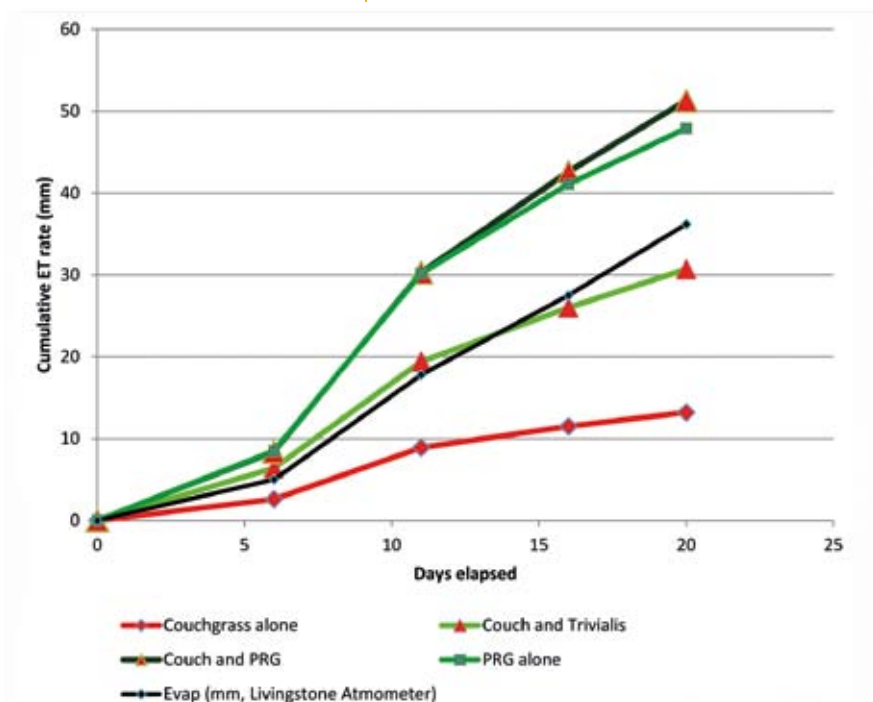
METHOD

Turf was established in 12 mini-lysimeters, constructed of 150mm diameter PVC pressure pipe to a depth of 300mm, fitted with an end cap with two drainage holes (see photo opposite). The profiles consisted of a 40mm drainage gravel layer and 260mm depth of USGA-specification rootzone, mixed with suitable amendments and organic and slow-release fertilisers to support healthy turf growth.

The 12 pots were then used to create three replicates of four different treatments:

- Couch;
- Couch plus perennial ryegrass;
- Couch plus *Poa trivialis*; and
- Perennial ryegrass.

Figure 1: Mean cumulative lysimeter ET and atmometer evaporation rates over a 20 day winter period (14 August – 2 September 2011)



Nine of the pots were planted with Santa ana sprigs in January 2011. Six of these pots were then oversown in late April with either perennial ryegrass at 50 grams per square metre or *Poa trivialis* at 20g/m², with three replicates of each. At the same time, the final three pots were sown with perennial ryegrass at 50g/m² on its own.

Each mini-lysimeter pot weighs around 8kg, of which about 1.2kg is water being held in the soil. When the drainage holes are taped up the pot becomes a closed system and the only way for water to leave the pot is by direct drying of the surface (evaporation) or via root uptake and transmission through the leaves (transpiration). The combination of these two losses is 'evapotranspiration' (ET).

In a pot of this size the daily losses are in the order of 20 grams to 200 grams, which can be easily measured by weighing. The weight loss can then be converted to ET in mm. To answer a common question, the clipping weight on a pot like this is around 0.5g per week, so the effect is tiny compared to the water loss effect.

These lysimeter studies are normally done to measure ET rates of grasses in summer, perhaps to identify drought resistant species that use less water. But in this case we were using them in winter, looking to measure the water use over the cold months rather than in summer.

While not an essential element of the trial, it was felt that some measurement of evaporation rate (E)

was needed. E rates can be estimated from a pan evaporimeter (e.g.: Class A pan), from Bureau of Meteorology data, or by using a weather station or an atmometer.

We were able to use three Livingston atmometers, which consist of a 75mm ceramic globe connected to a water reservoir (see photo on page 76). Water evaporates through the ceramic globe under the influence of sunlight, temperature, humidity and wind (in other words, the same influences that affect plant water use).

Weight loss of the Livingston atmometers (in grams per day) can be related by a specific coefficient (in this case 0.1275) to convert weight loss measurements to evaporation values in mm. A big advantage is that the atmometer is placed right alongside the lysimeters and weighed at exactly the same time.

It must be stated, however, that the atmometer is just a tool to estimate evaporation and may not mimic exactly the effects of sun, temperature, humidity and wind on a grass sward, particularly if the foliage is dark in colour.

All grass samples established satisfactorily and were maintained at 20mm cutting height. By late July 2011 the Santa ana couch was completely dormant. After a period of rainfall in mid-August the mini-lysimeters were allowed to drain the excess water from the profile and the drainage holes on each pot were then sealed with tape.



Turf was established in 12 mini-lysimeters, constructed of 150mm diameter PVC pressure pipe to a depth of 300mm, fitted with an end cap with two drainage holes



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Three Livingston atmometers, which consist of a 75mm ceramic globe connected to a water reservoir, were used during the trial to measure evaporation (E) rate



The decision to oversow or not is finely balanced for many turf managers and it is important that all relevant information on the costs and benefits are available to support the decision



TABLE 1: LYSIMETER ET AND ATMOMETER EVAPORATION RATES (MM)

	Days of drying				
	0	6	11	16	20
Couchgrass	0	2.60 ^a	8.90 ^a	11.50 ^a	13.2 ^a
Couch and <i>Poa trivialis</i>	0	6.40 ^c	19.40 ^b	26.00 ^b	30.7 ^b
Couch and perennial ryegrass	0	8.40 ^d	30.30 ^c	42.60 ^c	51.3 ^d
Perennial ryegrass	0	8.50 ^d	30.20 ^c	41.10 ^c	47.9 ^d
E (mm, Livingston Atmometer)	0	5.00 ^b	17.80 ^b	27.50 ^b	36.2 ^c
LSD (P=0.05)		0.70	3.30	4.50	4.5

Note: Figures shown are mean cumulative rates over a 20-day period (14 August – 2 September 2011). At any particular assessment (e.g. after 6 days) ET values followed by the same superscript letter are not statistically significantly different.

The mini-lysimeter pots and atmometers were then weighed and placed in an exposed location and then re-weighed after 6, 11, 16 and 20 days. Weight loss values were converted to ET and E values (mm) and the accumulated values plotted over time. Results are shown in Table 1 (above) and Figure 1 (page 74).

DISCUSSION OF RESULTS

Couchgrass on its own continued to exhibit some drying through the 20-day trial. As the grass was completely dormant it is assumed that this drying was not through root uptake but simple surface drying, as would be expected in the field from the action of sun and wind.

Poa trivialis had significantly higher ET rates compared to couch on its own and at times its ET rates were actually higher than the atmometer estimate of evaporation. This means that the Crop Factor in Australia of *Poa trivialis* can actually be greater than 1, which is quite feasible and has been seen in other agricultural research, especially during the winter months.

The greatest water use during the trial period was from perennial ryegrass, either on its own or when oversown into couch. It exhibited significantly higher ET rates than all the other treatments, including *Poa trivialis*. Again, the perennial ryegrass ET rates were higher than the atmometer estimates of E and the Crop Factor was up to 1.5. This is probably due to the relatively high winter activity and growth of perennial ryegrass and possibly

because the weather during this period (sunny, with light winds) was conducive to grass ET more than atmometer evaporation.

The average ET rate from the ryegrass sward was around 2.5mm/day, or around 17.5mm per week, compared to less than 0.7mm per day (4.6mm/week) from the couch sward. One would expect that the extra 13mm/week of water removed from the profile in the ryegrass sward is via active root uptake and transpiration by the actively growing plant and the benefit could be seen in two ways.

First, it can be imagined as 13mm of rainfall that you didn't get that week. Or second, it can be equated to around 250,000 litres of water per week on an Australian Rules football oval that is now in the atmosphere, not still in the profile. Although we didn't test this, the benefit should be apparent in a firmer and better quality surface that won't get chopped up as much during a game.

But there are a couple of provisos. The extra drying effect of the ryegrass is only useful if there are a number of days without rain to allow the benefit to accrue. If it just keeps raining, they'll all be wet. Second, if the oval profile is sandy and well drained, any extra removal of water by ryegrass is not really relevant. The extra water use by ryegrass over winter would be most beneficial in heavy soils with poorly drained profiles and would only be evidenced after several dry days.

CONCLUSIONS

This trial validates the hypothesis that a winter active grass will result in higher ET rates from a turf surface over winter, compared to a dormant turf surface. The result provides evidence of a beneficial drying effect where the winter-active grass is present with perennial ryegrass found to have a significantly higher benefit than *Poa trivialis*.

