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COVFR

Manly Golf Club: The approach on the new-look 18th hole at Manly Golf Club in Sydney, home to 2013 AGCSA Excellence in Golf Course Management Award winner Michael Bradbery. Photo: Brett Robinson

Inset: The 16th stadium hole at TPC Scottsdale during the 2013 Waste Management Phoenix Open



COVER STORY: Manly's metamorphosis

For those who sat in on Michael Bradbery's presentation at the 2012 Australian Turfgrass Conference in Melbourne, it came as little surprise when a year later at the recent Sunshine Coast conference he was bestowed the AGCSA Excellence in Golf Course Management Award, presented in partnership with John Deere. The depth and breadth of Bradbery's involvement in the redevelopment of Manly Golf Club was nothing short of phenomenal and thanks to him and his crew's diligence and skill, the members now have an asset which is the envy of most other clubs in Sydney. ATM looks back at this mammoth project which had more than its fair share of challenges along the journey.

FEATURES 'The' graduate

In 1996 Jason Blacka became the inaugural AGCSA Graduate of the Year Award recipient. Some 17 years later the former Bermagui Country Club apprentice now finds himself in China working as construction superintendent on Tom Doak's first China design - Simapo Island Golf Club. Blacka looks back on a fascinating career to date and how the graduate award helped to open up his eyes to the wonderful world of turf management.



New era for Olympic Park Oval

The recent \$11 million redevelopment of Melbourne's Olympic Park Oval is the latest phase in the site's considerable history. As Adrian Black and Jeff Dowsing write, the new-look facility, which opened in April, is not only providing one of the AFL's elite clubs with a state-of-the-art playing surface, but also the Melbourne public with a brand new recreational asset.

Central Reserve puts Colac on footy map

Pitchcraft's Mathew Woolfe looks back at the \$750,000 redevelopment of Colac's premier recreational facility Central Reserve.

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Sanctuary Lakes superintendent Brett Hawkey looks back on his week volunteering at Merion Golf Club for the 113th US Open.

Sunshine success

The Australian Turfgrass Conference headed to the Sunshine Coast for the first time in its history in June with more than 320 delegates enjoying the superb





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Up and coming Victorian greenkeeper and Ohio State Program intern Simon Rees looks back on a career-building year which has seen him work at Congressional Country Club and TPC Scottsdale as each geared up to host PGA Tour events.





GRASS-ROOTS WITH JOHN NEYLAN Aging gracefully 40

In his latest ATM column John Neylan ponders what it takes to age gracefully

(from a turf playing surface perspective that is) and also looks at issues surrounding sports field construction and drainage.

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In the first of a two part article, University of Ballarat PhD student Phil Ford presents findings from his thesis which looks at ACL injuries incurred by footballers and the influence playing surface composition has on such injuries.

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Brendan Allen (NZGCSA); Adrian Black (Melbourne & Olympic Parks); Jason Blacka (Simapo Island GC, China); Michael Bradbery (Manly GC); Tom Breazeale Photography; Barry Bryant (SAGCSA); Chris Chapman (STA NSW); Michael Dodge (Getty Images); Jeff Dowsing (Melbourne & Olympic Parks); Phil Ford (University of Ballarat); Peter Frewin (AGCSA); Brett Hawkey (Sanctuary Lakes GC); Martyn Hedley (STA QLD); Steve Hewitt (VGCSA); Danny Hull (STA ACT); Peter Lonergan (GCSAQ); Jason Martin (Manly GC); Ian McKendry (STANZ); John Neylan (Neyturf); Andrew Peart (AGCSATech); Simon Rees (Sunningdale GC, UK); Richard Stephens (Turf Australia); Mathew Woolfe (Pitchcraft); Jenny Zadro (STA NSW).

The things supers do

olf course superintendents are well adept to taking on projects of significance. They are often the drivers, the leaders, the ones charged with crafting a vision into reality. They are also the ones turned to first when problems arise and it's their knowledge, skill and ability to think outside the square when confronted with a seemingly insurmountable hurdle that makes a superintendent so invaluable to their club.

In May I was fortunate to head to Hawaii for some R&R and reacquaint myself with the family. Eight days of sun, surf and cheap Coronas proved just the ticket, with the undoubted highlight a round Oahu trip in a limo. Our driver was a big, happy Hawaiian dude named Bobby, a scratch golfer who when not ferrying tourists about in his limo would take great delight in fleecing the hordes of Japanese golfers whom he took around the island on golf tours. As Bobby stated with a wicked grin, "Bobby always hits his first drive out of bounds..."

Along the way we stopped off at some of Oahu's lesser and better known courses – from the quaint Olomana Golf Club where after it rains, so Bobby informed us, you'd be lucky to find your ball on the fairway as the bullfrogs come out in their thousands, through to the high-end Waialae Country Club which hosts the PGA Tour's Sony Open every January.

As Bobby was negotiating his limo (a super-stretched 8.1 litre V8 Chevy Avalanche 2500 SUV – now that's a way to travel!) through the entrance to Waialae, he regaled us with a story of the 'W'-shaped palm trees on the course's 7th hole. As he explained, a few years back the club, acting upon the wild idea of an enthusiastic member who wanted a signature hole, realigned four palm trees beind the green to form a 'W' for 'Waialae'. Yeah right Bobby!

I need not have doubted the jovial giant. Sure enough later that evening I came across an article by US Golf Digest blogger Matt Ginella entitled 'The Who, What, When, Why (and how) of Waialae's "W" which recounts the fascinating story of how it came about. Not surprisingly, the man who made it all happen was none other than Waialae's superintendent.

As Ginella writes: "(Club member Ethan) Abbott had the vision, but he gives the credit to many others, including course superintendent Dave Nakama. Nakama was in charge of moving the trees, all of which came from on the property. He was careful to dig them out and replant them in such a way that they are tricked into believing they're growing straight. Nakama left two of the four original trees that were behind the green in place for nine months; they were used as supports until the new trees were strong enough to be on their own again." The things supers do!

One superintendent who could probably relate a little to that story is Manly Golf Club's Michael Bradbery, recipient of the 2013 AGCSA Excellence in Golf Course Management Award. While not having to deal with requests for palm trees in the shape of an "M", Bradbery certainly went above and beyond the call of duty during the club's recent lengthy course redevelopment. As I stated in this column last year, if you saw Bradbery's presentation at the Melbourne conference, you may have left feeling a tad inadequate such was the level of his commitment and involvement in all phases of the project and the many challenges faced.

Bradbery admits in this edition's lead story, which looks back on the redevelopment, that there were times when even he had his doubts about it succeeding, however, with the right team in place (and his considerable skill helping drive it, not that he'd admit that), it ultimately had a successful outcome. ATM congratulates Michael and the Manly Golf Club on receiving the AGCSA's longest standing and most sought after award and looks forward to seeing the course develop and mature as the years progress. Enjoy the read.





Brett Robinson, Editor



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Format changes popular at Sunshine Coast conference



hings have begun to settle down following a very successful 29th Australian Turfgrass Conference and Trade Exhibition at Twin Waters. Queensland certainly turned on the weather for all those that made the trip. The locals were complaining about the cold, but for those of us that hail from south of the border there were no complaints and it was nice to see some sun. While some may say it's a little indulgent, I would like to use this column to reflect on what was a great last week of June and highlight the importance of the event to the wider turf industry.

For those that attended there were some minor changes to the format this year. Most of these changes proved very popular with those in attendance, in particular the later start to the AGCSA Golf Championships which was again sponsored by Toro. New champion Michael Dennis (Royal Perth Golf Club) revelled in the late start, shooting a fine 4-under par 68 to win by four shots.

Another new initiative this year was the two Monday workshops which were partnered by Jacobsen. Many took the opportunity for the additional day's education and supported either the entertaining and informative Dr Thom Nikolai or Gary Lisbon who presented a photography workshop. The AGCSA is delighted to announced that Jacobsen has committed to partnering the Monday workshops again at the 30th Australian Turfgrass Conference and Trade Exhibition on the Gold Coast and discussions are now starting regarding suitable presenters.

To host a successful event there are many people to thank and first and foremost are the delegates. I appreciate that at times it can be difficult to get away from your workplace and for those who did I hope the trip was worth it and that the education and networking opportunities provided were valuable.

Special mention must also be made of the presenters, especially our fellow superintendent and turf management colleagues. Getting up in front of your peers can be extremely daunting, but listening to their experiences is extremely valuable.

A big thanks also goes to the trade companies that supported the event. We have received a great deal of correspondence from those that attended and to date it is all positive. These companies commit a great deal of money and resources to these events and need the support of the industry. Please keep this in mind when you are making purchasing decisions; without their support it would be difficult to keep up the quality of the event.

The new AGCSA Board (from left) Brett Balloch, Darren Wilson, Robin Doodson and president Peter Lonergan





The staff at Twin Waters deserve special mention too as nothing was too hard for them. While at any venue there will be issues, the ability of the staff to rectify any problem was first class. A huge thanks also to the Board of the AGCSA. The professionalism and commitment shown by these guys is incredible. They all devote a great deal of their time to not only this event but the association in general as well as holding down their 'real' jobs. At this year's Annual General Meeting we welcomed a new member to the AGCSA Board – Sanctuary Cove Golf & Country Club superintendent Robin Doodson – and we look forward to his contributions in the coming years.

And last, but by no means least, the AGCSA staff; they go about their tasks without fuss and make my job very easy. Not many see what goes on behind the scenes at this type of event and while at times things may go wrong, the staff handle these situations in their stride and are a great asset to the organisation and members.

As mentioned, planning for the 30th Australian Turfgrass Conference and Trade Exhibition (Gold Coast, 22-27 June, 2014) is now well underway. To assist this, a delegate and trade survey regarding this year's event has been circulated to all those who attended. Please take the time to complete and give some thought to the questions raised, in particular the questions relating to speakers and possible format changes. For our very supportive trade members, the trade exhibition launch for the 2014 event will take place on the Gold Coast on Wednesday 16 October, 2013. Further details on this event will be provided closer to the time.

Finally and while on the topic of the 2014 conference, it is with much disappointment that I have to advise that the event will not be receiving funding from Horticulture Australia Limited (HAL). The Australian Turfgrass Conference has for many years been the flagship event on the turf industry calendar and will continue to be so, generating great support from all sides of the industry. Given the strategic direction of Turf Australia, it would appear that this wonderful event, which provides a critical platform for the sharing of industry knowledge, research and best practice methods, no longer fits the criteria for funding.

The AGCSA is fortunate to receive some HAL funding for Australian Turfgrass Management Journal to assist in the publication of research and technical articles and I trust these comments do not jeopardise that funding. What I believe is of greater concern is that HAL funding for turf research in this country may well cease unless there is a direct financial benefit for turf producers; I am not sure if that is for the good of the wider turf community.

Please feel free to contact me on 0418 593 072 or peter@agcsa.com.au should you have any issue or suggestions. Feedback on the AGCSA's operations is always welcome. I look forward to catching up when our paths next cross.



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At the 29th Australian Turfgrass Conference on the Sunshine Coast, Manly Golf Club course superintendent Michael Bradbery was bestowed the 2013 AGCSA Excellence in Golf Course Management Award. Sponsored by John Deere, the award recognised Bradbery's significant achievement in overseeing the \$15.7 million redevelopment of the Sydney club between 2009 and 2012. ATM, together with Bradbery, looks back at this wideranging project which had more than its fair share of challenges along the way.

Manly's metamorphosis





2013 AGCSA Excellence in Golf Course Management Award winner
Michael Bradbery

nvestigation and communication. Ask 2013 AGCSA Excellence in Golf Course Management Award winner Michael Bradbery what the keys were to pulling off the recent redevelopment of Manly Golf Club, it was those two critical aspects above all else. To that you can probably add perseverance, especially considering it took nearly 14 years to finally come to fruition.

It's the sort of project that Bradbery will look back on in years to come with a huge sense of satisfaction (if he doesn't do so already) and on the mantelpiece to remind him of just what he and his team managed to achieve and the challenges they had to overcome will be the AGCSA's most sought after award.

If there is any project which embodies the essence of the AGCSA Excellence in Golf Course Management Award, then the Manly Golf Club redevelopment is it. What initially started out as a \$5 million reconstruction of Manly's playing surfaces and installation of a new irrigation system, morphed into a full blown \$15.7 million course redevelopment (see table above for the full extent of course works).

As well as profoundly changing the character and playability of the course, the unprecedented works have given Bradbery, his assistant Jason Martin and the experienced Manly maintenance crew a new course that can effectively drain after flooding and be efficiently maintained to a much higher standard. As Manly president Ken Munro stated in the club's 2011-2012 Annual Report, the "members can be assured that the course has been built to last" and that is in no small part due to the uncompromising and fastidious manner in which their course superintendent approached the task

By no means was it an easy road, however, and the challenges that continually cropped up are what makes the story the Manly Golf Club redevelopment so interesting. While getting to the stage of Master Plan approval in 2006 was a journey in itself, the ensuing years contending with strict regulatory requirements, site difficulties and some horrid weather, tested the mettle of all involved.

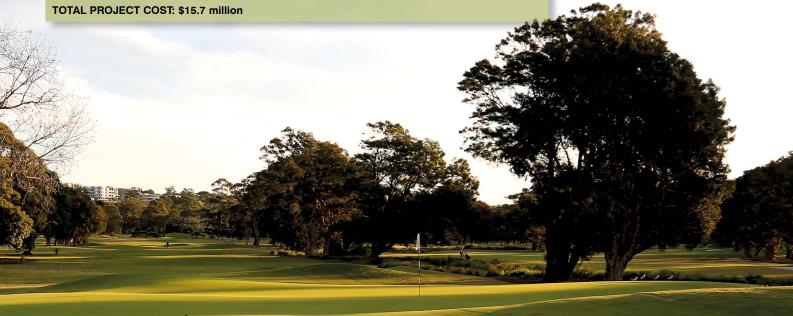
It was therefore a somewhat cathartic moment for all when on Friday 13 July, 2012, after two years

MANLY GOLF CLUB COURSE REDEVELOPMENT WORKS

- Reconstruction of all 18 holes, all greens to USGA specifications. Conversion of greens from Poa annua to A1 bentgrass, conversion of fairways and surrounds from kikuyu to Windsor Green couchgrass. Construction of two practice facilities;
- Conversion of 7.8ha of turf to native landscape and establishment of 3ha of new riparian zones;
 Planting of 250,000 native plants (63 different species), including forage species for local fauna;
- Creation of 7000m² of waterways/aquatic habitat. Planting of species from the endangered Swamp Oak Floodplain Forest Community;
- Re-routing of Burnt Bridge Creek and the building of a weir;
- Treatment, validation and re-use of 6000m³ of potential acid sulphate soils (PASS);
- Cut and fill of 60,000m³, most of which was double or triple handled;
- Construction of seven new bridges, a 50m lagoon boardwalk and 3.2km of concrete cart paths;
- Installation of a new electricity sub-station;
- Installation of two 500 kilolitre tanks, pump station and irrigation system;
- Construction of a lined 5M stormwater harvesting pond, installation of pump transfer station, bore water and stormwater treatment systems and a gross pollutant trap;
- Construction of a new 132-space car park;

The new-look and profoundly altered Manly Golf Club finally reopened on 13 July 2012.

Despite innumerable challenges in the lead-up to and during reconstruction, the club now has a course that can effectively drain after flooding and be efficiently maintained to a much higher standard. Pictured is the 1st/17th double green



and nine months of construction and more than 11 years of planning, the new-look Manly Golf Club reopened. In the words of Munro, "Time will tell, but I am confident the new course will see our return to the list of Australia's top courses after many years of absence."

IMPROVING EFFICIENCIES

When Michael Bradbery joined Manly as superintendent from Long Reef Golf Club in 1997, the course was in need of invigorating. The design was showing the signs of age while many of the inherent issues which came with being situated on a flood plain adjacent to Manly Lagoon were impinging upon maintenance and the performance of the playing surfaces.

Drainage has always been an issue at Manly and despite various attempts to modify and improve it over many years, the course remained extremely prone to damage. In fact, in the 14 years prior to the recent redevelopment, the course had been closed to some extent for 258 days, an average of nearly 18 days per year.

While drainage was the primary driver behind the redevelopment, there were other significant issues including:

- Insufficient water source or storage. The club long relied on a low-yielding (450 kilolitres per day) and increasingly saline bore augmented with town water;
- An irrigation system over 30 years old which only covered 50 per cent of fairways;
- Old push-up greens, many infested with couch, tees inadequately sized and built on building rubble. The club was spending as much as similar private clubs on maintenance while only occasionally being able to achieve similar presentation standards;
- Excessive number of trees impacting golf corridors, light penetration and turf quality; and
- Inefficient use of available land. Manly Golf Club is split in two – the North and South links. The old North links had six holes on 18ha, while the South had 12 holes on 18ha.

In late 1998 the Board agreed to begin the investigations required to develop a course Master



Manly's North links has undergone the most significant transformation, with the creation of more than 7000m² of waterways and 3ha of new riparian zones Plan. Engaging what was then Thomson, Wolveridge and Perrett, the club ended up working through no less than 10 concept plans before the final Master Plan was agreed to in August 2006. Due to the sensitive and high profile nature of the site, gaining approvals for such a major change of landscape required considerable investigation and negotiation and the timeframe from the decision to develop a Master Plan through to achieving final approval took the best part of 11 years.

The Development Application was finally lodged in October 2007 and approval received, with 101 conditions attached, in December 2008. Some of the concerns raised included flooding impacts of the development, potential acid sulphate soils, tree protection/removal, stormwater quality, contamination, the impact on Manly Lagoon, not to mention numerous community concerns. Further investigations and consultant reports to adhere to the conditions took around eight months with a construction certificate finally granted in October 2009

Manly's greens have been converted from *Poa* annua to A1 creeping bentgrass. The A1 was chosen primarily for its resistance to *Poa annua* invasion



The paperwork required for and from the various council departments, local authorities, consultants and contractors before a sod was even turned would be enough to fill this journal a hundred times over. Such is his new found level of expertise gained throughout this critical phase of the project, Bradbery could quite easily go out on his own as a consultant.

"It wasn't until we were a few years into the concept planning that we realised we had a number of issues confronting us," reflects Bradbery. "We couldn't bring in fill, which is when the creeks and waterways came into the equation. Then there was the difficulty of excavation due to groundwater and acid sulphate soils. The project just kept growing and growing and throwing up new hurdles.

"There were a number of times when consultants were saying that it was going to be too hard and plenty of members and committee members voiced similar opinions. I certainly had my own doubts sometimes, but we had the right people involved who were able to focus on the bigger picture and make sure we did the job properly without comprising the underlying construction parameters.

"As a superintendent you go into these sorts of projects with a little bit of knowledge about a lot of things and you quickly learn that you have got to pick up a lot more detail. There was a fair bit of planning and as part of that I did a heap of research and spoke to a lot of superintendents and other experts. Even if we had consultants working on parts of the project, I would do my own investigation and research to find out what I could so that I was comfortable within myself during each stage of the project."

CONSTRUCTION CHALLENGES

Prior to the start of the major reconstruction works, in early 2008 a new car park was built on the old 1st fairway and a new shortened par 3 1st (now the

11th) was built according to the Master Plan. This enabled major works to then begin in October 2009 which were split over three stages.

- Stage 1: North links eight new holes (2-9), including installation of two 500KL tanks in the maintenance compound;
- Stage 2a: Clubhouse practice facilities, new 1st and 10th holes and 17th green (1 and 17 is a double green).
- Stage 2b: Final seven holes (12-18), including stormwater harvesting pond.

During any construction project weather delays are inevitable but due to its low-lying position at the bottom of an 18km² catchment, Manly Golf Club was always going to be more vulnerable. True to form Mother Nature decided she would intervene to make what was an already challenging project even more difficult.

In the two years and nine months of construction between October 2009 and July 2012, Manly tolerated unseasonal weather conditions, with wet winters causing construction delays and cool summers inhibiting the grow-in of the new couchgrass fairways.

Annual rainfall for 2010-2012 was above average (2011 was 300mm above the norm), with 400mm-500mm recorded each winter. From January to July 2012, more than 1200mm fell with Burnt Bridge Creek, which flows through the South links, flooding on six separate occasions. By the end of



the project an estimated 25-30 weeks had been lost due to wet weather delays.

Due to the weather hold ups in 2010, the final areas of the North links stage had to be put on hold so that works could start on Stage 2a in order to get them completed prior to the peak season. Stage 2a started September 2010 and was completed by January 2011, with 10 new holes (1-10) fully opened by 6 May 2011. Stage 1 and 2a were completed by Flemming Golf, with Stage 2b (August 2011-July 2012) completed by McMahons.

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Wet weather would dog the redevelopment with Manly recording three years of above average rainfall

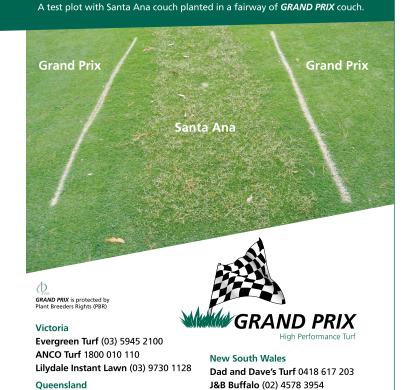
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The stormwater harvesting pond on the South links proved to be one of the most challenging aspects due to the site's groundwater limitations

"The weather delays really tested everyone and that was when communication became so critical, especially how you dealt with consultants and contractors," explains Bradbery. "Things got a bit touchy at times. There were times there when you were really jumping on people and pushing them hard and you had to be very mindful how far you could go."

Along with the weather there were plenty of other challenges for the project crew. As well as the discovery of potential acid sulphate soils (see breakout below) and contaminated fill, all excavations deeper than a metre required dewatering due to the shallow water table.

The stormwater harvesting pond on the South links proved to be one of the most challenging aspects of the redevelopment due to the site's groundwater limitations. As the pond sits in water-charged ground, there was the risk that the liner could potentially lift and fracture if the pond was pumped below the surrounding groundwater.

To ensure this didn't happen two methods of insurance were employed. One was to install sensors in the wet well and piezometer to stop the pump when the pond level reaches the level of the surrounding groundwater. The other method was required if the sensor failed to cut out the pump or if the pond needed to be emptied.

A drainage layer (Curtis Barrier SDV 2300) was therefore installed under the liner to carry any hydrostatic water to a valve arrangement in the base of the pond. When the pressure from under the liner exceeds that in the pond around the valve, the valve releases the pressure under the liner. To enable the groundwater under the liner to be lowered below these valves, a camlock fitting was included in the valve arrangement to allow a suction pump to be attached.

"One of the things I loved about the project was the ingenuity needed to come up with solutions when things weren't going to work out as per the engineer's designs," says Bradbery. "The stormwater harvesting pond was one of those where we had to modify many aspects of the design throughout the consultation process with the contractors and subcontractors to come up with something that would work."

PASS MARK FOR MANLY REDEVELOPMENT

cid sulphate soils are naturally occurring soils, sediments or organic substrates (e.g.: peat) that are formed under waterlogged conditions. These soils contain iron sulphide minerals or their oxidation products.

In an undisturbed state below the water table, acid sulphate soils are benign. However, if the soils are drained, excavated or exposed to air by a lowering of the water table, the sulphides react with oxygen to form sulphuric acid when re-wet. Release of this sulphuric acid from the soil in turn releases iron, aluminium and other heavy metals. Once mobilised, the acid and metals can create adverse impacts on plants and animals.

Potential acid sulphate soils (PASS) are those that have potential to become acid sulphate but have not yet been oxidised. All areas up to 5 metres above sea level around coastal areas can have PASS. With the majority of Manly Golf Club residing between 1-5m above sea level, geotechnical investigations identified PASS across both the North and South links . These soils varied from sands, silty sands, clays and peat. Identifying and isolating these soils was necessary during construction so they could be bunded and neutralised with lime.

Large bays for this were built by pushing up the topsoil into walls and removing any good soils down to the existing PASS layer. The base of the treatment area is then limed and the PASS spread in 200-300mm layers, treated with lime, mixed in, then tested to

validate. All treated PASS was kept at least 300mm below the finished surface. Areas of PASS left in situ but exposed to air during the excavation where also limed, such as the base of creeks and the pond before lining.

Liming the potential acid sulphate soils during the reconstruction of Manly Golf Club



AGRONOMICS

As Bradbery quips, he now finds himself in the second year of his apprenticeship at Manly Golf Club. Having dealt with kikuyu fairways and *Poa annua* greens most of his career, the switch to A1 bentgrass greens and Windsor Green couchgrass fairways has necessitated a whole new management skill set.

Trials to determine which bentgrass variety would be best suited at Manly began as far back as 2000 with A1 eventually chosen for its resistance to Poa invasion. Despite many issues with the existing kikuyu fairways, convincing members to convert to couchgrass took some time. In January 2007 half of the 17th fairway and surrounds where converted to couch and when its performance and greater efficiencies were highlighted, the members quickly bought into it.

Stolonising with Windsor Green took place at all times of year due to the duration and delays of the project. Quickest establishment was seven weeks to full cover (December-early February) with a first cut at 10mm. Stolons in this area were dropped on the surface as opposed to planting in furrows. Towards the end of the project in 2012, solid turf was used to grass holes 12, 16 and parts of 13, 14, 15 and 17 in order to meet the July opening date target.

"The switch from *Poa*/kikuyu to bent/couch has been all about improving efficiencies," explains Bradbery. "The old course was simply inefficient. With these new grasses we can be a lot more efficient in our maintenance operations and can maintain a higher standard of course presentation for longer periods, which was the big selling point to members. We are already seeing the differences with our maintenance practices and that will continue to improve.

"I certainly prefer the bent over *Poa*. Summer time in Sydney with *Poa* greens wasn't much fun. With the bentgrass there are a lot less inputs, you get a consistently smoother and faster surface more easily and more often. Managing the thatch in the new greens is a challenge, but we'll be making sure we get our renovation programmes in tune to this."

FINE-TUNING

While the bulk of the hard work has been done, by no means has Bradbery and his crew eased off in the 12 months since re-opening. At the same time as ensuring a high standard of greens and bunker presentation, the crew has also spent many hours on de-compaction, weed control and drainage.

Due to much of the reconstruction being carried out in wet conditions, compaction was inevitable, but it was the extent of the compaction that most surprised Bradbery. "We actually lost a substantial amount of material due to the silty nature of the soils and we ended up with less in the cut and fill calculations due to the levels of compaction," says Bradbery. "That has significantly affected our infiltration rates so we have been aerating and de-compacting across all fairways.

"We have also concentrated on subsurface drainage. During the project it was all about surface drainage and macro drainage (pipes and pits), but now that everything has settled we have been able to identify problem wet areas. We have already done a lot of work on the North links and have highlighted more priority areas to tackle this summer."

Weed control has been a work in progress, in particular keeping the once nurtured kikuyu out of the new stand of Windsor Green. Bradbery has been trialling different products and rates in order to come up with something that works, and is slowly but surely getting to the desired stand of pure, uniform couch.

"When we started out we were looking at using pre-emergents to control any problems, but after talking to a lot of guys who have done this sort of work before, they were saying that the pre-emergents held up the couch," explains Bradbery. "Being on a flood plain we needed to stabilise the surface as quick as possible so we stopped using pre-emergents and just used whatever grew to do that and then started about turning it back to pure couch. That's probably been the biggest focus at the moment and will continue to be over the next few seasons."



As Bradbery has been at pains to impress upon his team, the next couple of years will be critical in building on the solid foundations that the redevelopment has set in order to deliver a course that is on a par with, if not better than, its contemporaries in a highly competitive Sydney market.

And it would appear Manly is well on the way to achieving that. It has already hosted a number of major events to much acclaim, among them the 2013 Meriton Sydney Invitational Pro-Am in March. The level of acceptance and pride in the course among the members, who endured the project's ups and downs just as much as Bradbery, is also getting stronger as the course matures. The accolades too have started to come and the AGCSA Excellence in Golf Course Management Award may well be the tip of the iceberg.

"It's not something you seek out when you take on the job and I do feel a little bit self-conscious about (the award), but it is good to get the recognition for the club, the project and the work that went into it," says Bradbery.

"It was a journey of highs and lows, but to see the final result on the ground and get the level of positive feedback from members since opening has been extremely satisfying." ¹

Turfing the 14th green which formed part of the last stage of the project

The once kikuyu fairways of Manly have now been replaced by Windsor Green couch. Pictured is the 1st and 10th holes shortly after stolonising





The redevelopment also saw the construction of a 50m boardwalk across Manly Lagoon

MICK'S TIPS – GOLF COURSE RECONSTRUCTION 101

ichael Bradbery can rightly claim to be one of the most knowledgeable in his field when it comes to golf course reconstruction given the incredible involvement and the many hurdles faced during the recent Manly Golf Club redevelopment. What follows are some salient 'take home' pointers that Bradbery has compiled from his recent experiences for superintendent counterparts looking at embarking on a similar project.