In many situations the drying effect of this ET could be expected to result in firmer surfaces that are less susceptible to disruption from football traffic, resulting in a higher quality and more resilient sward through the winter. This conclusion should be considered by turf managers weighing up whether or not to go with winter oversowing of couch fields.

Editor's Note: This research project was conducted by Phillip Ford (University of Ballarat) on behalf of PGG Wrightson Turf. 🌱

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Sawtell Golf Club is located on a heavily-treed and undulating site on the NSW mid-north coast and has been home to course superintendent Trevor Ridge for the past 14 years. Pictured is the par four 16th, rated number one on the course



Sawtell Golf Club NSW

Superintendent: Trevor Ridge.

Nickname: Helmo (trade nickname).

Age: Rapidly closing in on 50!

Period as a superintendent: 14 years.

Period as an AGCSA member: 16 years.

Association involvement: NSWGCSA and GCSAA.

Turf management career: Leonay Golf Club (December 1978 to January 1990) – four year apprenticeship/greenkeeper/assistant superintendent; Pennant Hills Golf Club (October 1993 to May 1998) – greenkeeper/foreman/assistant superintendent (one of two); Sawtell Golf Club (June 1998 to present) – course superintendent.

Turf management qualifications: Certificate III Horticulture (Turf) Ryde School of Horticulture.

Where in Australia is Sawtell and what is the town famous for? Sawtell is 525km north of Sydney on the NSW mid-north coast and 8km south of Coffs Harbour. Sawtell is a popular tourist and holiday spot with good beaches for surfing, swimming and fishing. The Chilli Festival is held every July.

Tell us a bit about your background in turf management and how you got into it. I've been in the turf industry now for 30 years and it all started back in Year 9 when I did some work experience at Leonay Golf Club during the school holidays. That led to an apprenticeship at Leonay when I left high school after Year 10. After 11 years at Leonay I left to do some travelling and worked out of the turf industry until I was employed as a greenkeeper at Pennant Hills in the spring of 1993, working my

way up to assistant superintendent. In June 1998 I was employed by Sawtell Golf Club as the course superintendent and 14 years later I'm still here.

Like most superintendents, I got into turf because I enjoyed working outdoors and had a passion for the sport as a junior golfer. Even though I was a fairly good player, I knew early on that I didn't want to turn playing the sport into a job, so preparing the surfaces for a sport which I enjoyed was the next logical step.

Give us an overview of Sawtell Golf Club and some of its unique characteristics. Sawtell Golf Club was formed in 1936 with just nine holes and it wasn't until 1973 that the course was extended to 18. The course has improved over the years with an automatic irrigation system installed in 1990 with the supply of recycled water. Most of the greens have been rebuilt with a sand profile, with four old profile greens still causing us a few headaches when we get excessive rainfall due to their slow drainage rate.

A major change to the greens came in 1998 when the Board decided to convert them all to 328 hybrid couchgrass from bentgrass. The changeover was done in stages from 1998 to 2000. The other significant change to the course over its history is the maturing of trees and shrubs planted and the challenges the tree-lined holes have made to the course. There are some magnificent old gum trees which are a real feature of the course.

What are some of the unique features about Sawtell Golf Club from a turf management perspective? Is it an easy/hard facility to manage? Mother Nature determines how easy or hard the course is to manage. The course is on an undulating site and we have greens on the tops of hills which are exposed to a lot of wind being so close to the coast. They require more attention than the others, especially with irrigation. Also we had different sand types used during the redevelopment of the greens which creates some challenges, but across the board the change to 328 has made greens management relatively stress-free.

This edition's regional profile stops off at Sawtell Golf Club on the NSW mid-north coast where course superintendent and three-time AGCSA Golf Championship winner Trevor Ridge provides an insight into his course management operations.

One annoying turf maintenance problem is controlling carpetgrass seedhead on fairways during late summer, especially if there is long periods of wet weather. However, the amount of carpetgrass has reduced since I've been here. Shade issues have become a problem as trees mature and some selected trees have been removed.

Take us through your turf management operations there and how you have fine-tuned them during your time as superintendent? The basic turf management operations are the same as all clubs. The course is presented in the best possible condition every day as the club has to compete against Coffs Harbour and Bonville. It took a while to finetune maintenance programmes after the change to 328 but we now have a fairly set routine.

The biggest change to operations has been irrigation efficiency with the upgrade of the field satellites and a new pump station. Minimal handwatering is now required and we can water in products much more effectively when required. Primo has made a huge difference to the quality of the 328 greens and we use Primo in December on fairways to control them during the Christmas holiday period.

What are some of the major challenges facing Sawtell Golf Club both from a turf management and general club management perspective? The biggest challenge is financial with the area dogged by wet weather for over three years, declining membership and patronage, combined with ever-increasing costs and the impact on the horizon of the Carbon Tax. Our club is not unique with these challenges.

Outline any major course improvement works completed in the past couple of years and highlight any ongoing or future works. Drainage works have been completed on two holes with this work ongoing to have the course more playable during wet weather. A cart path programme has also started but there has been no progress for a year now due to money and weather – no carts on the course impacts income. The bunkers are also being slowly renovated due to the bad storm in March 2009 which totally trashed all of them.

The one product I couldn't manage my course without is... Primo. The difference it makes to the quality of greens during summer is incredible.

What are some pros and cons of being a regional superintendent? A relaxed lifestyle – I live 23kms from the course but it only takes me 15 minutes to get there and no traffic lights! The cons would definitely be the distance to attend events and waiting for spare parts/products and the cost of freight.



Are expectations of course presentation and conditioning any less than that placed on your metropolitan counterparts? No I don't think so. Members of all golf clubs, whether city or country, want their course to be in the best condition and as superintendent I aim to have my course in the best possible condition each week.

Do you have to be more resourceful as a regional-based superintendent? Yes. I've been lucky to have had two mechanics that are very resourceful at solving problems not only with machinery but many other situations over the years. We make our own tee markers, course signage, pigtail stakes and other items which keeps the costs down as we suffer a lot of petty vandalism with these items regularly going missing.

How important are the relationships you have with other nearby superintendents/trade reps? It's important to have some type of relationship with nearby superintendents as you never know

The Sawtell crew (from left) Matt Bolt, Clint Samuels, Paul Rogan, Brook Ennemuist, Chris Metcalfe, superintendent Trevor Ridge and Troy Fenton

The difficult par 3 15th at Sawtell. Between 1998 and 2000 all greens were converted to 328 couchgrass from bentgrass





◀ **The 12 hectares of fairways are a mix of kikuyu, Queensland blue couch, couchgrasses and carpetgrass. Pictured is Sawtell's sweeping par 4 18th**

when you may need their help or advice. Two trade reps Andrew Stankovic (Globe) and Adam Cauldwell (Greener P/L) have been a great source of information and service during my time here at Sawtell Golf Club.

Given your distance from the major metro areas, how do you make sure you keep abreast of the latest turf management techniques and methods?

All trade reps keep you up to date with products as they want to sell them to you. ATM and GCM are great sources of information. Attending the annual conference is always important and I always try to observe what might be happening on other courses when I play them.

What are some of the more unusual requests/things you have had to do as a superintendent of a regional course? For the past few years the Sawtell Carols by Candlelight has been held on the 9th hole which draws about 300 people. A semi-trailer is used as a stage. Managing the kids is a challenge, keeping them out of the bunkers and off a couple of greens even when they are roped off and have barrier mesh around them.

What have you got in your shed? Toro Greensmaster 3250D, Greensmaster 3150 (tees, collars and aprons), Reelmaster 5510, Reelmaster, 3100D Sidewinder (green and tee surrounds), Groundsmaster 328D, Multi Pro 1250 spray unit (all Toro equipment on a rental lease). Also have: Iseki 2160 and Ford 2600 tractors, Smithco Super Star bunker rake, Massey Ferguson utility, Toro Workman, Cushman Truckster utility, John Deere 1445 outfront, Bobcat skid steer loader, Tru Putt GR39 roller, Cushman topdresser, Greencare Coremaster 12, Turf Tec scarifier, Dean trailer.

The machines are well maintained even though some are over 10 years old. On the wish list is a turbine blower to remove leaves and tree debris from fairways for better presentation of the course and mowing efficiency.

Favourite spot on your course? I enjoy the outlook from the 2nd/5th green looking west over the course towards the hills. This is one of the highest areas on the course.

AT A GLANCE - SAWTELL GOLF CLUB

Course specs: 18 holes, par 71 5594m on a 41 hectare site. Just under 1ha of Tifgreen (328) putting surfaces, 0.5ha of tee tops (majority are Greenlees Park couch with some a mixture of kikuyu, Queensland blue couch and carpetgrass), 12ha of fairways and green surrounds (kikuyu, Queensland blue couch, couchgrasses and carpetgrass) and about 25ha of rough.

Members: 886 (668 playing members and 218 social members).

Annual number of rounds: Approx 36,000.

Major tournaments/events held during the year: Seaside Classic on Boxing Day and Ladies Spring Tournament in September.

Annual course management budget: \$380,000 (includes wages/super)

Staff structure: Trevor Ridge (superintendent), Brook Ennemuist (mechanic/fairway mower), Paul Rogan and Clint Samuels (groundstaff), casual groundstaff – Matt Bolt (30hrs), Chris Metcalfe (14hrs), Troy Fenton (16hrs) – plus volunteers.

Climate: Sub-tropical. We don't suffer too many extremes in temperatures (summer

high 20s and winter low 20s), but we do get a lot of extreme rainfall events. Average annual rainfall is 1700mm, but over the last three years that has been well exceeded:

- **2009:** 2809mm (including 575mm in 7 hours on 31 March)
- **2010:** 2041mm
- **2011:** 2330mm
- **2012:** 720mm to the end of March.

Soil types: Course is on a clay base with about 200-300mm of different types of loamy soil on top. Fourteen greens have a sand profile and four still a loamy soil profile.

Water sources: Tertiary treated recycled water since 1990 with an unlimited supply (currently at no cost) which is stored in a holding dam of 3ML (filled as required).

Irrigation system: Greens and tees are automatic valve-in-heads controlled by nine Rain Bird Par Field control satellites. Fairways have limited QC valves. The irrigation system is run by a Rain Bird E300 control panel with 3 Grundfos CR20 pumps. This pumping station was installed in 2007 with the assistance of a community water grant.

Cutting heights: Greens 3mm, tees 8mm, greens collar and approach apron 8mm, green and tee surrounds 12mm, fairways 12mm and rough 50mm.

Renovations: Greens have a major renovation in October the week after the school holidays which involves dethatching two or three times with thatch-away reels (this is done the week before). Renovation week sees double scarifying, 12mm hollow tine aeration, topdressing and fertiliser/amendment application.

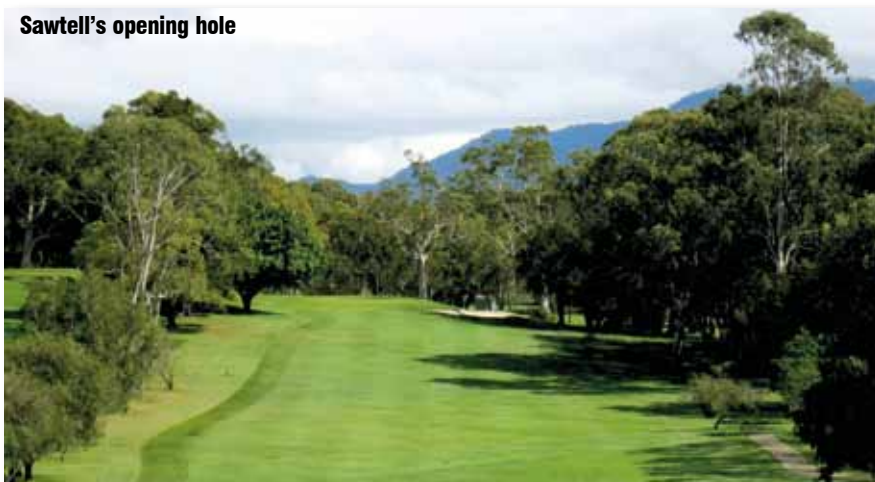
A minor renovation is done mid-January and involves dethatching twice, solid cross-tine aeration and light topdress. Greens are also dethatched 4-6 times during summer and solid cross-tine aeration late autumn. Tees are aerated twice a year using deep slicing blades and solid bayonet tines. Deep slicing of green surrounds once a year.

Major disease pressures: Don't have too many issues with major diseases but in saying that I do have a preventive programme during summer and preventive programme for spring dead spot.

Most pleasing/rewarding moment during your time as Sawtell Golf Club superintendent? When you get compliments from members and visitors and completing major course improvement projects.

Name three golf courses that you would like most to visit and why? Lost Farm in Tasmania (I saw the land pegged out prior to construction and would like to see the finished product); Augusta National (I watch the US Masters every year and it would be great to walk the course and feel the experience); and Old Head Golf Club in southern Ireland (have seen it on The Coast programme and it looks like an exciting golf course). 🌱

Sawtell's opening hole



OFF THE COURSE - TREVOR RIDGE

Family: Partner Anne.

Any claims to fame outside of turf management: As well as my three AGCSA Golf Championship titles, I am a seven-time club champion at Sawtell and foursomes champion at Leonay, Pymble and Sawtell. I was a member of the Pymble Pennant team for their one and only Group 1 Pennant win in 1997. Finished in the last 16 in the Australian Amateur. Also won the Sawtell Rotary Club's Pride of Workmanship Award 2011.

Any interesting hobbies/past-times away from turf? Not a lot as golf takes up a lot of time, but I do enjoy the interaction with Anne's horse at home.

Favourite sporting team? I have four – Sydney Swans, Penrith Panthers, Everton and the Washington Redskins.

What book are you reading now? The Incredible Contiki Story, Only Two Seats Left by John Anderson (I survived two Contiki trips in Europe).

Golf handicap? 4.

Favourite golfer? Seve Ballesteros and Rory McIlroy

The best thing about Sawtell (aside from the golf club) is... its climate (forgetting the rain for the last three years) and the old style charm of the Sawtell main street that leads to the surf just a very short walk away.

What do you do to get away from it all? Visit good friends and reminisce about the good ole days or take a holiday.

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LUCKY THEY'RE PLAYING AT AAMI PARK



AAMI Park was recently awarded the best playing surface in the A-League following a player survey

Melbourne's AAMI Park has been voted as the A-League's most outstanding stadium in the 2011/12 Professional Footballers Australia (PFA) Stadium Ratings System. Home to the competition's two Melbourne-based clubs Victory and Heart, the AAMI Park pitch was rated the best by visiting A-League captains, while the atmosphere created by the army of local soccer fans was overwhelmingly regarded by the players.

PFA president and Melbourne Heart defender Simon Colosimo presented the award for best pitch to AAMI Park head groundsman Justin Lang and the Melbourne and Olympic Parks Trust in mid-April.

"The on-field quality of the game has never been higher," Colosimo said. "Part of the reason for this is the high quality of the pitch at AAMI Park. I wish to congratulate AAMI Park and Justin Lang

for preparing such an outstanding field of play throughout the 2011/12 season."

AAMI Park general manager Shane Mates said "the horticulture team who prepare not only the pitch but the extensive elite training fields, have put in an extraordinary effort considering the amount of training and playing hours required by our home teams. It is a great honour for their hard work to be formally acknowledged by the players."

AAMI Park and Lang are the third recipients of the annual PFA award, which was won in 2009/10 and 2010/11 by Brisbane's Suncorp Stadium and its head groundsman Mal Caddies.

Since opening in May 2010, AAMI Park has held in excess of 100 events and welcomed more than 1.25 million fans through the turnstiles. Its natural turf playing surface is 130m x 76m with a 3m wide perimeter synthetic grass surround. The flat playing surface is based on USGA putting green construction, with a 300mm rootzone sand layer overlying a variable depth drainage gravel blanket. The top 100mm of the rootzone sand layer is amended with peat moss.

The AAMI Park profile is reinforced with StaLok fibres while the turf consists of Legend couch which underpins a mixture of SR 4600, SR 4220 and All Star 2 fine leaf ryegrasses. The Legend couch was selected because of its low thatch accumulation, high vigour and rapid recovery after wear. It is also conducive to oversowing and supports the ryegrass well. The selection of ryegrasses were chosen after two years of trial work and feature excellent wear tolerance and recovery from injury, improved summer stress tolerance and active winter growth.

MORISSET CC VICTIM OF 'HEARTBREAKING' VANDALISM



Morisset Country Club south of Newcastle was the victim of serious vandalism in January and March, causing tens of thousands of dollars worth of damage to six greens

Morisset Country Club course superintendent Nathan Reynolds had a start to 2012 he would rather forget after vandals caused tens of thousands of dollars worth of damage to six greens and surrounds across two separate attacks.

Unfortunately no stranger to such acts in past years, the first attack in January saw the 13th green (pictured left) torn apart by a 4WD. Reynolds and his team then turned up to the course one Friday in early March to find a further five greens – 4, 12, 15, 16 and the nursery green – ripped up along with damage to approaches and fairways.

According to an article that appeared in the Lakes Mail newspaper online shortly after the second act of vandalism, the club posted a \$2000 reward for information leading to the conviction of the offenders and also took a number of other measures including the appointment of a 24-hour on-course caretaker. CCTV cameras and lights were also considered.

The article quoted Reynolds saying that it was, understandably, "heartbreaking" for him and his staff to see their hard work being laid to waste by such

a meaningless act. As a result of the vandalism, the 13th green required complete reconstruction with a new bentgrass surface. The other five severely damaged required in-house fixing by bringing autumn renovations forward by two weeks.