THE BRIEF

A brief is vital for the club to review the requirement of design to ensure what they get from the architect suits their resources. The temptations to go for the 'wow' factor may lead to maintenance problems in the future. The superintendent must provide advice on the manageability of the design especially in relation to the resources available.

EARTHWORKS

Contractors will always have to carry out further earthworks then envisaged in the design or quantities. Provision for this in budgets is necessary.

DESIGN

If possible, have the architects design surface run through a 3D model to view design shapes and contours. This expertise is getting cheaper and can save tens of thousands of dollars in onsite changes. We did not have this facility and had to change several greens and bunker situations at a variation.

Understanding the level of slope on a greens plan design is very difficult. Try to compare to a current green contour plan for slope, pin positions and difficulty. If these issues can be sorted out in the committee room before construction, variations and or re-builds may be avoided.

SOILS AND TESTING

Carry out as much soil testing and assessment beforehand to determine quantities and quality of soil. We hand-bored all tees greens and fairways as deep as possible with manual augers to assess soils and locate poor material.

Carry out bulk densities of the various soil types across the site. Expose these current soils to the

wetting and compaction that will result through construction. Over large areas thousands of cubic metres can be lost, jeopardising completion to design. Allow to have excess soil in the cut and fill balance and where it can be used if remaining. We allowed for over 4000m³ excess on the last seven holes and ran short.

COSTS

Use your bill of quantities carefully to detail what will be paid for. This is more useful than the specification to enforce requirements with contractors. Obtain metre rates for any possible, even unlikely items of works that may come up. It is very difficult to negotiate rates part way through the project.

Try to come to agreement on the items of works you will find difficult to measure during the project (i.e.: measuring the amount of soils moved can be difficult without costly on site surveying). Measuring green sizes, bunkers, matting, pipe etc is easy. Lump sum the items you cannot easily quantify if possible. Use the as built survey to confirm quantities and locations of all assets.

CONSULTANTS AND CONTRACTORS

Civil engineers often over engineer things (e.g.: the treatment of PASS and other hard structures such as paths and bridges). Get input from applicable contractors.

Where possible, employ or enforce one main shaper that will oversee the implementation of the design to ensure the best result on the ground. A shaper is critical to a course redevelopment and they convert/interpret the design of the architect into the best on-site outcome and use of features. Avoid the changing of shapers and styles mid-project.

DRAINAGE

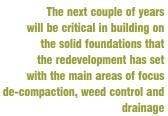
Ensure enough drainage infrastructure is installed to allow all areas of the course to eventually be ag-drained. Camera all drainage pipes to assess condition before the project if they are to be retained.

DOCUMENTATION

Minute ALL meetings – club, council, contractor etc. They will be useful if there are any discrepancies at the end of the project. Keep a construction diary each day and good photo record from predetermined positions (i.e.: before and after).

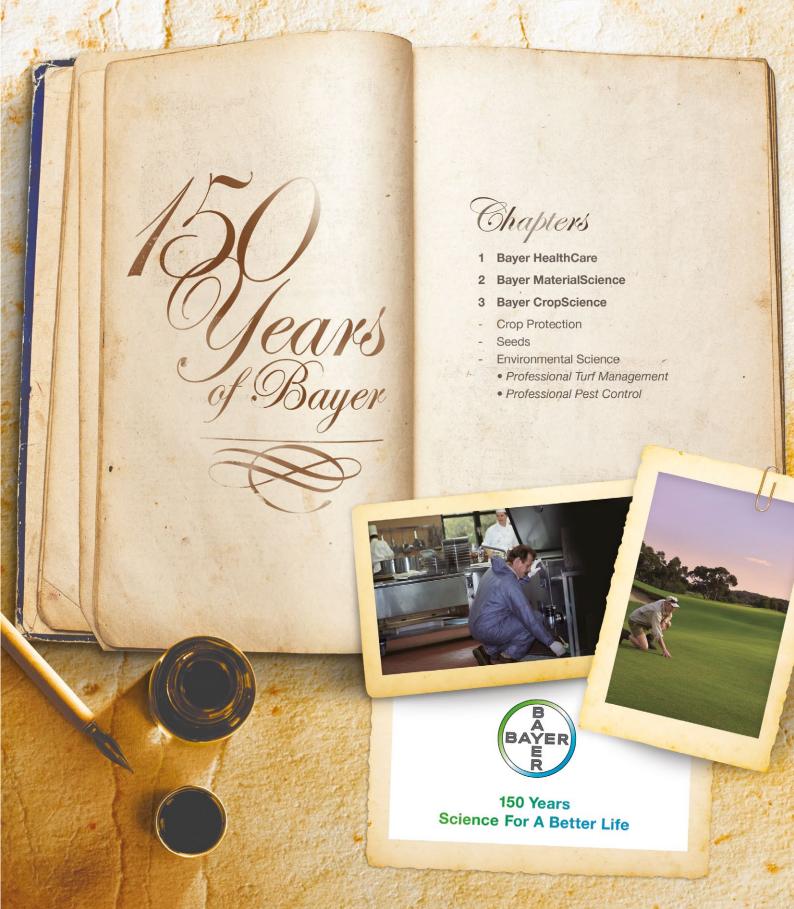
COMMUNICATION

While many disagreements and possibly arguments may take place with contractors, always maintain a respectful and positive attitude. Working through such a long and at times difficult project with many rain delays can be hard on morale of all involved. In the end you need to get the best out of the people you are dealing with which can only be achieved with respect, some flexibility and a team effort.











In 1996, Jason Blacka
became the inaugural
recipient of the AGCSA's
Graduate of the Year Award.
Some 17 years on and the
former Bermagui Country
Club apprentice has forged
an impressive career
working on courses in the
US and China designed by
the likes of Nicklaus, Player
and Doak.

decision to accept the apprentice

y decision to accept the apprentice greenkeeper position at Bermagui Country Club in January of 1993 was met with great consternation by my mother, Helen. Usually a trade apprenticeship in a small coastal town was viewed as a solid career stepping stone, but my mother had been the wife of a greenkeeper who in turn was the son of a golf course superintendent, so she was well aware of the commitment and sacrifice required to be successful in this role in a small town.

Early mornings, late evenings, weekends and public holidays were all fair game, while applying some pretty nasty pesticides was done so in an era when safety was nowhere near as entrenched in the industry as it is now. Walking down Bermagui's one-sided main street also took on a risk factor if one of the members had played poorly that Thursday.

All of these things (and the modest salary) had her believing her only son should pursue an alternate career path. As a teenager and young man I had often ignored my mother's advice and it always lead to trouble! But there is always an exception to every rule and this was it.

BORN GREEN

My grandfather, Clyde Blacka, was the long-term golf course superintendent at Bermagui Country Club and his son (my father, Graeme) maintained the club's bentgrass bowling greens, so it was pretty much predestined that I would end up in greenkeeping. From a young age I was always out helping dad on the bowling greens moving rinks on weekends and school holidays.

After graduating high school and a successful stint at The University of New England playing sport

and socialising, it came to my attention that I was in need of a career and an apprenticeship just so

and socialising, it came to my attention that I was in need of a career and an apprenticeship just so happened to become available in my home town of Bermagui.

Growing up in a small town instils in you a feeling of camaraderie, of belonging. Whether it is in the small classroom, on the sporting field or at the local watering hole, everyone knows everyone and the community is close.

The same can be said of the turf industry. We are a small community, tight knit and always willing to help out one another and share information. This intimacy has played a significant role in my career thus far and I am thankful for the relationships forged over the past 20 years.

Bermagui Country Club was a large complex with an 18-hole golf course designed by Cooper/Nagle, four clay tennis courts, two synthetic tennis courts, croquet lawn and two bentgrass bowling greens. There were never more than six or seven of us maintaining all of this and I was able to experience almost every aspect of the turf industry... granted much of it at a level that would soon be swallowed by progress.

We did things simply at Bermagui. Many things were done manually and this has benefitted me in future jobs as a wonderful platform to be able to visualise how to approach tasks from a practical direction.





The signature 10th hole at Hidden Tiger Golf Club in China, which for three-and-a-half years was home to Jason Blacka (far left), the inaugural winner of the AGCSA Graduate of the Year Award back in 1996

Blacka's first overseas posting was at the Scioto Country Club in Ohio. Pictured is the approach into 18



Three weeks of the month were spent at Bermagui followed by a condensed three-day period of education in the ACT. The Canberra Institute of Technology (CIT) was where the region's aspiring turf managers gathered to study at the Weston Creek Campus under the discerning eyes of Bruce Davies and Garry Dawson. The honour roll of AGCSA Graduate of the Year Award winners speaks volumes for what these two men have given to the industry in the ACT and surrounding regions.

After my time at CIT, in 1996 I was nominated for the NSWGCSA Graduate of the Year Award by Bruce and Garry, unbeknownst to me. Personally this was a huge honour as I had gained the respect of Bruce and Garry as well as the recognition from a strong graduating class.

The interview panel consisted of industry luminaries such as Rob Ashes (then course superintendent at The Australian Golf Club) and Gary Kelson (from then award sponsor Textron) and it seemed to go well. I was just happy to be in Sydney for the night (us country kids loved a trip to the big smoke!) and in my rush to meet my friends after the interview failed to notice that I had left my resume on the car roof before driving off into peak hour traffic on the Hume Highway.

Bermagui Country Club received two phone calls from Sydney that afternoon. The first informing them that their apprentice greenkeeper was the NSWGCSA Graduate of the Year and the next from a concerned citizen who found my documents strewn across the highway!

The building of relationships that would really further my career began in Melbourne at the Australian Turfgrass Conference that year. It was my first conference and as state representative vying for the inaugural AGCSA Graduate of the Year Award, the enormity of the situation was not lost on me.

I do not remember much from that week. I hope the speech I gave upon receiving the national

Far left and below: Hidden Tiger is blessed with a simply stunning location and opened as the 3rd Best New Course in China (2010) according to Golf Digest. Pictured below is the par four 14th and far left the par five 13th



graduate award reflected my honour at winning the award. It was from the heart and all the memories of a childhood spent at the club and my father and grandfather were very poignant. Local media awaited me upon my return to Bermagui as it was a rare occasion for the town to have one of its citizens recognised at a national level. It was a very proud moment for my family.

OPENING DOORS

The prize for the AGCSA Graduate of the Year was a trip to the USA to attend the Jacobsen Future Turf Manager's Seminar. What a privilege! That trip was the catalyst for my later decision to pursue a career overseas. The time spent on this trip meeting fellow students, touring factories and great golf courses opened my eyes to the global possibilities that a career in turf had to offer.

Sydney and Australia has many wonderful golf courses but the turnover at the top was rare. Names in Sydney like Rob Ashes, John Odell, Gary

Dempsey, Mark Parker and many others were well known because of their work and longevity. The opportunity to reach this 'stratosphere' seemed difficult to achieve.

In 1996 I volunteered as an AGCSA Course Quality Official at the Australian Open held at The Australian GC. It was there I again met up with Rob Ashes and we drove the course after play as evening preparations were underway. The systematic conditioning and teamwork was so impressive. Little did I know I would be back here in a few years' time on the payroll!

Upon the completion of my apprenticeship I began to get itchy feet and after one more year at Bermagui I made the move to The Australian Golf Club as the second assistant serving under Rob. I arrived a few weeks before the 1998 Greg Norman Holden International and was on the triplex mowing approaches in the afternoon and on bunker preparation in the mornings.

The level of conditioning we extended to the

NEW HORIZONS LOOM FOR 2013 GRADUATE AWARD WINNERS

or Jason Blacka, the AGCSA Graduate of the Year Award opened up a world of possibilities when he was named inaugural winner at the Australian Turfgrass Conference in Melbourne back in 1996. Luke Jorgensen and Andrew Spicer will be hoping for similar things after they were named the respective 2013 Toro AGCSA and Sports Turf Graduate of the Year recipients at the 29th Australian Turfgrass Conference held in late June on the Sunshine Coast.

Twenty-three year-old Jorgensen continued Canberra Institute of Technology's (CIT) impressive run at the national awards by winning the AGCSA award. It is the fifth time a CIT graduate has collected the award and Jorgensen joins the likes of past winners Wade Williams (2009), Glenn Dawson (2002), Stephen Heskett (1999) and Blacka (1996).

Jorgensen's win is also yet another feather in the cap for Federal Golf Club where he started his apprenticeship under previous superintendent Stephen Lording back in 2009. The Canberra-based club can now lay claim to having produced four AGCSA Graduate of the Year Award winners since 1999 – Jorgensen, Williams, Dawson and Heskett.

In what was one of the strongest graduate fields for a number of years, including for the first time a representative from Tasmania, Jorgensen narrowly beat home fellow finalists Charles Dunlop (NSWGCSA, Duntryleague Golf Club), Jacob Freeman (GCSAQ, McLeod Country Golf Club), Matthew Gates (SAGCSA, West Lakes Golf Club), Jarryd Graham (VGCSA, Kew Golf Club) and Andrew Schindler (TGCSA, Riverside Golf Club).

Just prior to being named the AGCSA Graduate of the Year, Jorgensen shifted from Federal (where he completed his apprenticeship under superintendent Mark Thompson) across to Royal Canberra Golf Club and the new challenges of working on an all cool-season grass course. As well as settling into this new role he is





also continuing his education through the Diploma in Sports Turf Management.

In winning the national award, Jorgensen, like those graduates before him, will now embark on the trip of a lifetime courtesy of award sponsor Toro. Jorgensen will attend the Winter School of Turf Management at the University of Massachusetts and visit the Golf Industry Show in Orlando, Florida.

SPICER STEPS UP

While Jorgensen joined a long list of previous CIT graduates to win the AGCSA award, Wyong Shire Council's Andrew Spicer became the first STA NSW representative to collect the STA Sports Turf Graduate of the Year Award.

After going the way of representatives from Victoria and Western Australia since the award was first struck in 2011, 21-year-old Spicer beat the challenges of STA QLD's Ryan Tracey (Landscape Solutions) and STA VIC's Christopher Deppeler (Greener Pastures).

Spicer has worked with Wyong Shire Council since 2010 and has worked on just about every oval and sports facility within the shire including AFL, rugby league, soccer and cricket. His work involves looking after the fields and their surrounds as well as some building maintenance. He studied at Kurri Kurri TAFE and achieved excellent results and enjoyed the experience of working on different surfaces.

In a change from previous years, Spicer will now get the opportunity to attend the Toro Australia Sports Field and Grounds Forum to be held in November and will also head the US in June 2014 for the Toro US

Sports Field and Grounds Forum which will also include

a number of visits to various stadia. In addition to this, the STA NSW is hoping to organise for Spicer to undertake some work experience at Sydney's ANZ Stadium, hopefully during NRL Grand Final week in early October.