Sydney's Cromer Golf Club was also a victim of three separate attacks around a similar time to Morisset, with the club posting a \$4000 reward for information leading to the arrest of the vandal who burned penis-shaped formations into greens and fairways.





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JACOBSEN UPDATES ECLIPSE WALK-BEHIND MOWERS



Jacobsen's Eclipse2 walk-behind mowers allow superintendents, managers and technicians to customise and control mower settings to varying course conditions

Jacobsen recently unveiled the new refreshed version of its Eclipse2 walk-behind mowers. Building on the quality-of-cut and control of the original Eclipse, the new range allows course superintendents and grounds managers to customise and control mower settings to varying conditions at their facility.

Retaining the electric motors for traction and cutting reel drive, the Eclipse2 is available in three cutting widths 45.7cm (18"), 55.9cm (22") and 66cm (26"), all with an optional petrol engine or drop-in battery pack. The 45.7cm (18") and 55.9cm (22") can be specified with fixed or floating head cutting reels with 11 or 15 blades. The wider 66cm (26") version has a 7-blade fixed cutting reel, giving a total of 18 models to choose from.

The patented true floating head allows the lowest heights of cut without scalping, even on the most undulating surfaces, and a wide array of frequency of cut (FOC) settings combine to produce a smooth and consistent playing surface. The Eclipse2 features an automotive differential, which provides greater tracking by driving the traction drum from one point, making it easier to track straight across the surface.

The Eclipse2 delivers a maximum mow speed up to 6.1kph while maintaining the tightest frequency of clip. The mowing speed can be set by the superintendent, manager or technician through a PIN-protected menu on the Eclipse2's InCommand control system. The transport speed has been increased to 8kph, making it quicker to move between working areas and counter-balance

springs in the handle ensure that the cutting reel sits 'true on the turf' when the operator grasps the handle.

On the hybrid version, with a Honda petrol engine powering a 48-volt generator, the engine has now been mounted through 180 degrees giving a better balance to the machine and also making starting easier, presenting the pull cord directly in front of the operator.

The mounting slots for the generator and battery pack have been extended giving greater flexibility to increase or decrease the weight on the front roller. This allows the superintendent or manager to determine the aggressiveness of the cutting unit on the fixed head version and helps ease of turning on the floating head model. This is a feature exclusive to Eclipse walking greens mowers.

Ease of maintenance has been improved with adjusters more accessible without removing covers and by making covers easier to remove, when needed. Other maintenance features include no clutches to adjust and onboard backlapping.

From an operator's standpoint, the Eclipse2 features the lightest weight handle, a repositioned pull start and a new kickstand. The LCD screen size has been increased to make it easier to read and the kickstand has been improved to provide easier operation.

For more information on the updated Eclipse2 models visit www.jacobsen.com or contact your local Jacobsen distributor – Proturf (NSW), Goddings (VIC), KC Farm Equipment (QLD) and McIntosh and Sons (WA)



E-PAR LAUNCHES SAFETY DIVISION

Environmental management system provider e-par has established a new workplace health and safety division known as e-par Safety. Headed up by e-par's Director of Safety Steve Wait (formerly of Safetee Pro), the golf-specific programme has been designed to assist course superintendents comply with the new Commonwealth Workplace Health and Safety Act which came into effect at the start of 2012.

Wait says that with the incoming legislation reform the timing has never been better for golf clubs to manage their safety obligations and ensure the wellbeing of their staff.

"Safety is an ever-present concern in the industry given the significant daily hazards present within the unique setting of a golf course and its operations, both from a course maintenance view point and the operation of the clubhouse," says Wait. "There have been a number of major incidents and accidents that have occurred in recent years which have resulted in a heightened level of awareness about the importance of safety management across the whole facility. This is now possible with the introduction of e-par Safety."

For more information about e-par Safety visit www.eparsafety.com.au or call Steve Wait on 0419 148 403



POP SOME BI-AGRA

Adjuvant and spray additive supplier SST Australia has developed a new moisture retention aid which will be released at

the upcoming 28th Australian Turfgrass Conference Trade Exhibition in Melbourne. Called 'Bi-Agra', SST Australia says that the product, when applied to turf with poor moisture-holding capacity, can increase moisture levels by up to five times, thus reducing irrigation requirements.

SST says Bi-Agra also assists water infiltration into water repellent soils. Ordinary wetting agents increase water infiltration which can lead to loss of moisture levels, whereas Bi-Agra aids water infiltration but holds onto water with its polymeric action.

SST products are available through distributors Globe Australia (Australia) and PGG Wrightson Turf (New Zealand).

INDUSTRY APPOINTMENTS AND ANNOUNCEMENTS

DAVID WESTALL RETURNS TO EVERRIS

David Westall (pictured) has recently returned to his role as technical manager turf and amenity for Everris after a 10-month battle with a rare form of cancer. Westall was diagnosed with Ewing sarcoma on his sciatic nerve shortly after last year's 27th Australian Turfgrass Conference in Adelaide and has undergone high-load radiotherapy and chemotherapy for the last nine months.

Westall finally received a clean bill of health from doctors after his most recent scans in March and has now returned to his management role with Everris (formerly Scotts Professional). "I would just like to thank everyone within the turf industry for their support and kind words over the past 10 months and I am really looking forward to getting back." Westall can be contacted on 0407 183 864 or by email David.Westall@everris.com



Chris Sutherland, managing director of Programmed, said in a press statement released shortly before Easter: "This acquisition fits our strategy for the Property and Infrastructure division, strengthening our grounds maintenance business. It will bring a number of long-term contracts and customers and provide opportunities for us to supplement Turnpoint's existing specialist skills with additional services."

Purchase, Turnpoint's chief executive who will join Programmed's Property and Infrastructure division as a result of the buyout, commented: "The golf, racing and general sports stadia market is increasing due to the continued pressures on owners to outsource maintenance, access more specialised equipment and improve productivity. As part of Programmed, we will be able to accelerate our future growth plans."

Established in 1951, Programmed Maintenance now employs more than 10,000 staff and tradespeople across a broad range of government and private sector industries in the resources, infrastructure, education, manufacturing and logistics, commercial/retail and tourism and recreation markets both in Australia and New Zealand.



PROGRAMMED BUYS OUT TURNPOINT FOR \$9.1M

Western Australian-based Programmed Maintenance has bolstered its business by announcing shortly before Easter that it had bought Turnpoint Group for \$9.1 million.

Victorian headquartered Turnpoint Group, which was founded in 2002 by **Andrew Purchase**, provides landscaping, construction and maintenance services for golf courses, racecourses and major sports stadia across Australia. It currently has the maintenance contracts at a number of golf courses and racecourses including St Andrews Beach (VIC), Magenta Shores, Kooindah Waters, Royal Randwick and Warwick Farm (all NSW).

MCKAY JOINS SIMPLOT

Simplot Partners has announced that **Scott McKay** (pictured) has joined the company as technical development manager. McKay's role will include supporting the Apex nursery market and customers as well as heading up the company's analytical service and product development.



McKay has an extensive background in the professional turf market in both Australia and Asia and most recently was a regional turf manager for Jebson and Jessen Technology based out of Singapore. Prior to that McKay was course superintendent at Northlakes Golf Club in Brisbane and in 2005 was named the joint winner of the AGCSA Claude Crockford Environmental Award

Although his new role is a national one, McKay will be based at Simplot's Queensland base in Ormeau and can be contacted on 0419 768 174, (07) 3902 7086 (office number) or email scott.mckay@simplot.com.au.



LAUGHLIN TORO WA/NT TERRITORY MANAGER

Toro Australia has appointed **Michael Laughlin** (pictured) to the role of Irrigation territory manager for Western Australia and Northern Territory. Laughlin has worked for Toro on a consultancy basis for the past five years supporting the company in the Asia region and brings with him over 30 years experience in the irrigation industry, including 18 years selling drip irrigation to agricultural growers.

Toro Australia director Tim Emery said Laughlin has a passion for the irrigation industry and brings a wealth of drip irrigation and filtration experience to his new role with the company. Laughlin will deal with irrigation dealers and growers in WA and NT and can be contacted on 0417 553 908 or email michael.laughlin@toro.com.



FLORATINE'S CANNY IDEA

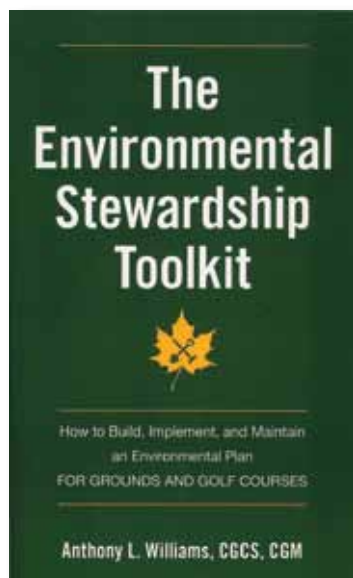
Floratine will be unveiling one of its more novel products at this year's 28th Australian Turfgrass Conference. Marketed as NutriFoam Pro, it is essentially a ready-to-use foliar nutrient supplement designed to be applied with an aerosol can.

Floratine's business development manager for Asia Pacific Paul Dugmore says that each can covers 16m² and is ideal for superintendents and assistant superintendents to carry around with them in their work vehicle.



NutriFoam Pro can help superintendents target specific areas including around holes/cups, walk on areas that encounter high traffic, areas affected by high heat or any location where the turf is weakened or thinning. Once sprayed on the desired area, the white foam disappears off the leaf within 5-7 seconds delivering a precise calculation of key nutrients to the plant.

For more information about NutriFoam Pro, visit the Floratine website www.floratine.com



The Environmental Stewardship Toolkit

By Anthony L. Williams

Wiley (2012)

Dedicated to anyone who is striving to become a better environmental steward, Anthony Williams' 300-plus page soft-cover book titled *The Environmental Stewardship Toolkit* is a practical, single source guide to all facets of environmental management.

Williams is director of grounds at the Evergreen Marriott Conference Resort, Stone Mountain Inn, and Stone Mountain Golf Club in Stone Mountain, Georgia. As well as being a certified superintendent, grounds manager, arborist and graduate of the GCSAA's Environmental Management Program, Williams was the recipient of the 2010 GCSAA President's Award for Environmental Stewardship.

His book is broken down into five main sections – environmental management, resource management, community engagement and green public relations and documentation management

with a final section devoted to various green industry professionals discussing their experiences in improving the environmental management of their facilities.

With detailed coverage of site assessment, water quality and conservation, wildlife habitat management, IPM, and resource conservation, this book offers guidance and customisable implementation plans from a leading golf course superintendent and grounds manager. Illustrations, photos and sample documents throughout allow readers to visualise what's explained in the text, and then implement it using templates provided.

The Environmental Stewardship Toolkit is now available through the AGCSA Bookshop and AGCSA members can purchase a copy for \$92 (non-members \$110). Contact the AGCSA on (03)9548 8600.

ALSO AVAILABLE FROM THE AGCSA TRADESHOW STAND IN MELBOURNE....



The Royal Melbourne Golf Club – History of the Courses

By John S. Green, FSGP 2011

This superb, limited edition (just 500 copies have been printed), 224-page hard cover book details the history of Royal Melbourne's famed West and East courses. Compiled by former club champion and avid historian John Green, the book concentrates on the period 1901 to 2001, from when the Royal Melbourne Golf Club first moved to its location in Sandringham in Melbourne's south east through to the time before recent alterations were made. One of the most complete works produced on this sandbelt icon, this book is an absolute must-have.

AGCSA members: \$215 (not available to non-members)



Turf Maintenance Facility Design and Management

By John Piersol and Harry Smith, Wiley 2009

Aimed at turf technicians and turf managers alike, this 180+page hardcover book examines a range of proven techniques that will enable them to design, build and manage an efficient and safe turf maintenance facility or overhaul an existing facility. Calling on nearly 50 years' combined experience, the authors look at how to develop and implement cost effective maintenance programmes to help maximise the performance of plant equipment. One of the AGCSA's best sellers over the past 12 months

AGCSA members: \$99

Non-members: \$115



Sustainable Golf Courses: A Guide to Environmental Stewardship

By Ronald G. Dodson, Wiley 2005

Complete with a foreword from the legendary Arnold Palmer, this 288-page hardcover book aims to serve as a reference for all those involved in planning and constructing new golf courses, and those involved in the management of golf courses, to help meet the economic, ecological and social issues facing golf. One of Dodson's key messages is that the game of golf and golf courses can be a catalyst for change, bridging the gap between what is thought of traditionally as 'development' and what is thought of as 'sanctuary'.

AGCSA members: \$115

Non-members: \$132



Golf Architecture: A Worldwide Perspective

By Paul Daley, FSGP

Since the first of Paul Daley's *Golf Architecture: A Worldwide Perspective* books was published back in 2002, the series has blended fascinating essays and stunning photography to provide an insight into the architectural elements and history of some of the world's great golf courses. Five volumes have been published to great acclaim with Volume 6 due for release in July 2012. The AGCSA has in stock copies of Volumes 3, 4 and 5.

AGCSA members: \$60

Non-members: \$69



Best Management Practices for Saline and Sodic Turfgrass Soils

By Carrow and Duncan, CRC 2011

Using the BMP concept, Bob Carrow and Ronny Duncan examine the complex issues around salinity management, presenting comprehensive scientific principles and detailing practical management and assessment recommendations for turfgrass and landscape sites. The overriding message is that there is no 'silver bullet' amendment, treatment, or grass for salinity management and that only a holistic BMPs approach will be successful and sustainable.

AGCSA members: \$121

Non-members: \$145



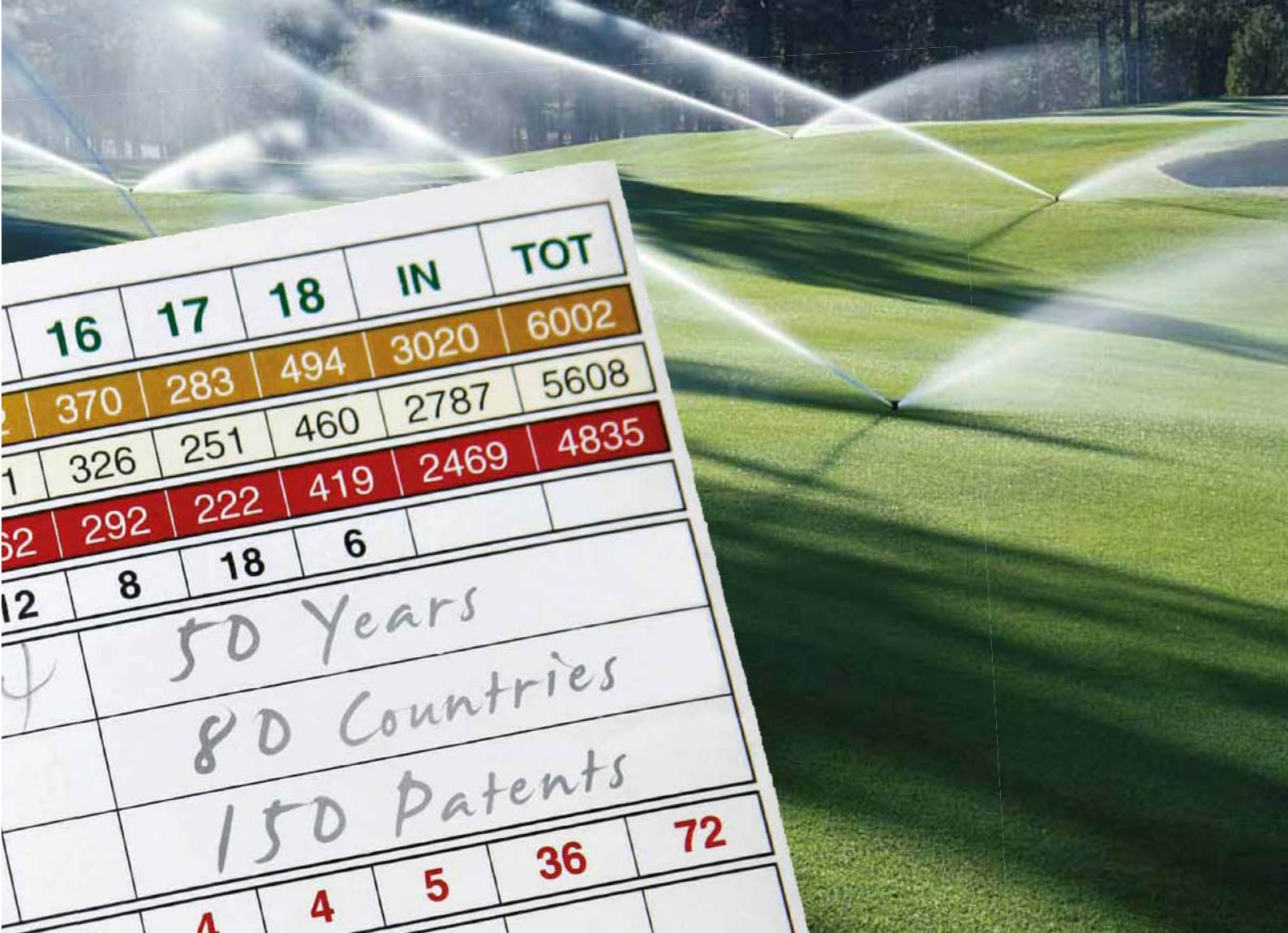
Turfgrass Management (9th Ed)

By A.J. Turgeon, Prentice Hall 2012

Over the past 25 years Alfred Turgeon's *Turfgrass Management* has become regarded within the industry for its thorough coverage of turfgrass science and technology and has been a principal text for those starting in the industry. 2012 sees the release of the ninth edition which contains numerous updates including expanded coverage of the history of turf, anatomy and morphology, climatic adaptation as well as soil physics.