Hidden Tiger is a spectacular Gary Player design. Pictured is the par three 12th

bunkers was astonishing for me. In the weeks prior to the event we spent numerous hours in the sand reshaping slopes, hand watering and plate compacting bases. During the tournament proper we merely 'brushed' the bases with a stiff bristled broom and so firm were the bases that no footprints were left – a big difference from the Friday afternoon bunker preparations at Bermagui!

The Australian was a great learning curve. The size of the operation and the attention to detail was like I had not experienced on a daily basis before. Tee times with a who's who of Sydney also made each day at 'The Aussie' very interesting.

Several months into my time there I was finally given control of the course for a Sunday preparation. To be met with vandalism on several greens (someone had used a shovel to dig in and flip over dinner plate sized chunks of turf) was like living a waking nightmare. Some frantic calls to Rob and with his guidance we prepared the course and did some hasty repairs to beat the first group.

Later that week I was knitting in some of the edges of the vandalism with a pitch mark repairer when one of the golfers behind me commented, "Pretty nasty stuff that". The fact that it was Richie Benaud in that same dry tone we had grown up with during the cricketing summers remains one of my most vivid memories of my 12 months at The Aussie.

OVERSEAS BOUND

At the time The Australian was a participant in the Ohio State University Intern Program and during my time on the crew I worked alongside Kris 'KD' Davis and Bob Becker, both young interns from Ohio. I admired their decision to venture overseas to further their careers and we became firm friends. I would eventually move on from The Aussie to become superintendent at Castlecove Country Club and then on to Craigieburn Resort in Bowral.

In 2001 I made the big decision to leave Australia and headed to Scioto Country Club in Ohio, to work with Bob (then the assistant superintendent) under long-serving superintendent Mark Yoder.

Scioto is a club that flies under the radar, yet it has an amazing history. Designed by Donald Ross, Scioto opened in 1916 and has held the US Open (1926, won by Bobby Jones), Ryder Cup (1931), the PGA Championship (1950), US Amateur (1968) and the US Senior Open in 1986. It is scheduled to host the 2016 US Senior Open to mark the club's centenary. The Golden Bear Jack Nicklaus also honed his formidable skills as a junior at the course under the tuition of legendary teaching professional Jack Grout.

The conditioning of the cool-season Scioto course was another step up from anything I had experienced before and the organisation and teamwork under Bob was exemplary. It was during this time that I became a Buckeye fan, attending every home game at 'The 'Shoe' that year and even making the trek north to the 'Big House' to watch

Flood damage sustained at Cimarron Hills in Austin, Texas which was Blacka's home for eight years, including three as superintendent, before making the move to China





Among many challenges getting the Hidden Tiger course open, a fire gutted the entire maintenance compound. Blacka had to make a hasty second storey escape from his apartment above the facility



The Ohio State Buckeyes school the Michigan Wolverines! Any sports-loving fan that has spent time in the USA cannot help but marvel at college sports and the fervour it inspires.

With the Ohio winter setting in, the wearing of shorts was becoming difficult so I headed south to Austin, Texas, which would become my home for the next eight years. Kris 'KD' Davis had just received his first superintendent appointment as the growin superintendent at the Jack Nicklaus-designed Cimarron Hills Golf and Country Club, a magical property on 1000 acres with lovely old oak trees and meandering streams.

I worked my way quickly up to the first assistant position there and we opened the course in April of 2003 and watched it progress to be one of the elite courses in the state. KD, much like my first boss Carl Wangemann, really enjoyed his work and the long days dragging hose in the blistering Texas heat seemed to fly by.

Rising as high as No.13 in Texas, Cimarron became my first overseas superintendent posting when KD moved on in 2005 (he is now superintendent at Southern Hills in Tulsa, Oklahoma). I found Texas

to be a great place to live, very similar to country NSW. Austin, in particular, was a wonderful city – great music scene and home to a vibrant University of Texas student population. Add to that being the state capital and only Democratic seat in the Republic of Texas and you can understand the popular bumper sticker, 'Keep Austin Weird'. I tried my best!

Living in America is very similar to Australia. Americans love us and find our accent particularly attractive. Once you get used to saying 'gas' instead of 'petrol' and throw in some Texas 'y'alls' and 'fixin' tos', it really felt like home. But after four years the feet began to itch again and despite a successful tenure at Cimarron, including the Central Texas GCSA Superintendent of the Year Award in 2008, I had again hit my ceiling.

HEADING EAST

That next step was proving difficult to attain so I made the big call and purchased a one-way ticket to the People's Republic of China, arriving at the amazingly beautiful Huangshan region of Anhui province and the Gary Player-designed Hidden Tiger Golf Club.

China is everything and more you had heard, thought you knew and could never imagine. I landed in an area where there were just three foreigners in town (all working at Hidden Tiger), the nearest McDonalds was two hours away and where walking down the local street could result in a chorus of 'hellos', uncomfortable stares or crying babies! It is a magical, mystical and mortifying place. I really do like it here.

Golf in China is as enigmatic as the nation itself. Even the basic tenet of legality has yet to be confirmed for the majority of the nation's courses. Most of them are struggling financially and cater only to the wealthy elite, yet as a new sport (and with the sometimes dubious relationship of big business

You know you've got drainage issues when you turn up to work to find locals fishing in your driving range (Hidden Tiger)



and government propelling development) golf has a boundless future here.

China is a physically beautiful country and Hidden Tiger is blessed with a simply stunning location. These sites are rare in the developed golfing world and it is this which allows for China, and other developing golf nations, to build some truly jaw-dropping golf courses.

Arriving as the grow-in superintendent, it was obvious that local construction methods were a little different from the teachings of Bruce and Garry at CIT. I soon inherited the project manager position and in October of 2010 we officially opened.

This proved to be quite a feat considering we survived floods of biblical proportions, landslides, knife-wielding enraged locals, workshop fires (including a two-knotted-bed-sheet-tied-to-window-frame escape at 4am from my second storey apartment adjacent to the workshop) and the relentless attempts by local contractors to sabotage the project in search of greater profit margins. There were so many corners cut that I am surprised we did not build a circle!

I spoke at the Golf Industry Retreat in Philadelphia in 2010 regarding my experiences in China and after much deliberation decided to simply show a slideshow. Trying to capture all the emotions and amazing sights on paper cannot do it justice. China is that kind of place.

Hidden Tiger opened as the 3rd Best New



Course in the country according to Golf Digest and the club will be a perpetual recipient of 'best of' awards for a long time. I really appreciated the opportunity to work in such a remote location. The friendships forged with the local farmers and fishermen who became my staff were a highlight. To be able to impart my knowledge and experience to people who had never even seen a foreigner, let alone a golf course, and see their standard of living improve through their employment at the club was just so rewarding.

Spreading fertiliser by hand during the grow-in at Hidden Tiger

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Blacka's 'machete crew' (top) at Hidden Tiger. One of the great aspects of working in China has been the friendships Blacka has forged with local farmers and fishermen who became members of his golf course staff

A Chinese government delegation makes an understated arrival at Hidden Tiger After three and a half years, things ran their course at Hidden Tiger and I was on the lookout for a new position. I was told many times that things can change quickly in Asia. I took that advice well. It took almost six months to find my next job! One of the obvious perks of the expat position is the favourable package so I was able to enjoy living in Asia comfortably for an extended period before starting my current position.

Simapo Island Golf Club in the provincial capital of Haikou, Hainan is home now. I have stumbled into Tom Doak's first China design, working for the well-respected Chris Ch'ng on a totally unique golf course project.

We sit within the city, on an island in the province's major tributary, the Nandu River. Our owners have a distinct vision regarding course conditioning and environmental awareness and with Chris' vast experience and utilisation of the best in the business – Tom Doak, Ron Carlyle (agronomic consultant, Taiwan), David Bedingfeld (irrigation, Australia), Pinnacle Landscape (USA), Peter Morison (Textron), SubAir, Watertronics, Toro Irrigation, Jacobsen, Atlas Turf... the list goes on – we will create something distinctive for golf in

China. Unfortunately I can't divulge too much on the project, but stay tuned to this space.

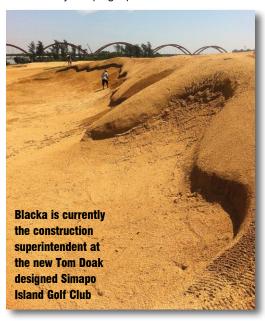
EXPERIENCES OF A LIFETIME

Many Australian's have forged long and successful careers in the golf business in Asia. Laurie Walsh, Chris Gray, Danny Potter, Darren Moseley, Nigel Taylor, Ross Grieve and Rob Weiks are among many that I have come to know and respect for their enduring careers in the Orient. It is a difficult place to work. It is a difficult place to live. And so far for me a very difficult place to leave.

In 1996, the AGCSA Graduate of the Year Award opened the door for my career to expand from Bermagui to Sydney and beyond. Without it I may very well still be in my hometown living a very different existence. I would encourage all current turf students to strive for the highest possible achievement and to consider the opportunities that programmes such as The Ohio Program offer.

Sorry I ignored your advice Mum. I will see you for the family camping trip in November! \slash





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Since 2003, the Melbourne and Olympic Parks precinct has undergone significant transformation. With the refurbishment of Gosch's Paddock and construction of AAMI Park complete, the latest component has seen the redevelopment of the famed Olympic Park Oval. As Adrian Black and Jeff Dowsing write, the \$11 million project, opened this April, has not only provided Collingwood Football Club with an elite level training facility, but the wider Melbourne public a major recreational

asset.

New era for Park estled between the Yarra River and Melbourne Park, Olympic Park has facilitated Melburnians' recreational pursuits since the

city's foundation, not to mention a cavalcade of champions across several sports.

During the 1860s, the Olympic Park area became known as the Friendly Society's Gardens and was used for athletic carnivals, social occasions and community events. When the area was proclaimed Crown land by the State Government in 1909, the newly formed Committee of Management declared the 25 acres of land was a "site for the recreation convenience and amusement of people and as a children's playground".

Either side of the century's turn, football, rugby, women's cricket and tennis featured on the Olympic Park Oval site's rudimentary field and two double courts. Athletics was also a regular, however, little was done to improve facilities until the Olympic Games transformation commenced in 1951. The new sports arena, known as Olympic Park Stadium, was constructed for track and field meetings (including pre-Olympic training) and for the preliminary rounds of the Olympic soccer competition.

The most famous sporting moment at Olympic Park Stadium actually occurred just prior to the Games at the 1956 Australian Mile Championship. Champion runner John Landy stopped mid-race to help fallen compatriot Ron Clarke to his feet before sprinting away to claim the title. A statue overlooking Olympic Park Oval is a permanent reminder of what witness Reverend Alan Moves described as "the most incredibly stupid, beautiful, foolish, gentlemanly act" he had ever seen.

During the 1960s Olympic Park attracted up to 900,000 people annually for athletics and soccer. As the only FIFA-recognised soccer stadium in Australia, Olympic Park (also known as the Western Sportsground or No. 1 Oval) hosted a number of international football matches. In total, Australia

played 34 internationals (including six World Cup Qualifiers) at Olympic Park for 11 wins, 11 draws and 12 losses.

Teams such as Chelsea, Everton and other top European teams also played Australia at Olympic Park. One of the best attended games was held in 1964 when Victoria's champion club Slavia defeated a team of VFL players 8-0, which included the likes of Ron Barassi and Des Tuddenham.

Surprisingly, though, the highest attendance at Olympic Park was achieved in 1987 when over 40,000 attended a Michael Jackson concert. In 1990 it also hosted Melbourne's first ever State of Origin league game match between Queensland and NSW. Temporary seating at each end enabled 25,800 to see the 29th Origin clash, won by NSW 12-6 with Ricky Stuart named man of the match.

The loss of the adjacent Eastern Sportsground due to the Burnley Tunnel/CityLink project in the late 1990s stymied a desire to relocate athletics and upgrade Olympic Park Stadium. The proposed 40,000 seat covered rectangular pitch stadium dedicated to football and the rugby codes would have catered for their growth potential in the style of AAMI Park.

Nonetheless, the stadium served as Melbourne Storm's home ground from 1998-2009 (known as 'The Graveyard' for opposition clubs). AAMI Park, Olympic Park was also A-League club Melbourne Victory's initial home.

MASTER PLAN

The first stage of the Melbourne & Olympic Parks Master Plan was the construction of the adjacent Edwin Flack Oval in May 2003 to accommodate



Collingwood Football Club and Melbourne Storm's training.

In 2006 the second stage commenced with the refurbishment of the enclosed oval at nearby Gosch's Paddock. This enabled Melbourne & Olympic Parks (M&OP) to relocate Collingwood while the Edwin Flack Oval made way for AAMI Park which would open in May 2010. At this time the remaining Gosch's Paddock land was transferred from Melbourne City Council to M&OP, enabling another enhancement to accommodate training requirements for Melbourne Storm, Melbourne Victory and the Melbourne Football Club.

As the pre-eminent venue for athletics in Australia and the track where many thousands of school children competed in athletic carnivals over half a century, Olympic Park's closure in 2011 was met with a degree of sadness. Unfortunately, the venue was considerably dated and the replacement Lakeside Stadium at Albert Park was the world class facility the sport and elite athletes required.

Over the past 10 years M&OP had overseen several significant venue constructions, the outcome being a tightly developed sport and entertainment precinct. The deconstruction of Olympic Park Stadium also presented the opportunity to restore valuable green recreational space for the general public, as well as honouring an agreement to provide major tenant Collingwood a training oval close to its headquarters at the adjacent Westpac Centre. Melbourne Football Club also benefited in relocating to Collingwood's dedicated training ground at Gosch's Paddock, as well as reducing the load and freeing up the other field for Storm and Victory.

DEMOLITION

Planning for the redevelopment of Olympic Park started early 2011 with Watpac Civil awarded the redevelopment contract. First on site, however, was The Delta Group, contracted to undertake the demolition works from October 2011. It was a complex job owing to the nature of the site and works included:

 The removal of the existing rubberised running track which had to be scraped off the asphalt under the surface and transported to a recycling depot;

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- Demolition and removal of existing stands and terraces: and
- Demolition and removal of four large light towers

Demolition works were suspended for three weeks in January 2012 due to the Australian Open tennis Grand Slam across the road at Melbourne Park. Delta were nearly finished by the end of February, however, a section of the Western Grandstand had to remain until an existing power kiosk was relocated by CitiPower contractors. In addition, the south east corner light tower could not be demolished due to the mobile phone transmitters which had to be relocated. Delta returned in December 2012 to remove the last section of grandstand and completed the demolition of the remaining tower.