AGCSA members: \$247

Non-members: \$284



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This year's Turf Australia conference on the Gold Coast will see the return of the popular field day and expo



Turf growers in Paradise

ATM looks at the latest news from the Australian turf producer sector including the upcoming conference to be held on the Gold Coast.



www.turfaustralia.com.au

OSCROFT JOINS HANCEY'S

Queensland-based Hancey's Turf has announced the appointment of **Danny Oscroft**. Oscroft will be leading Hancey's team in south east Queensland to work with established and new clients from initial project consulting through to maintenance programmes. With 20 years industry experience in project management and turf consulting, Oscroft is available to discuss any upcoming projects. He can be contacted on 0439 306 616 or email e-sales@hanceysturf.com.au.

Turf Australia will host its annual conference on the Gold Coast from 22-24 August 2012 which will see the return of the traditional and popular field day and expo. Registration for the annual conference, which will be held at Mantra Legends, Surfers Paradise, opens in May.

"In 2011 Turf Australia held its conference in Adelaide and for the first time in many years focussed purely on business aspects of turf production," says Turf Australia general manager Matthew Holmes. "It was a departure from the norm most notably for the absence of a field day and expo, but delegate feedback indicated the format and theme resulted in one of the most successful and educational conferences ever.

"This year, being the 10 year anniversary of the association, we wanted to return to the ever-popular field day to showcase new innovations and machinery, while still providing business skills to growers".

The field day will be held at Australian Lawn Concepts near Canungra, QLD, hosted by owner and Turf Australia board member **John Keleher**, winner of the 2011 Farm Industry Leader of the Year Award.

Conference educational sessions will include presentations from noted speakers in the fields of:

- Information technology;
- Time management;
- Tendering;
- Working with family
- IR and HR;
- Marketing;
- Cost of production modelling.

The final day of the conference includes the Turf Australia Annual General Meeting, Annual Levy

Payers Meeting and a field visit to the DEEDI Redlands Research Station to view the levy-funded soil erosion control demonstration facility in action.

Full or part registration is now open and registration forms can be sourced from the Turf Australia website www.turfaustralia.com.au or contact administration manager Christine Hughes on 07 3286 6601 or admin@turfaustralia.com.au

NEW APPOINTMENTS

The Gold Coast conference will give the industry the chance to meet and welcome two new industry development officers (IDO) who were appointed to their respective positions in early May – **Louise Edmonds** and **Lisa Erhart**.



Edmonds



Erhart

Edmonds becomes the IDO for the Turf Growers of Association of Western Australia (TGA WA), replacing Eva Ricci who resigned earlier in the year after some four years in the industry. Edmonds' role will mirror Ricci's which essentially supports industry development of the turf production and sports turf maintenance sectors of WA. She can be contacted on 0499 771 691 or idowa@turfaustralia.com.au

"Eva was a well-liked and appreciated asset to both TGA WA and TGAA WA," says TGA WA chairman and Turf Producers Australia chairman Adrian Pitsikas. "Initially providing administrative support to both associations, her role grew to encompass industry communication, organising the hugely popular UWA Research Day and turf industry advocacy, all of which eventually became very important parts of the HAL-funded WA Turf Industry Development project. Eva has decided to spend more time with her family and the industry wishes her the best for the future.

"Louise brings to the turf industry considerable experience. Her last position was with the parliamentary electorate office of Peter Tinley MP as research and media officer and prior to that has provided technical and business development support to organisations such as Custom Composts, City of Bayswater, Carbon Neutral and Community Fair. With these media and development skills Louise is sure to become a committed advocate for the WA turf industry."

On the east coast, Lisa Erhart joins the turf levy erosion control project as IDO. Erhart comes from a project management and consultancy background, providing services to organisations such as Turf Queensland for their Eco-Turf Project, Greener Live Performances as well as various council, mining and developer clients.

"The erosion control turf research and development facility is probably the most ambitious levy funded project (TU10025) the turf production industry has undertaken," says Holmes. "Lisa will

be working closely with DEEDI project manager Shane Holborn to interact with and encourage councils, architects and designers, universities and construction companies etc to participate in the demonstration days and to help on the day with presentation and educational material."

The facility is expected to be demonstrated 'commercially' for the first time in May, with monthly demonstrations planned for the next three years afterwards. Erhart can be contacted on 0418 822 108 or idoec@turfaustralia.com.au

TA, LANDCARE JOIN FORCES

Turf Australia has partnered with Landcare to showcase the benefits of turf to the next generation of Australians. This exciting programme forms part of the Junior Landcare programme and encourages schools to pitch for a new lawn area for their school. With over 3000 schools in the programme, it will be sure to gain considerable attention from schools and, just as importantly, school children's parents.

"Many Australians under-appreciate turf and what it does for promoting a healthy outdoor lifestyle," says Turf Industry Advisory Committee member and owner of Caboolture Turf Tony Cross.

"Partnering with Landcare to spread this message is a natural choice. This programme aims to educate children and through them parents and other family members, while helping the local community to engage in the great outdoors."

Three schools in every state will be chosen on merit to receive a new "perfect patch of green", donated and laid by a local turf producer with advice on how to best maintain it. For more details or to contact Turf Australia please call 07 3286 6601.

"I would strongly encourage every member of the turf production and maintenance sector who has children to get their school involved," says Cross. "It is a great message to send for turf and one we can all help promote." 🌱



The soil erosion control demonstration facility

TURF QUEENSLAND MOVES FORWARD

Even though times are hard and market conditions are not encouraging to say the least, Turf Queensland continues to move forward in the areas of economic sustainability and industry professionalism for its members.

The development of technology and the on-farm assistance through assessment processes, the Turf Cost Calculator, efficiency and sustainability programmes, annual workshops and on-farm shed talks, real-time 'Members Only Alert' programme and Turf Queensland's Turf Accreditation Programme, all continue to be well received by members.

On top of this the Queensland turf production industry continues

to undertake work in the nutrient and sediment movement and erosion control areas with state-wide promotion and visits to all local government shire councils.

Unfortunately as with all industries (other than mining) recovery will be medium- to long-term as both state and federal government urgently need to put recovery strategies in place. Fortunately Turf Queensland has a number of projects in place to support the turf production industry in its sustainability.

Jim Vaughan
Chief Executive, Turf Queensland



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Sanctuary Cove's new Palms Course turned one in April



GCSAQ winners at the Queensland Golf Industry Awards (from left) Ben Tilley, Pat Pauli and Ray Lawrence

In the south east of Queensland the weather has settled somewhat and the rainfall has stopped to allow us to bask in some great weather. Easter was particularly kind across the region and golf courses were full of players generating some much needed revenue. It's a bit different up north in the tropics though with the rain once again being measured in metres!

Elsewhere around the state, Sanctuary Cove's **Robin Doodson** recently celebrated the first anniversary of the opening of the Ross Watson designed Palms Course. Robin reports that 12 months on from opening the course has matured very well and is receiving great feedback from members and guests alike. The wet weather has been a challenge in recent months but the golf course and in particular the bunkers have held up really well. **Dean Henderson** reports on the demise of the 'Hyatt' branding for his golf course on the Sunshine Coast after 23 years and the introduction of a new name – Coolum Golf & Spa.

The Queensland Golf Industry Awards have been run and won and the GCSAQ was proudly represented by our winners and distinguished guests. The winners were...

ASSISTANT SUPERINTENDENT RECOGNITION AWARD

Winners: **Ray Lawrence** (Brisbane Golf Club), **Matt Duff** (Bonville Golf Club), **James Gordon** (Sanctuary Cove Country Club)

Presented in partnership with Simplot Partners, this was a new award and the three winners won the privilege to attend a one week internship at Sentosa Island Golf Club where they worked side by side with local staff in the preparation of the golf course for the 2011 Barclays Singapore Open.

SUPERINTENDENTS ACHIEVEMENT AWARD

Winner: **Ben Tilley** (Headland Golf Club)

Ben has been the superintendent at Headland Golf Club since 2007 and was nominated for the Chesterfield/John Deere sponsored award with glowing recommendations from the club hierarchy.

Ben has had to cope with drought, flooding rains and limited budgets during his time at Headland but due to his skill and enthusiasm the course has developed into one of the Sunshine Coast's best.

TURF APPRENTICE OF THE YEAR

Winner: **Nicholas Reeve** (Murwillumbah Golf Club)
Nicholas has acquitted himself exceptionally well throughout his apprenticeship at Murwillumbah and is the first apprentice to be re-employed as a qualified greenkeeper at the end of his studies.

SUPERINTENDENTS INDUSTRY RECOGNITION AWARD

Winner: **Pat Pauli** (Horton Park Golf Club)

Pat started his time at Horton Park Golf Club in 1982 and was involved in the conversion of the greens from blue couch to 328 and the fairways to Greenlees Park couchgrass. Throughout his time at Horton Park, Pat has found time to serve on the committee of the GCSAQ, including stints as secretary and president, and last year finished five years on the AGCSA Board. Pat has always been available to offer assistance and advice to clubs ranging from the smallest to the largest and his opinion is always highly regarded.

Pat's reaction to winning the award was: "I have never looked upon the work that I have done for the superintendent associations as that, but rather giving back something to the industry that has supported my way of life. I have had a good time and met some wonderful people."

On the same day as the awards the GCSAQ held an education day which was very well attended. In my years of attending superintendent meetings I have rarely seen such enthusiasm shown from the audience and the dialogue exchange with the speakers was tremendous.

Steve Wait from e-par Safety was on hand to explain the new WHS laws, while **Keith McAuliffe** from the Sports Turf Institute spoke to us about performance testing of sportsfields and how some of the same technology could be applied to golf courses. And the ever present topic of skin cancer was covered by the very entertaining **Marcus Handley** who at 86 has had numerous melanomas removed and lived to tell the tale in his own inimitable way.

The 2012 GCSAQ bus trip dates have been finalised and we will be descending upon Toowoomba from 20-22 July. The GCSAQ AGM will be held at **Charlie Giffard's** Indooroopilly Golf Club on Monday 27 August and the GCSAQ Turf Research Golf Day will be played on the Pines Course at Sanctuary Cove.

PETER LONERGAN
PRESIDENT, GCSAQ

David Canterbury, formerly of Kiama Golf Club, has been named the NSWGCSA Vince Church Graduate of the Year following judging on 26 March at Northbridge Golf Club. David, who was earlier this year appointed assistant superintendent at Adelaide Shores (SA), will now go on to represent the NSWGCSA in the final of the AGCSA Graduate of the Year Award.

David beat a strong field of finalists which included **Mitchell Pedron** (Emerald Downs Golf Club), **Lee Moore** (Toukley Golf Club), **Adrian Kuipers** (Concord Golf Club), **Peter Blain** (Twin Creeks Golf Club) and **Luke Rosborough** (Campbelltown & Bankstown Golf Clubs). Deciding upon a winner was particularly difficult and we are sure that all will go on to be high achievers in the turf management industry.

The NSWGCSA would like to thank Golf NSW for their generous support of the Vince Church Graduate of the Year Award. **Graeme Phillipson**, general manager of Golf NSW, was present to award each of the finalists a cheque for \$150. Each finalist also received a \$200 book prize, one-year membership to the NSWGCSA, a golf shirt and a crystal trophy.

As mentioned in previous editions, the NSWGCSA is pleased to announce that it has introduced four



scholarships in 2012 for post graduate TAFE studies. Known as the **Peter McMaugh Scholarship**, there will be two scholarships offered to study the Diploma in Turf Management at Ryde TAFE and another two to study Certificate IV in Turf Management in a regional area.

The NSWGCSA is delighted to announce that **Ryan Suckling** (Pennant Hills Golf Club) and **Oliver Bell** (Terry Hills Country Club) will be undertaking their Diploma studies, while **Mitchell Pedron** (Emerald Downs Golf Club) and **Liam Way** (Charlestown Golf Club) will undertake Certificate IV through Kurri Kurri TAFE.

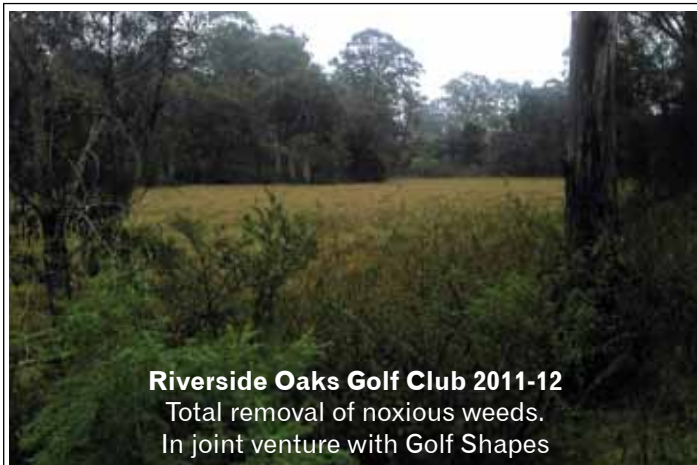
Finally, on 29 March, the NSWGCSA co-sponsored **Graeme Colless's** Dad & Dave's Turf and Evergreen Turf's fourth annual Charity Race Day in support of the Hawkesbury Living Cancer Trust. This year's event raised a further \$90,000 and trustee **Vivienne Legget** expressed her utmost appreciation for our support.

The NSWGCSA recently held its Vince Church Graduate of the Year Award at Northbridge Golf Club



More than \$90,000 was raised at the Dad & Dave's Turf and Evergreen Turf's fourth annual Charity Race Day in support of the Hawkesbury Living Cancer Trust

**CRAIG MOLLOY
PRESIDENT, NSWGCSA**



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After 30 years in New Zealand, Dr Richard Gibbs will be returning to the UK to take up a position with the STRI

The recently formed Sports Turf Association of New Zealand (STANZ) had its first full executive meeting at the end of February 2012. The meeting focussed on business planning, regional representation and membership and from it one thing was very clear – we need to grow and look at ways in which we can operate on a much more national basis rather than relying on the current Auckland-dominated set-up. In time it will also be beneficial to align some of our activities with sister organisations in Australia.

STANZ has a place on the governance board of the NZ Turf Conference & Trade Show. A sub-committee of the Board met in March to carry out a strategic review of the future and organisation of the conference. Although popular, some sector numbers have been declining over the years and the Board needs to make sure that the conference remains viable. It is the only opportunity for the entire NZ turf industry to come together and a few Australian turfies enjoy crossing the ditch too! The outcome is that the sub-committee has recommended several changes to the conference structure in an effort to get more buy-in from the contributing sectors. We'll be able to announce these changes in the next issue.

February was a particularly difficult time for those in Canterbury as the country marked the first anniversary of the devastating February 2011 earthquake. I was fortunate enough to be in Christchurch for the anniversary and it was a humbling experience standing among 400 construction workers for a two minute silence at the site of the new Christchurch Temporary Stadium.

The new 17,000-seat stadium (called AMI Stadium) has been an ambitious project, built from scratch at the old rugby league ground at Addington Park in less than four months. The ground hosted its first Super15 rugby game on 24 March. **(See more on this project on page 34 – Ed)**

The pitch construction has probably been the biggest turf recycling project that has ever been carried out in New Zealand. The existing Addington Park pitch was re-levelled and drained with a new system of lateral and slit drains and a new irrigation system installed. Turf and sand was then recycled from the earthquake-damaged AMI Stadium to complete the profile. Here's hoping for a speedy recovery for Canterbury and a much better year ahead.

Finally, it is with a degree of sadness that this will be my last contribution as chairman of STANZ. After nearly 30 years since first arriving in New Zealand as a PhD student to study at the then Lincoln College just outside Christchurch, I am returning to the UK to work as a project/new business manager for the Sports Turf Research Institute in Bingley, West Yorkshire.

I will take with me very fond memories of my time in the Antipodes and I thank all those in the turf industry who have given me the opportunity to work with them. I am pleased to announce that **Ian McKendry**, grounds and facilities manager for New Zealand Cricket, will be taking over as chairman and I wish the organisation all the very best for the future.

DR RICHARD GIBBS
OUTGOING CHAIRMAN, STANZ

Autumn in South Australia has been particularly dry with mild temperatures making for great golfing conditions. Most clubs have completed an autumn greens renovation and are now gearing up for the pennant season.

In late February at the picturesque Adelaide Oval we were treated to a very thorough talk from curator **Damien Hough**. Damien explained the many aspects of preparing the main oval outfield and cricket wickets. The dedication and work that goes into preparations for play are unbelievable and everyone walked away with a greater respect for the consistent way Adelaide Oval is presented. What many may not realise is that as well as the Adelaide Oval, Damien and his team manage a number of other ovals, another 15 turf wickets, grassed areas, gardens and parklands.

Although still relatively new to the position as curator, Damien has some very challenging times ahead. The Adelaide Oval has just started a major redevelopment which will include new stands, new

outfield and the introduction of drop-in cricket wickets all in preparation for the venue to host AFL in 2013. A huge amount of preparation has gone into the drop-in wickets and getting the process right and at the time of our visit construction of the concrete moulds was underway.

Some people are worried about how the drop-in wickets will perform at Adelaide Oval and whether there will be much variation from the traditional block. Damien and the team he has behind him have put a great deal of thought into the project and have set specific goals to get the wickets to perform at the high standard as they have for many decades. I have no doubt it will be a success and we wish Damien and his staff all the best.