CIVIL WORKS

The original brief called for a flat, Melbourne Cricket Ground sized field with a two-lane running track around the perimeter. However, soil investigation reports received prior to and during the demolition works indicated the existing soil in the surrounding terraces was contaminated.

About 9000 cubic meters of soil was removed from site and in order to retain the remainder the original specification was changed from a flat surface to a 1 per cent dome design to consume the excess fill. Included in the geotechnical report was a recommendation to cover the soil with a geotextile material to indicate its presence in the subgrade.

Watpac started the civil redesign of the subgrade works in March 2012 and proceeded to move the large stockpiles of soil from the terrace areas, placing this in layers across the playing surface to create the subgrade. A large sheepsfoot roller was used to compact the layers and remove any voids.

Works progressed well until Melbourne's fickle weather turned in May and rain delays became frequent. A decision was made to incorporate lime into the profile to help stabilise the surface and stiffen any soft spots which were preventing the subgrade meeting the required compaction levels. The stabilisation works carried out by Stabilime proved to be very beneficial, enabling the final levelling and trimming works to be completed by the end of September.

Officially opened on 11 April 2013, Olympic Park's AFL training ground and public sport and recreation space is the latest phase in the site's considerable history





The new-look Olympic Park oval resides adjacent to AAMI Park which was opened in 2010. The new ground will be used by Collingwood Football Club as its principal training venue

Other aspects of the ground redevelopment included:

- Barrier nets and goal posts: The Pila Group installed 15 metre high barrier nets at both ends of the field to prevent stray footballs entering bordering major roadways. Hinged-based rugby and AFL football sleeves were installed in the subgrade by Abel Sports.
- Running track: The \$11m oval redevelopment by M&OP includes a two-lane rubberised track forming the outer ring of the oval. Installed by WM Loud, the track facilitates Collingwood's running drills and the general public's use when the Magpies aren't training.
- Weather station: The Bureau of Meteorology approached M&OP about relocating its existing Melbourne weather station in La Trobe St to the south east corner of the Olympic Park redevelopment. An agreement was reached and the original landscape design for this area was de-scoped to allow for the weather station's installation.

Below: Construction of Olympic Park Stadium in 1955

Below right: As the only FIFArecognised soccer stadium in Australia at the time, Olympic Park hosted a number of international football matches including six Australian World Cup qualifiers, including against Iran in 1977

TURF & IRRIGATION WORKS

Evergreen Turf was appointed leading contractor for all works associated with the construction and design of the playing surface on a formed subgrade.





IRRIGATION SYSTEM

The design brief called for the installation of an irrigation system with stringent performance criteria including the following;

- Individual time control on every sprinkler via a decoder system;
- A minimum application rate of 12mm in an eight hour period of operation;
- Remote zone moisture monitoring;
- Flexible scheduling to accommodate all pitch uses; and
- Highest application uniformity possible.

The irrigation system mains and laterals were installed into the sub-base and backfilled with sand. Century Rain completed the oval works with accuracy and precision. Articulated risers were installed, flushed and fixed to ensure the system was operational once the sand was installed to avoid erosion of sand through summer winds and for general consolidation.

Rain Bird heads and controller were selected for this project and provisions were made for future connection to the existing site control system at AAMI Park. Artesian Irrigation carried out the installation of the Rain Bird RB 5004 pop up sprays on the surrounding embankments and installed drip irrigation in the surrounds areas of the Bureau of Meteorology weather station compound and garden beds

DRAINAGE AND PROFILE

As mentioned earlier, because the subgrade was deemed to be contaminated, geofabric cloth was laid over the entire base of the oval and the surrounding terraces and pegged down with large galvanised nails.

The first stage of the oval drainage works was the installation of the perimeter collector drain which was hooked into concrete pits that connected into the main drainage system. A flat cell drainage system was designed to avoid trenching into a contaminated subgrade.

The design was based on a spider web formation incorporating 100mm laterals at six metre spacings hooking into 300mm flat cell collector drains. These collectors were then hooked into the perimeter drain using specialised fittings. This flat cell drainage system was surveyed and marked out before being installed manually. Similar systems have been widely used in the golf course industry and have proven to be a cost effective alternative to the conventional drainage systems while still delivering the required drainage capabilities.

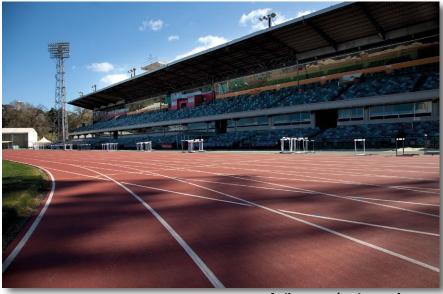
The gravel and sand was selected in accordance to USGA specifications. It was batched and tested to ensure conformity and was delivered to the site at approximately 800 tonnes per day. Gravel depth was installed at 100mm. Sand depth was installed at 300mm and was amended with the required amount of peat moss for moisture retention.

In addition, amendments were incorporated into the sand profile to increase the CEC levels and assist with the nutrient holding ability of the sand. Evergreen Turf engaged SJM Turf and Civil to spread and consolidate the amended profile and laser level to meet the design criteria.

TURF

The turf selected for the oval was Legend couchgrass and was supplied by Turf the Lot based in Dubbo, NSW. The entire playing surface of approximately 20,000m² was laid in maxi rolls of 1.2 metres wide x 18 metres long.

Harvesting the washed turf in Dubbo where the temperatures reached in excess of 43 degrees Celsius proved to be challenging due to the heat



stress in the turf rolls. Initially there were turf losses of several thousand metres, however, some adjustments to the time the turf was harvested and reducing the metres installed per day corrected this problem. Turf installation started in late December 2012 and finished in mid-February 2013.

Santa Ana couch was installed onto a sandy loam base on the surrounding terraces and rolled in with a heavy roller two weeks after installation.

TURF MAINTENANCE

The MOPT horticulture team was handed the newly turfed oval in early March 2013 with the aim of getting it ready for Collingwood by the start of May. The MOPT programme included the following:

- Establishment of the Legend couch;
- Overseeding of the surface with SR4200, SR4600 and All Star 3 fine leaf ryegrass varieties;
- Topdressing of the couch surface with two applications of the Rocla medium washed sand (1 x 80m³ and 1 x 50m³);
- Preventative fungicide applications;

As the pre-eminent venue for athletics in Australia, Olympic Park's closure in 2011 to facilitate the impending redevelopment was met with a degree of sadness



The demolition of the Olympic
Park venue and subsequent
reconstruction is the final phase in
the redevelopment of the southern
side of the precinct on Olympic
Boulevard





Some 20,000m² of Legend couchgrass, sourced from Turf the Lot in Dubbo, NSW, was laid in maxi rolls of 1.2m wide x 18m long

- Soil tests and root health assessments;
- Complete line marking of the field; and
- Installation of goal post and rugby post turf inserts.

GRAND OPENING

Officially opened on 11 April 2013, Olympic Park's AFL training ground and public sport and recreation space is the latest phase in the precinct's considerable history.

Chairman of the Melbourne & Olympic Parks Trust Russell Caplan spoke of Olympic Park's unique and diverse sporting heritage and the context in which the redevelopment will benefit the Victorian public.

"The redevelopment provides an additional green space, accessible to members of the community, sporting groups and schools," he said. "It is also important to note the redevelopment has been carefully planned to ensure the Olympic heritage of this oval is maintained and honoured, including the relocation of the famous John Landy-Ron Clarke statue to the site where the iconic act of sportsmanship occurred."

Sand depth was installed at 300mm and was amended with the required amount of peat moss for moisture retention





A large sheepsfoot roller was used to compact the subgrade layers and remove any voids



A decision was made to incorporate lime into the profile to help stabilise the subgrade and stiffen up any soft spots



A flat cell drainage system was designed to avoid trenching into the contaminated subgrade

Collingwood president Eddie McGuire was effusive in his praise for the precinct: "We have enormous respect for the history and heritage of this famous site and we look forward to working closely with the State Government and Melbourne & Olympic Parks Trust to ensure that this oval is available – not just for Collingwood – but also for greater community engagement."

Also planned as part of Collingwood's new facility is a health and wellness centre and public change facilities (for users of the Botanical Gardens' Tan Track). Construction is scheduled to start in October 2013.

The demolition of the Olympic Park venue and subsequent reconstruction is the final phase in the redevelopment of the southern side of the precinct on Olympic Boulevard. While there is no "children's playground" as such, Olympic Park Oval continues to honour a century-old resolution to provide for the Melbourne community's recreational needs. \checkmark





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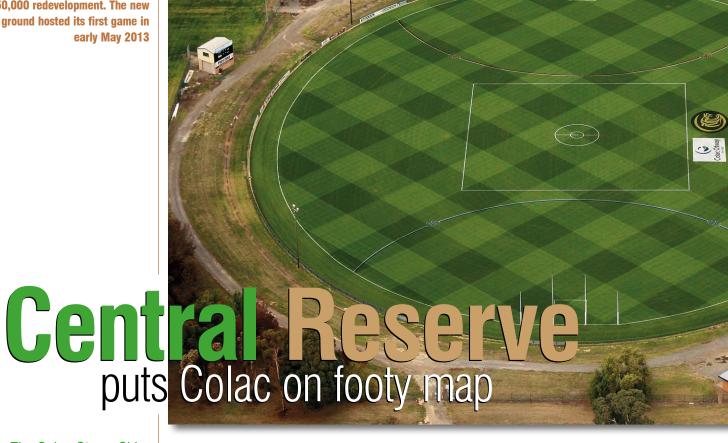








The new-look Central Reserve oval in Colac, Victoria after its recent \$750,000 redevelopment. The new ground hosted its first game in early May 2013



The Colac Otway Shire recently undertook a \$750,000 redevelopment of the playing surface at Central Reserve in Colac with the aim of attracting AFL practice matches, VFL games and TAC Cup matches. Pitchcraft's Mathew Woolfe looks back at what was a rewarding project which has given the regional Victorian town an elite level community

entral Reserve is located in the regional Victorian township of Colac, about 150 kilometres south-west of Melbourne. First opened on 21 April 1962, the community oval resides on a low-lying site and is the township's premier recreational facility.

In 1984, the local council and community undertook basic remedial works to the oval which included the importation of topsoil, installation of an irrigation system and addition of a turf wicket block. The installation of the irrigation system unfortunately impacted on the original drainage system and the quality of the imported topsoil was poor.

Over the past decade the turf wicket failed to perform to a reasonable standard for cricket in the summer and had a detrimental impact on football in the winter. There were continual difficulties with preparing the wicket following the football season in such a high rainfall area (Colac's annual rainfall is around 730mm).

Central Reserve is home to the Colac Football Netball Club which participates in the Geelong Football League, considered one of the highest quality leagues in Victoria. The oval also hosts the Colac and District Football League finals annually. In addition, the oval is used by the local little athletics club, school football, Auskick and other community events. Cricket used the facility up until 2010.

Due to the poor performance of the oval over a number of years, especially during wet winters, the Colac Otway Shire first started the process of applying for funding for a surface upgrade in 2010. Initially unsuccessful, in 2011 the Victorian Government allocated \$100,000 to the project through the Sustaining Sports Grounds Program, which was then followed by \$250,000 from Sport and Recreation Victoria and AFL Victoria through the Country Football Netball Program. This then gave the council leverage to allocate the additional funds in their 2012/13 budget. The final funding contributions were:

- Sport & Recreation Victoria Country Football Netball Program: \$250,000
- Sport & Recreation Victoria Sustaining Sports Grounds Program: \$100,000
- Local Government Infrastructure Program: \$150,000
- Colac Otway Shire: \$250,000
- Total: \$750,000

Melbourne-based Pitchcraft P/L was awarded the contract at the end of September 2012 to undertake the reconstruction works of the playing surface. The project was overseen by Ian Seuren from the Colac Otway Shire with SportsTurf Consultants engaged as principal turf consultant. Project manager for Pitchcraft was Mathew Woolfe with David Gudgeon filling the role of site supervisor.

TRANSFORMATION BEGINS

Resurfacing works began at the start of October 2012 with Pitchcraft undertaking preliminary works of securing the site, locating underground

facility.



services and removing existing fixtures. Two heavy applications of glyphosate were also made to ensure that a full kill of the existing surface (a mix of kikuyu, common couchgrass and weed varieties) was achieved before construction commenced.

The existing wicket block was removed from the centre of the ground and 50mm removed from the entire surface. All excavated material was stockpiled adjacent to the field and then removed from site. The entire surface was then cultivated and laser levelled to a tolerance of +/-10mm to create a 1 per cent fall from the south-west to the north-east of the oval. The entire surface was then rolled and compacted to create an acceptable subgrade.

This was a challenging part of the project as the old drainage system, that was now redundant due to being damaged when the original irrigation system was installed in 1984, created avenues for pockets of water to be present under the subgrade. This then created soft spots in the base which had to be removed and replaced with crushed rock, with a geotextile fabric placed under the crushed rock to help bridge these areas. New goal post footings were also installed during this time.

To remedy irrigation deficiencies, a dedicated Rain Bird irrigation system was installed consisting of 98 8005 Series sprinklers and 26 PESB Rain Bird 40mm solenoid valves. All pipework work was installed at a depth of 650mm from finished grade to allow the drainage system to be installed over the irrigation pipework.



Due to the local water authority dropping the water pressure to the oval, a 60,000-litre tank was installed with a Lowara SV15-08 HPS 7.5kw pump so adequate pressure was available to run the new system. Once it was discovered that the local mains pressure would not run the system and it would be run by the new tank/pump setup, the irrigation mainline was upgraded to 80mm to allow two stations to water together simultaneously. Once all the irrigation pipework was installed all trenches where consolidated and the surface was given a final laser level prior to the drainage installation.

The subsurface drainage system consisted of a 489 lineal metre ring main around the perimeter of the oval which was trenched at a depth of 550mm below the finished grade. The ring main installed was 150mm slotted ag-flex pipe and connected into seven drainage pits around the existing spoon drain.

Into this ring main where two collector drains that ran across the oval to pick up the lateral drains at even intervals. The two collectors consisted of 274 lineal metres of 100mm slotted ag-flex pipe installed at a depth of 450mm from finished grade. Connected into these drains where the lateral drains which where spaced at 5m centres across the





Central Reserve prior to the redevelopment. Remedial works conducted back 1984 had over time impacted significantly on the performance of the playing surface, especially during wet winters

Resurfacing works began early October 2012 with two heavy applications of glyphosate to ensure there was a full kill of the existing kikuyu/common couchgrass surface



Some 9700 tonnes of rootzone sand was imported to the site and amendments power harrowed to a depth of 100mm. The surface was then rolled and given a final trim

field totalling 3512 lineal metres of 100mm ag-flex pipe. All trenches where then filled with a drainage aggregate that was tested by the construction supervisor to ensure it met the specification.

TOPPING IT OFF

A 250mm deep rootzone was spread over the entire surface, the sourcing of which proved to be the most tedious part of the planning stage due to the tight specification and a construction supervisor that was committed to providing the council with a project that met specification. Continual testing was undertaken to ensure the imported sand met the physical and chemical properties of the specification.

Some 9700 tonnes of sand was imported to the site, stockpiled, then spread over the surface using the 'dump and push' method. To ensure no machinery trafficked the subgrade, a 25 tonne Moxi truck was used to transport the sand from a rear car park to the surface. The sand was then pushed out with tracked bobcats and levelled with a large laser scoop pulled by a 100hp tractor. About 1200 tonnes was spread and levelled each day.

The rootzone layer was then amended with gypsum (2t/ha), magnesium sulphate (300kg/ha), Prostart 16-24-10 (300kg/ha), Super Phosphate (400kg/ha) and Dynamic Lifter (4t/ha) which were power harrowed to a depth of 100mm. The surface was then rolled and given a final trim.



Lateral drains were spaced at 5m centres across the field totalling 3512 lineal metres of 100mm ag-flex pipe

A line planter (without tines engaged) was used to chop and broadcast the Santa ana couchgrass sprigs which were incorporated into the profile using a power harrow. Full coverage was achieved after 10 weeks



With the rootzone in place, turfing began on 13 December 2012. Santa ana couchgrass was chosen as the preferred variety which was planted at a rate of 10 per cent. A line planter (without tines engaged) was used to evenly chop and broadcast the sprigs over the surface, which were incorporated into the profile using a power harrow. The entire surface was then rolled to bed the sprigs in. This method of planting was extremely successful with 100 per cent cover achieved in 10 weeks.

GAME DAY

The excitement throughout the Colac community during the construction phase of the project was amazing, which put a great deal of pressure on all involved to make sure Central Reserve was at its best for the first game/opening of the ground.

The Colac Otway Shire engaged Pitchcraft to undertake a further eight weeks of maintenance beyond the construction grow-in to ensure the field was maintained to AFL standard for the first game between Colac Tigers and St Marys on 4 May 2013.

With the high standard of playing surface wanting to be achieved and maintained all winter, the decision was made to oversow the surface with ryegrass for the first year (PGG Wrightson's Sports Oval blend was used at a rate of 400kg/ha) which will be sprayed out mid-spring. Pitchcraft will continue to support the ground staff at Central Reserve assisting in fertilising, spraying and renovations of the oval to ensure it continues to be one of the highest quality playing surfaces in rural Victoria.

Since its opening, the venue has been well utilised by the community and Colac Otway Shire manager for recreation, arts and culture lan Seuren says the council couldn't be happier.

"Of utmost importance to council and the community was the final outcome of the project, which has transformed the oval from a poor quality playing surface to a premium sports field," says Seuren. "Feedback from the community has been overwhelmingly positive, who are sincerely proud of the facility they have. It really is a state-of-the-art, oval now capable of hosting high level events."

ACKNOWLEDGEMENTS

The majority of the team at Pitchcraft have been involved in the construction and maintenance of sports fields at a national and international level and rank the experience at Central Reserve high on the list of rewarding achievements. This satisfaction has a lot to do with the support of the council and community throughout the project.

Special thanks go to Colac Otway Shire, especially Ian Seuren and Mark Robinson, Colac Football Netball Club and the Colac community, Murray and Al Hume (Hume Excavations), Graeme Mckay, ULS Group (irrigation), Aussie Drain, Mick McMahon (Lawn and Turf) for broadcasting sprigs, GrassRoots Turf, One80sports (goal posts), Simplot and Ausigns (grass signs).

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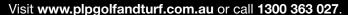






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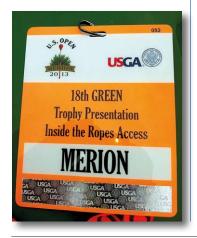


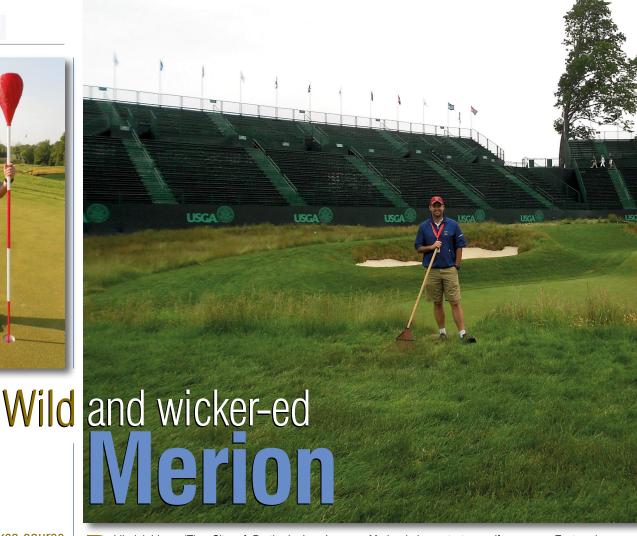
The Best Brands in the Market





Sanctuary Lakes course superintendent Brett Hawkey looks back at the 113th US Open held at Merion Golf Club where he was one of five Australians volunteering on the tournament crew.





hiladelphia - 'The City of Brotherly Love', home to the Liberty Bell, the signing of the Declaration of Independence and host for the 113th US Open at Merion Golf Club from 13-16 June 2013. Established in 1896, the famed Merion Golf Club enjoys the distinction of hosting more USGA championship events than any other club in the US, with the 2013 US Open being its 18th such event.

Over the years it has been the site of several iconic moments in the game's history. Bobby Jones completed the only Grand Slam in history (winning four majors in one year) after winning the US Amateur Championships at Merion in 1930. Jones won the final 8&7 on the 11th green and his feat is commemorated by a plaque which resides on the 11th tee.

Twenty years later, Ben Hogan pulled off one of the most famous US Open victories in what became known as the 'Miracle at Merion'. Playing in his first 'major' since a near fatal car accident some 16 months earlier, the 1948 US Open champion forced a three-way playoff after flushing a 1-iron approach on the 72nd hole to within 40 feet and two-putting

In the resulting playoff against Tom Fazio and Lloyd Mangrum, Hogan shot a 1-under 69 and triumphed by four strokes to secure what would be the second of his four US Open titles. As with Jones' exploits, a plaque on the 18th fairway reminds golfers today of the spot where Hogan hit his now famous 200-plus yard 1-iron.

Merion is home to two golf courses - East and West - with the former hosting the Open for the fifth time in 2013. Opened in 1912 and designed by Merion member Hugh Wilson, the East course resides on just 126 acres (51 hectares) and only minor renovations and tweaks have been made to the course over the past 101 years.

As well as its architectural beauty which sees it rated No.7 in the US and among the world's top 20 courses. Merion is most famous for the unique wicker baskets which are used instead of conventional flagsticks. The wicker poles, which are a bright red/orange colour, are taken down each night and put back in place each morning.

EXCITING TIMES

Upon arriving in Philadelphia after some lengthy flights from Melbourne, followed by a short train ride from New York, I was anxious to get my first look at the golf course and meet some of my fellow volunteers. This was my first time volunteering at a 'major' and came after I had to pull out of last year's Open at The Olympic Club in San Francisco due to the birth of my first child.

I was one of five Australians who had journeyed across for the tournament, the others being course superintendents Andy Hugill (Mona Vale Golf Club, NSW), Chris Allen (Keysborough Golf Club, Vic), Garry Smith (New Brighton Golf Club, NSW) and assistant superintendent Dean Lenertz (New South Wales Golf Club, NSW). We were among a



contingent of 10 internationals that formed part of an overall volunteer corps of 120 which supplemented Merion's full-time crew of 45.

The first staff meeting on the Sunday after arriving at Merion was originally to be held in the maintenance facility, but it had to be relocated due to heightened security around the entire site. We ended up meeting on a fairway on the West course while the sheds had sniffer dogs sweep for anything untoward, a common sight throughout the week.

After a short welcome and collecting our credentials and supplies for the week, Merion's director of course operations Matt Shaffer and East course superintendent Aaron McCurdy gave us some insight into the week ahead before we jumped into a bus and headed to the East course.

As well as preparing the East course, a couple of back up holes were also to be groomed on the West course in case of inclement weather. The West course was also utilised as a practice facility.

Walking onto the 18th fairway of the East course first and seeing the Ben Hogan plaque within a matter of minutes, you quickly became aware of the history of this golf course and how good it actually is. It was certainly very exciting walking around the place with no one else on it.

After a couple of hours taking in some of the course's famous back nine holes, we were back on the bus heading to our accommodation which was located about 20 minutes away and setting the alarm for a 2.30 Monday morning wake up.

Arriving back at the course at 3.30am and after having some breakfast, we were assigned our first jobs. Andy and I were in the bunkers first up which gave us a bit more of a chance to have a look around the course. Not long after that shift ended it poured down, with the course getting a couple of inches of rain on top of the 3.5 inches that had already been recorded the previous Friday.

The course drained pretty well with the only problem area around the 11th green and its greenside bunker which was completely inundated and had to be rebuilt before the Tuesday practice round. The rain then came again on Thursday which forced the suspension of play midway through the opening round.

The rain obviously brought some issues with it, not only for the golf course staff but for the public. Pedestrian areas quickly became boggy and needed to be either mulched or a bed of straw put down to allow easier access for the fans. I'm glad I wasn't around for the clean up!

TOURNAMENT TIME

The tournament was upon us quickly and with a little promotion I was on a John Deere 7500 Hybrid mower cutting fairways with nine others morning and night. We altered cuts each time and would be finished in just over an hour most times. It was great fun but we had to be on our toes as a very keen intern was keeping us in line!

It was quite a sight when we were all out working. The whole course was a hive of activity with a lot of the crew having to walk to their jobs as vehicle use was kept to a minimum.

A typical day during the tournament would see us at the sheds by 3.30am for breakfast and out on the course ready to start by 4.30am. All morning jobs were completed by 7am, lunch was served at 10am and dinner at 4.30pm. Staff would then return at 8pm and work through until 10pm – there was more time for sleep during the day than at night!

Brett Hawkey was one of five Australians who were part of a 120-strong course volunteer contingent at the recent 2013 US Open at Merion Golf Club



Brett Hawkey with eight-time major champion Tom Watson

Merion's bentgrass greens were cut at 2mm and stimped around 13.5 for the tournament





Merion has bentgrass tee to green but had noticeable patches of ryegrass in the fairways and surrounds and some patches of *Poa annua* in the greens

Above right: True to US Open form, Merion's rough was brutal The bonus was we got to watch a lot of golf and with a section that was inaccessible to the public but open to those who had an 'inside the ropes' pass not far from the sheds, we could see the golf up close and almost mingle with the players and caddies.

The golf course played very well throughout the week and surprised many by how tough it was playing even though it was damp for a few days and considered relatively short by modern standards.



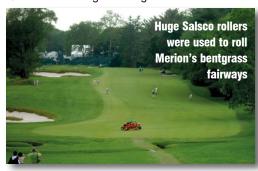
Merion has a good mix of holes with long and short par fours and, in the main, very long par threes. With only two par fives, the players didn't have the usual chance for easy birdies.

The rough, as usual for a US Open, was brutal with errant shots punished. Only a couple of days out from the tournament some rough had to be cut down as players were commenting on potential injury risks trying to hit out of it in some spots. The fairways had also been bought in quite markedly on a few holes and you could see still see the normal shapes which would be returned soon after the tournament.

Merion's bentgrass greens were very slick (around 13.5 on the Stimpmeter most days) and had some nasty pin placements which the USGA took full advantage of as they tried to protect the course. The greens held up really well after all the rain and were receptive to shots but still had some good pace in them. I wouldn't have liked to have played on them if they were as firm as they were the week before – the winning score might have been +10!

One thing that interested me most during my time at Merion was the turf philosophy. Merion has bentgrass tee to green but had noticeable patches of ryegrass in the fairways and surrounds and some patches of *Poa annua* in the greens. There wasn't a huge emphasis on having clean surfaces, rather they would just accept some issues and concentrate on other things which I thought was very refreshing, especially for an American course. Another thing that I picked up on was the recycling of grass clippings. All clippings were caught and dumped into a Dakota spreader and later spread over rough and surrounding areas as fertiliser.

The whole US Open experience was very satisfying and great to be a part of, especially at such a prestigious golf course. You don't get the chance to get on those sorts of places all the time and it is something I will long remember.



AT A GLANCE - 2013 US OPEN, MERION GOLF CLUB

The People

- Superintendent: Matt Shaffer (11 years at Merion)
- Tournament prep history: 2009 Walker Cup, 2005 US Amateur Championships
- Key personnel: Aaron McCurdy (East course superintendent)

The Course

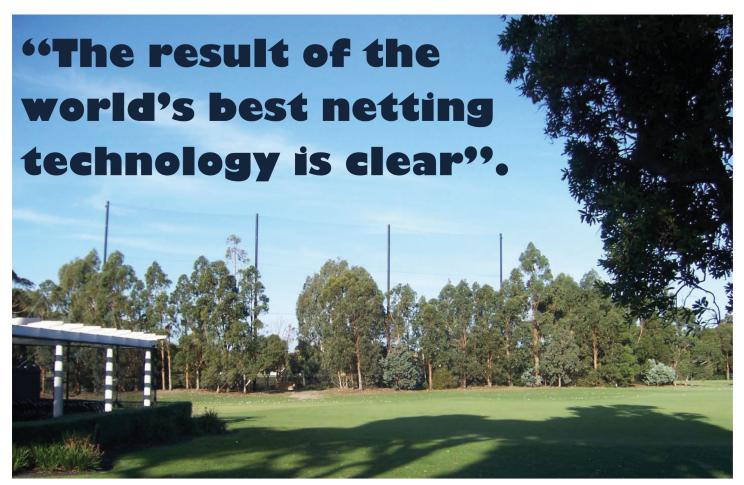
- East course bunkers: 128
- Greens construction: Original push up greens (XGD drainage in greens)
- Annual rounds: 15,000
- Average green size: 557m²
- Average tee size: 278m²
- Hectares of fairways: 7.3
- Hectares of rough: 20

The Turf

- Greens (bentgrass) HoC: 2mm. Stimpmeter readings 13.5 most days.
- Tees (bentgrass/Poa) HoC: 8mm
- Fairways (bentgrass) HoC: 12mm
- Rough (mix of bentgrass, Kentucky bluegrass, ryegrass, fescue) HoC: 90mm
- Renovations: DryJect and ½" hollow tines (twice a year). Dust only in winter with kiln-dried sand

The Machinery

- 10 John Deere 7500 Hybrid fairway mowers
- 22 John Deere 180E greens mowers
- 9 John Deere 2500E tees/approach mowers
- 4 Salsco greens rollers
- 4 Salsco fairway rollers
- No backlapping, only grinding. Three full-time mechanics on staff, 13 for tournament.