Our next meeting will be a bus trip down the south east to visit a number of clubs including Penola, Mt Gambier and Millicent.

SAM SHERRIFF
PRESIDENT, SAGCSA

The last couple of months have been a time of change here at the NZGCSA. It was with real regret and sadness that we had to accept the resignation of our president **Grant Bunting** (Wanaka Golf Club) in March. Grant has accepted a position with PGG Wrightson Turf, a well known and respected company both here and in Australia and a wonderful supporter of the NZGCSA.

Grant's passion, enthusiasm and efforts for our association (albeit briefly as president but as a board member for the past four years) have lifted the profile of our association. He put in place some great templates and structures which will serve us well as we move forward. We wish Grant and his family all the best for this exciting change and it is great to know he will not be lost to our industry.

With the NZGCSA AGM and elections due to be held in June it was decided by the Board that I would be rolled out of retirement to fulfil the role of interim president following Grant's resignation. I thank them for their invitation and support shown.

Fiona Izard has taken over the role as NZGCSA administration officer following the retirement of Jo Hannah who had previously filled this role. Fiona's contact details are on our website, but with the main forms of contact (email and phone) remaining the same, a seamless transition will take place.

The North Island Fine Turf Seminar in Palmerston North will run from the 18-19 June and more information is now available at www.nifts.co.nz. The NZGCSA will be holding its AGM during this event (Tuesday 19 June) and we look forward to what should be a great couple of days of education. Sadly, the planned South Island Fine Turf Seminar in July has had to be postponed due to logistical problems caused by the earthquakes and subsequent aftershocks in Christchurch.

The NZGCSA is currently finalising its award winners as I write this report and I would like to commend everyone who has put their name forward. The continued support of our sponsors makes these awards possible and we look forward to notifying you all of our winners.

I, along with a contingent of Kiwis, will be gracing your shores for the upcoming Australian Turfgrass Conference in Melbourne and I look forward to your great hospitality and unrivalled banter. On behalf of the NZGCSA we wish the AGCSA well for the conference and trade show and I look forward to seeing as many of you there as possible.

PETER BOYD
INTERIM PRESIDENT, NZGCSA




Grant Bunting has stepped down as NZGCSA president after taking on a role with PGG Wrightson Turf

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TGCSA 

In April, a select group of turf management apprentices in Tasmania had the opportunity to participate in a trial conducted by the Skills Institute using their new 'virtual classroom' technology. The Skills Institute Mobile Training Centre has been purposely built for remote training and can accommodate up to 15 students



Superintendents and turf managers around Tasmania have been blessed with a reasonably mild summer. Combined with regular rainfalls around the state during this time, most areas have had ample water in storage to get right through summer without having to cut back on fairways. It certainly is nice to get an easy summer occasionally.

The first TGCSA education day for 2012 was held on 29 February at the sensational new Twin Ovals complex at Kingborough. Sponsored by Syngenta and Tasmania Farm Equipment, the day started with **Phil Ford** who gave two presentations. His first talk focused on sports turf injuries and looked at traction and surface firmness of different soil types on ovals. Phil's second talk covered root decline in cool-season grasses.

Geoff Koop then spoke to delegates about the service that will be provided around the state for Jacobsen/Cushman/Ryan now that Tasmania Farm

Equipment has taken on this range of equipment. A great range of machinery was also on display outside. After a BBQ lunch, **Patrick Madden** from Syngenta then spoke on preparing soils for oversowing.

Chris Hay from Kingborough then took delegates on a tour of the new cricket wickets, ovals and facilities at the complex. Thanks to the sponsors and all the speakers on the day who provided great content. With such quality speakers, I was disappointed at the attendance for this day and the committee will now have to look at whether any events can be held down south.

Our next day will be held at Longford Golf Club (superintendent **Ricky Barr**) on 15 May. This day will involve some presentations early before a cooked lunch. We will then have a look at some bunker construction on the course before heading out for a two-ball Ambrose event. Teams or singles can RSVP and we will team up players for the day. I hope to see you all there.

Finally, some apprentices throughout Tasmania have recently had the opportunity to participate in a trial conducted by the Skills Institute using new 'virtual classroom' technology. The Skills Institute has obtained Federal Government funding to trial the new National Broadband Network (NBN) which is currently being rolled out across Tasmania.

On 4 April the Skills Institute conducted a turf training trial with the NBN from Midway Point Community Centre with trainer assessor Mark Potter talking and communicating to 8-10 apprentices and their supervisors situated in Scottsdale via laptop. The Skills Institute Mobile Training Centre, purposely built for remote training (see photos above), can hold up to 15 students who all have laptops.

During the hour-long session students looked at some local, interstate and international turf venues through 3D Google Earth maps, including the MCG, Lords and Augusta National Golf Course. This gave the apprentices a chance to have a look at these turf icons in a different way and at different times throughout the year. They also looked at turf diseases, irrigation uniformity, nutrition, course layouts and history and viewed YouTube clips of different turf machinery.

This type of training technology will be used more and more over the next few years as the NBN gets rolled out. We will be able to transmit into the apprentices own worksite or home, saving the apprentice and employer time and money. The computer world is changing rapidly and with our apprentices being able to use this technology it will help them gain more information and use better tools to manage our turf areas in the future.

TGAA VIC 

TGAA Victoria trusts you are all travelling well and preparing your grounds or venues for the rigours of the winter months ahead. What an autumn we have had this year with the slightly warmer weather in most parts making life a little easier. To our friends and colleagues in flood-affected areas in the north of the state, we hope all the recovery efforts are going as planned.

On that note, TGAA Victoria postponed its 2012 Regional Seminar at the Wangaratta Turf Club out of respect to those affected by the floods. In doing so we also donated \$1000 to the relief fund in a show of support to the region. We wish them well as recovery efforts continue. Stay tuned for further information regarding the rescheduling of this day.

As we near the middle of the year we are fast approaching the Australian Turfgrass Conference in Melbourne. This

is always a great opportunity to showcase what we do as an industry collective. Please ensure that you check out the Sportsfield stream as the format this year is a little different to previous years. TGAA will also be on Stand 44 and 45 during the trade exhibition along with our interstate mates from the STA, so drop by and if there is anything we as your association can do then please let us know.

We will also be holding our annual TGAA Victoria Cricket Wicket Seminar, sponsored by Cricket Victoria, on Wednesday 25 July at the MCG. We have a great line-up of guest speakers including **Cameron Sutherland** (WACA) to speak on how things are done over in the West. We will also have **Max Walker** as guest speaker, who will no doubt add some humour to proceedings.

NATHAN TOVEY
PRESIDENT, TGAA VIC

TONY SMITH
PRESIDENT, TGCSA

The weather in Western Australia has turned mild of late which has been well received after another hot and dry summer.

The WA Golf Industry Awards Night at the Burswood Entertainment Complex has come and gone with nearly 580 people from all sectors of the industry attending. Royal Perth Golf Club (superintendent **Michael Dennis**) was a big winner on the night, collecting Golf Club of the Year and Employee of the Year as well. The GCSAWA was proud once again to be involved with the night and we handed out three awards.

Long-time GCSAWA member and Wanneroo Golf Club superintendent **Jon Carter** collected the Greenline GCSAWA Superintendent of the Year Award. Jon was joined by Burswood Golf Club course superintendent **Peter Flemming** who received the McIntosh & Son and Jacobsen Environmental Award, while **Jeromy Malkin** (Mosman Park Golf Club) was named the Toro GCSAWA Apprentice of the Year. All three winners will no doubt do the GCSAWA proud in Melbourne.

The GCSAWA Super Series has been very well supported by the trade this year with over a dozen sponsors keeping the tradition going. Greenline's **Andre van Schalkwyk** donated a fantastic walk-behind mower at Gosnells which was won by **Peter**



Beach. Mike Healy's Gosnells was looking fantastic for our first event and Neil Graham's Pinjarra was superb for our second event. Our Management Challenge will be on 15 May at Mount Lawley Golf Club (superintendent **Glenn Cross**).

On the job front, there has been a bit of movement in recent times. Phil Moylan has moved on from Melville Glades which left an opening for Pinjarra's Neil Graham to swoop in and accept the job. At Seaview Golf Club Owen Oberg has decided to call it quits and spend some time getting himself well again. We are all thinking of you Owey.

Finally on a personal note, I would like to thank Secret Harbour's Paul Needham for doing a fantastic job as GCSAWA secretary – he is one committee member who never stops.

DES RUSSELL
PRESIDENT, GCSAWA

Top left: Greenline GCSAWA Superintendent of the Year Award recipient Jon Carter

Middle: GCSAWA Environmental Award winner Peter Flemming (right) with McIntosh & Son representative Mike Foskett

Right: GCSAWA Graduate of the Year recipient Jeromy Malkin (left) with Toro Australia representative Geoff Stephens



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- Mark Jennings Superintendent Box Hill Golf Club

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