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Allan Shorland

Secretary Manager
The Metropolitan Golf Club





AGCSATech senior
agronomist Andrew Peart
puts the Greenstester
device, used to perform
The R&A's 'Holing Out' test,
through its paces.

ollowing the year-long Horticulture Australia Ltd (HAL) funded golf course benchmarking study undertaken by the AGCSA (TU11003), one of the more interesting findings was that green speed was more strongly correlated to green smoothness than any other single parameter, such as surface firmness, grass height or moisture content.

Green smoothness had only been assessed in the second half of the trial following a trip to New Zealand and subsequent discussions with New Zealand Sports Turf Institute (NZSTI) agronomist Alex Glasgow.

The NZSTI had undertaken similar benchmarking studies in 2004 and 2009, where green surface smoothness was assessed by observing the number of bobbles, jumps and/or snakes of a golf ball as it rolls over the green surface after leaving the Stimpmeter (Mitchell, 2010).

This method had been discussed initially at the start of the AGCSA trial but it was deemed that there was too much inconsistency with the ball leaving the Stimpmeter that would cause the ball to either bounce or not bounce irrespective of the green surface.

A method of assessing the surface smoothness was devised with Glasgow which involved putting a golf ball towards the hole from a distance of around 3m and visually assessing whether it bobbled (chattered) or had visible lateral deviation. In total three balls were putted towards the hole in four

directions from the distance of around 3m with a score given out of 5 for the consistency of roll. Our smoothness test was never intended for putts to go into the hole but using the hole as a guide to the speed of putt which should be hit.

It was apparent that ball speed also influenced the noticeable deviation. The ball tended to bobble or jump at greater speeds but was more inclined to deviate off its lateral line at lower speeds, and therefore putting from around 3m from the hole meant that ball speed was more consistent.

While the AGCSA was comfortable with this method for assessing green smoothness, it certainly was nowhere near the accuracy of the STRI's Trueness Metre but thought to be a better method than assessing surface smoothness by rolling the ball off the Stimpmeter.

GREENSTESTER

It was with great interest then that the AGCSA heard of the 'Greenstester', a device that has been specifically designed to test the reliability of a golfing surface. The Greenstester was invented by Fintan Brennan who is the links superintendent at Portmarnock Hotel and Golf Links in Ireland. Not only is Brennan a 4 handicap golfer, he was also a metal worker in a previous life and with the help of his brother Ray, a basic ramp (modified as a curve) was devised.

The ramp was designed to provide a smooth





transition from the end onto the putting surface to avoid any disruption to the roll. It also had a moveable ball release mechanism from which the ball could be released meaning that different length putts could be assessed.

The ramp was not only designed to assess the reliability of a putt but also to measure green speed so that it could be used as an alternative the conventional Stimpmeter. When the ball release mechanism is placed to the highest point on the ramp, it has been designed to release the ball at the same velocity as a golf ball leaves the Stimpmeter. The Greenstester may be seen as a more reliable tool for testing green speed as it eliminates the 'flick' that may occur in the final stage of lifting the Stimpmeter to its release point.

The Greenstester, therefore, has two primary functions;

- Measuring green speed; and
- Performing The R&A's 'Holing Out' test.

HOLING OUT

The Holing Out test was developed by The R&A to provide golf clubs with "an easy and affordable way of monitoring the reliability of their putting surfaces throughout the year." (The R&A, 2013)

The test is performed generally at 6 and 9 feet (183cm and 274cm) from the front edge of the hole, that being the pin position for that day. Ideally it should be on a flatish trajectory towards the hole, as balls being rolled from 9 feet from the cup may not reach if the green speed is slow or the incline is too severe. The test should be conducted in calm conditions as excessive winds will cause balls to deviate.

Once set at the correct distance, the ball release mechanism must be adjusted so that any ball that misses the hole does not travel more than one full revolution past the hole (about 5.3 inches or 12cm). As mentioned earlier, ball speed has an effect on the deviation of the ball so it is important to set this correctly. Once the speed has been set, it is now about ensuring the correct line so the ball drops into the centre of the cup. Once two consecutive balls have gone into the hole, the test is ready to begin.

The Holing Out test involves releasing 10 balls from the Greenstester and recording the number that enter the cup. The protocol suggests that if more than 20 per cent of 'putts' miss the hole (i.e.: less than eight out of 10) concerns about the integrity of the surface may be justified.

TEST RUN

The AGCSA undertook a brief test of the Greenstester on five different green surfaces at a Melbourne-based golf course on Thursday 20 June, 2013. The greens (3rd and 7th greens, new putter, old putter and chipper) had recently been solid tined with 5mm tines during that week, with the exception of the chipping green.

The cutting height was 3.2mm although all

greens had last been mown on the morning of Monday 17 June and had been rolled on Wednesday 19 June. The 7th green was out of play and had neither been mown nor rolled. All greens had dew removed with brooms on the Thursday morning prior to performing the Holing Out test. General greens maintenance regimes at this course for this time of year see the greens mown 3-4 times a week and rolled twice a week.

As well as undertaking the Holing Out test from 6 and 9 feet, surface hardness (0.5kg Clegg hammer, dome head) and green speed were also measured. The results are presented in Table 1.

TABLE 1: GREEN SPEED, SURFACE HARDNESS AND HOLING OUT RESULTS

Location	Green speed	Hardness (g)	6' distance	9' distance
New Putter	2.83m	76g	10ª	3
Chipper	3.06m	96g	9	4
3rd green (am)	2.81m	94g	8	7
3rd green (pm)	-	-	5	7
7th green	2.14m	92g	8	7
Old Putter	3.12m	79g	8	8

a Number of times, out of 10 rolls, the ball went in the hole.

The green speed for that morning on all surfaces was around 9.5-10.5 feet (2.85m-3.15m) with the exception of the 7th green which was running at 7 feet. This was no doubt a reflection of the green not being mown or rolled that week. The hardness readings were a little variable with the softest surfaces being the new and old putting greens.

The new putting green provided the truest surface from a distance of 6 feet but provided poor results when the distance was extended to 9 feet. The new putter is around 12-18 months old and has a complete coverage of Mackenzie bentgrass. It was very noticeable though at the time of the test the impact that foot printing had had on the surface. Although the green was tested in the morning, the course had just commenced with a shotgun start, resulting in a high level of usage on the putting green just prior to the test being conducted.

The Holing Out test was developed by The R&A to provide golf clubs with an easy and affordable way of monitoring the reliability of their putting surfaces throughout the year



AGCSATECH UPDATE







The Greenstester ramp is designed to provide a smooth transition from the end onto the putting surface to avoid any disruption to the roll. It also has a moveable location from which the ball can be released to assess different length putts

As well as being designed to assess reliability, the Greenstester can also be used as an alternative to the Stimpmeter to measure green speed



The 100 per cent result at the 6 foot range may indicate that this green has the potential to provide the most reliable putting surface under the present management regime, although it was adversely affected by the heavy level of usage, particularly given the softish surface.

It was interesting to note that while the 7th green was much slower paced than the 3rd green, the results of the Holing Out test were the same. The impact of a day's play also affected the results of the 6 feet 'putts' when the test was undertaken at 4.30pm as opposed to 8.30am on the 3rd green. Given that the result was lower for the 6 feet 'putt', it was surprising to note that the result of the 9 feet 'putts' remained at 70 per cent.

While the firmness of the chipping green was greater than the new putter and its usage far less, the age and botanical composition of that surface was far different to that of the new putter. In the case of the new putter, surface softness may have contributed to the poor 9 foot result whereas for the chipper it was more likely as a result of the higher percentage of *Poa annua* within the surface.

CONCLUSION

Although we have only used this apparatus a few times at this stage, it certainly showed that ball deviation could be attributed to a number of factors which may be responsible for obtaining less than the desirable 8 out of 10, especially at the 9 foot range.

The device can no doubt provide golf course superintendents with valuable information on the consistency of their putting surfaces throughout the year and the impact that management practices have on their trueness.

To gain valuable information from using the Greenstester, superintendents should undertake the Holing Out test at the same time each day and record the maintenance inputs that have been undertaken for the week in the lead-up to the test. It would be perceived that over a period of constant monitoring, trends would become very clear regarding the performance of their putting surfaces.

For more information on the Holing Out test visit The R&A's golf course management website http://golfcoursemanagement.randa.org.

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NEYLAN

There are many factors which contribute to the deterioration of turf systems over time, including poor initial construction, an increase in organic matter content, soil compaction, excessive wear and changes in the turfgrass sward composition





ATM's expert columnist

John Neylan

considers what it takes to age gracefully (from a turf playing surface perspective that is) and looks at sports fields, construction and drainage.

Aging gracefully

question often asked by a turf manager or club management as they ponder the merits of building a new green, sports field or racetrack is 'How long will it last?' As a general rule, if the turf system is well designed and constructed and given the appropriate level of maintenance, it could be expected to 'last forever'.

Initial construction is the absolute key and by using the right sand at the correct depth, incorporating adequate subsoil drainage and using appropriate construction methods, there is little reason not to expect the turf system to function for an unlimited period of time.

Of course, the reality is that most turf systems deteriorate to some degree over time. Whether it is a golf green that is not as firm or as fast as it used to be, a sportsfield that is not coping with traffic or a racetrack that has become less stable over time, there are many factors that can contribute to these changes including an increase in organic matter content, soil compaction, excessive wear and changes in the turfgrass sward composition.

CONSTRUCTION

Let us get the construction aspect out of the road to start with. Simply put, the design and construction of the turf system will have a dramatic influence on the longevity of the system and with the correct management practices time will present few detrimental aspects. The factors that can go wrong include;

- Selecting a sand that is too fine and susceptible to compaction;
- A lack of consideration to the surface contours, such as in golf greens, that impede surface drainage:
- Inadequate rootzone depth that results in poor drainage characteristics;
- A lack of sufficient subsoil drainage to allow for the rapid removal of subsoil water; and
- Poor subsoil compaction that results in subsidence and compromised drainage.

Management of the project during construction can also have a dramatic effect on the end result. There are numerous aspects that can go wrong including sand and gravel variability, poorly installed



drains, poor surface grading, lack of uniform consolidation of each layer and contamination of rootzone layers with high clay soils that can come in with solid turf.

There are many examples of where turf systems have been poorly constructed and suitable surfaces can be produced. However, this usually involves a more intensive level of management with increased aeration, installation of supplementary drainage, increased sand topdressing (dusting) and more frequent renovations.

The change to pure sand rootzones has come about primarily in response to the inability of loamy sand/sandy loam profiles to cope with increasing traffic levels under wet conditions. There is also an increasing demand at all levels of competition for better and more consistent playing surfaces. While it is possible to counteract some of the negative effects and stall the aging process, under extreme conditions a poorly constructed and/or managed system will collapse (in some way this is the 'death' of the turf system).

Turf systems are living and dynamic and as a consequence there will always be change. As grasses grow they produce organic matter and as it accumulates to critical levels it can clog pore space, reducing infiltration rates, increasing moisture retention and providing a suitable environment for diseases to develop. The effects of traffic will have some impact on the surface layers and even with sands there will be some compaction. The combination of organic matter and compaction results in reduced macro-porosity, reduced gaseous exchange and deterioration in root growth.

As time progresses the most obvious changes that we observe in golf greens is the accumulation of organic matter (thatch and rootmat), reduced infiltration rates, infestation by unwanted grasses such as *Poa annua* and softer surfaces. As discussed in previous articles, the accumulation of organic matter is still the number one enemy in maintaining the longevity of putting greens.

The infestation of bentgrass with *Poa annua* has also been often discussed and tends to relate to the age of the green. It is a natural phenomenon associated with managing putting greens that the effects of traffic, surface compaction, organic matter accumulation and poor irrigation techniques will encourage the presence of this ubiquitous weed. The traffic aspect in particular is often understated but a major contributor. High traffic zones in walk on, walk off areas and poor design that limits the number of pin placements provide the perfect environment for *Poa annua*.

With sports fields, the main changes with time are not too dissimilar, with organic matter accumulation and soil compaction the greatest influences on a lack of performance over time. Most sports fields are now established using couch or kikuyu and for many of the elite venues they are overseeded with ryegrass. Where ryegrass is permitted to persist



it will result in a rapid deterioration of the warmseason base. As the turf becomes dominated by ryegrass (and *Poa annua*) the surface lacks stability, there are more divots and there is a reduction in wear tolerance.

Racetracks provide the most extreme example of the stresses that can be experienced in any turf system, particularly as it relates to soil compaction and turf damage. With race programmes that provide few opportunities to implement the necessary renovation programmes, the racing surface will eventually became less stable, suffer from reduced infiltration rates and reduced surface stability.

In localities where cool-season grasses are used, *Poa annua* readily infests the damaged areas which further adds to a lack of surface stability. In warmer climates, soil compaction and reduced infiltration rates are the main concerns, as well as the invasion of weed species such as Crowsfoot grass (*Elusine indica*). As with *Poa annua*, Crowsfoot grass colonises thin, open turf, particularly on worn areas and compacted soils. The invasion of weeds species into any turf system becomes more problematic in an aging turf system where the turf thins out and a seedbank begins to accumulate.

In research undertaken by Guassion et. al. (2007) where the dynamics of a turf rootzone were closely monitored over several years, it was determined that air-filled porosity (large pores), capillary porosity (small pores), bulk density and infiltration were significantly correlated with rootzone age.

All soil physical properties demonstrated the same rate of change (slope) with age between the two rootzone treatments. Capillary porosity was correlated with rootzone age (increased as the green aged) and increased by 53 per cent to 60 per cent depending on the rootzone mixture. Air-filled porosity was negatively correlated (decreased as the green aged) with rootzone age and decreased

The development of black layer as a result of poor drainage in a low spot on a golf green

Build well, manage well and age should not be a problem; all that will be required is some occasional cosmetic surgery. Fail to do so and you run the risk of comprising the entire turf system.

John Neylan





A green approach showing the effects of physical wear and soil compaction

28 per cent to 34 per cent. Infiltration rate decreased as the greens matured with a 70 per cent to 74 per cent decline.

The effect of time on a turf system depends entirely on how the turf system is managed. As with most natural systems, time is the enemy and there will always be a natural decline and a move towards senescence. The difference between turf systems and many other plants is that we are able to manipulate the system in order to reduce the rate of decline. It is as simple as managing organic matter and compaction and must start immediately after the turf is established. It is all about preventative management.

So, how do we know the turf is moving towards decline? Visual symptoms usually mean that the process has gone too far and drastic measures are needed. It comes back to undertaking some objective monitoring or, dare I say it, benchmarking.

Measuring infiltration rates, surface hardness, thatch depth, organic matter content, soil moisture and estimating *Poa annua* content and other weeds will provide important information as to where the turf system is heading. Tracking these changes allows decisions to be made before the problems are obvious to everyone.

When age catches up, what then? If the turf system was well constructed and does not have any inherent flaws, it may be a simple matter of resurfacing, where all of the accumulated organic matter, weed species and weed seeds (most of them) are removed. We are then back to a fresh palette where a new, young and inherently healthier turf system can be established.

Build well, manage well and age should not be a problem; all that will be required is some occasional cosmetic surgery. Fail to do so and you run the risk of comprising the entire turf system.

SPORTS FIELDS, CONSTRUCTION AND DRAINAGE

As suburban sprawl increases there is an increasing demand for recreational areas for football, soccer,

rugby and cricket. To meet these demands many municipal councils are constructing new fields or upgrading old fields in order to provide sufficient space for these activities.

The style of construction varies considerably depending on the standard of surface required and, of course, the budget. Unfortunately there are still many fields constructed based on budget-driven specifications that will never meet any realistic expectation. There seems to be very few new fields being built according to well-proven specifications but an unworkable compromise.

If a new sports field is to be constructed that will provide a high quality surface year round and be generally unaffected by rainfall, it needs to consist of a well-drained sand profile of adequate depth with a subsoil drainage system. Unfortunately what we often see is a 'sandy' soil profile that is shallow or layered with a subsoil drainage system with widely spaced drains.

The end product is a profile that will allow water to enter the profile where it will accumulate at the interface with the underlying layer(s), eventually saturating the rootzone which in turn results in muddy conditions. The resulting surface damage results in either ground closure, limited access or considerable damage that needs expensive repair come spring.

Soil depth has a major influence on the drainage characteristics of the profile. If it is too shallow there is insufficient hydraulic head for effective drainage to occur, even if there are subsoil drains present. For most of the sands commonly used in the construction of sports fields, the required depth needs to be 250mm-300mm.

In their book on sports field drainage, McIntyre and Jakobsen (1998) demonstrate the relationships between topsoil depth and drain spacing on the drainage rate of a field (Table 1, opposite page). In this example it clearly demonstrates the futility and waste of money of having wide drain spacings in a sports field with a shallow topsoil layer.

As can be seen in Table 1, drain spacing has a dramatic effect on the drainage capacity of the field. Water moves laterally very slowly in soils and where drains are widely spaced there will be ineffective removal of excess water.

For example, if the saturated hydraulic conductivity of the soil is 100mm/hr and the slope of the subgrade is 1:100, the lateral flow will be 1 per cent of 100mm/hr or 1mm/hr. Despite these basic elements of soil physics we consistently see fields with sand profile depths of 100mm-150mm deep and drain spacings up to 10 metres apart. These fields are destined to fail.

HOURS OF USE

No discussion regarding the construction of sports fields can be undertaken without considering the hours of use. Some early, ground-breaking work undertaken by Baker et.al. (1992) demonstrated

Regular monitoring of infiltration rates can assist in being proactive in managing aging turf systems





the relationship between construction type and the hours of use. Their research involved monitoring the playing quality of six pitches during four playing seasons to determine the levels of use which could be sustained on pitches of different construction types.

Estimates of maximum sustainable use for a 35-week playing season from early autumn to spring ranged from less than 50 adult games per season (about 2.1 hours/week) for a pipe-drained pitch on a naturally poor draining soil, to 125-180 adult games per season (5.4-8 hours/week) for a sand carpet pitch and a pure sand rootzone perched water table construction.

The factors limiting usage were regular waterlogging on the fine textured soil with pipe drainage and instability and erosion of the surface, following loss of ground cover, on the sand rootzone. This research was done in the UK with cool-season grasses and it should be noted that in Australia most fields will have a warm-season grass base which substantially improves the tolerance to wear and surface stability.

Melbourne City Council suggested that as a general rule the industry standard for hours of use for a natural turf field is between 14 and 18 hours per week, but only where the field is a well-drained sand-based construction that is well maintained and in good condition (MCC, 2010).

McAuliffe (2011) has provided generic figures for the potential hours of use based on grass type and a well-drained sand profile. In winter he suggests 15-20 hours/week for couch and 13-18hrs/week for kikuyu and in summer this increases to 20-25hrs/week (couch) and 17-20hrs/week (kikuyu). From recent observations with council fields there are many that are subjected to excessive hours of use, however, it is clear that the introduction of



Aging greens (far left) are often noted for their soil layers and compaction while new profiles (left) exhibit minimal thatch, good root systems and no compaction

couch has substantially improved the wearability of the surfaces.

As a general overview of sports field use, it needs to be defined as more than hours of use and they need to be matched against other parameters such as:

- Quality of the playing surface required;
- Safety; and
- Restoration costs.

For many sports fields there is excessive demand across too few fields and the main priority appears to be to provide space for sport without defining the quality requirements of the surface.

The Northern Sydney Regional Organisation of Councils in a June 2011 report (NSROC, 2011) identified a number of issues relating to sports facilities. Key issues common to all NSROC councils included the shortage of sportsgrounds, which is set to worsen with continued population growth and greater participation in organised sporting activities. Other issues included lack of space and budgetary constraints which impeded sports infrastructure development and maintenance, limiting the ability of all councils to meet current and future needs.

TABLE 1: RELATIONSHIP BETWEEN SOIL DEPTH AND DRAIN SPACING ON FIELD DRAINAGE

Soil with a Hydraulic Conductivity of 50mm/hr						
Distance drains	Depth of saturated 'free water' zone of topsoil					
spaced apart	200mm		100mm			
	Drainage rate	Time taken to	Drainage rate	Time taken to		
	of topsoil	drain top	of topsoil	drain top		
	(mm/hr)	50mm of topsoil	(mm/hr)	50mm of topsoil		
10 metres	0.063	200 hrs	0.013	1000 hrs		
2 metres	1.563	8 hrs	3.13	40 hrs		
1 metre	6.25	2 hrs	1.25	10 hrs		

NB: The table is based on the drainage rate of the top 50mm of a soil profile with: a 'free water' zone 100mm and 200mm deep; a hydraulic conductivity of 50mm/hr; a porosity of 25 per cent and drains spaced at 1, 2 and 10 metres apart. Source: McIntyre and Jakobsen 1998.





Drain spacing has a dramatic effect on the drainage capacity of a field. Water moves laterally very slowly in soils and where drains are widely spaced (as shown above) there will be ineffective removal of excess water

> Below right: High wear areas on sportsfields require increased fertility. Note how the couch base is holding the surface together

Below: A sand slit system with close spaced slits and ag-drains can be a cost-effective option There is no getting away from having a well-constructed field that has predictable drainage characteristics and is able to be kept relatively dry throughout the winter months. The next challenge is ensuring that there is a reasonable budget available for maintaining the quality of the surface.

It is not only the budget available to maintain the quality of sports fields, it is also the flexibility in how these surfaces are maintained, particularly as it relates to pest and weed control and fertiliser applications. One example of being more flexible is the need to place more emphasis on fertilising the high wear areas of the field throughout the year, particularly leading into the winter months. This is to develop as strong a mat of grass as possible so as to increase the wearability of the surface.

The other aspect of sports field maintenance, which is a topic in its own right, is undoubtedly irrigation management. Many sports fields have irrigation systems, however, few have the ability to

deliver an appropriate amount of water due to low precipitation rates and poor distribution uniformity.

If a sports field is not performing the first step is to undertake a detailed analysis of the existing site conditions including soil type, soil depth, infiltration rates, grass types, surface evenness, wear and hours of use. At the very least this identifies the strengths and weaknesses of the field and then an appropriate strategy can be developed to improve the condition of the field. Even on poorly constructed fields, a detailed site analysis will provide critical information around which a maintenance strategy can then be put in place to minimise structural deficiencies.

A key part of any assessment is to determine what the client's requirements are for the field and in particular the wet weather/drainage performance characteristics. While it can be relatively easy to construct a well-drained sand-based field, it then must have a maintenance budget that befits that field so that the performance parameters can be sustained.

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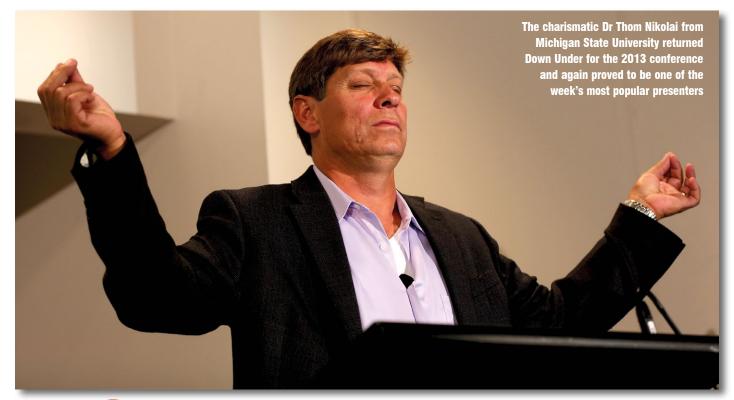
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Sunshine

SUCCESS

Novotel Twin Waters
Resort played host to the
29th Australian Turfgrass
Conference and Trade
Exhibition in the last week
of June. ATM looks back
on a fabulous week of
networking and education
on the Sunshine Coast.



fresh location, some well-received format changes, brilliant weather and a sold-out trade exhibition were more than enough to invigorate superintendents and turf managers from across the country who converged on the Sunshine Coast for the 29th Australian Turfgrass Conference and Trade Exhibition in the last week of June.

So often at the mercy of the weather, the aptly named Sunshine State turned it on for more than 320 conference delegates. Despite more than 200mm falling the week before the event and the rain setting in again as delegates departed, the sun shone on Novotel Twin Waters Resort as the conference ventured to the Sunshine Coast for the first time.

On top of the 328 fully registered and day delegates (a somewhat fitting number given the conference was being held in couch country), representatives from 55 trade companies ensured that the sold-out, two-day trade exhibition was highly productive. More than 220 visitors rolled up to visit the trade exhibition on top of those already registered as conference delegates.

The week also proved critical for other golf and turf industry associations, with the Australian Golf Industry Council, National Turf Education Working Group and Society of Australian Golf Course Architects all holding meetings.

POPULAR PRESENTERS

After his successful debut in Australia at the 2010 Gold Coast conference, Dr Thom Nikolai returned Down Under in 2013 as keynote speaker thanks to the sponsorship of Jacobsen. Along with renowned golf course photographer Gary Lisbon, they conducted separate day-long, in-depth seminars as part of the inaugural Jacobsen sponsored workshop series, one of many well-received format changes made to this year's conference.

With the switch of the Toro AGCSA Golf Championships to the much more convivial midday start on the Sunday (another change that proved popular), that freed up Monday for the workshops which the AGCSA hopes will become a regular feature of conferences to come. Indeed, such was the popularity of the workshops, in the weeks following the conference Jacobsen confirmed its intention to continue its sponsorship of them in 2014.

Conference organiser and AGCSA events and education manager Simone Staples was delighted with the venue and format changes made this year and hopes delegates got more bang for their buck than in previous years.

"When we took the conference to Moama back in 2005 we received many comments that even though numbers were smaller it was one of the best due to all the delegates being together in the one location," explains Staples.

"That was the premise behind choosing Novotel Twin Waters Resort. We were able to hold all education sessions, the trade show and the popular social functions all within the one complex and looking at the feedback so far the concept has again proven very popular.

"We were also very mindful of making the conference better value for money especially given the tough economic times that some clubs are facing. By switching the golf to Sunday we were able to include an extra full day of education for the same registration price as previous years."

As this edition was going to print, Staples had just sent out the post-conference survey to delegates and sifting through some of the early feedback the general trend was overwhelmingly positive in regards to the venue, presenters and conference format.

This year's conference contained a wide variety of topics – from HR management to warm-season grass management (the conference was in Queensland after all), a look back on some of the top 10 innovations to impact the golf and sports turf industries over the past 25 years, through to vegetation and tree management, golf course biodiversity and the ever-topical chemical use management.

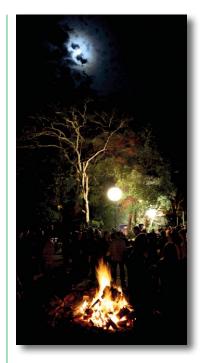
In a departure from his usual presentations focusing on agronomic issues, the ever popular and highly respected John Neylan presented two contrasting talks. The first looked at the various online tools turf managers can use to research for turf information on the Internet, while the second one focussed on the importance of good recordkeeping and good governance that turf managers must employ if they are to effectively manage their facilities.

In response to delegate feedback, the Sunshine Coast conference also contained a wealth of local course superintendents and turf managers presenting on their courses and works. Among the roll call this year were Queensland based superintendents Dr Brett Morris (Brisbane Golf Club), Robin Doodson (Sanctuary Cove) and Ben Tilley (Headland Golf Club) who looked at various aspects of managing their courses in Queensland and the challenges they have faced or are facing.

Industry stalwart Pat Pauli talked about the ongoing saga that is the moving of Horton Park Golf Club to a new course currently being constructed. From the sounds of it there will be plenty more to talk about this project at future conferences given the challenges being faced already with the new construction.

In her typical professional and entertaining manner, Sharon Kaibel rounded out this year's conference with yet another impressive presentation on HR management and the importance of teamwork. Kaibel's ability to relate to her audience and engage effortlessly while at the same time ramming home some very timely advice, meant she rivalled Dr Nikolai as one of the conference standouts.

But it was the good doctor from Michigan State University who again stole the show and, like his compatriot Dr Frank Rossi last year, Aussie turf managers love a Yank who not only knows it all but also knows how to enjoy himself. Some of the comments from delegates included: "Dr Thom Nikolai is always a favourite; I never get bored listening to him. Green speed is an issue at my club and his (talk) was very appropriate." Another delegate noted, "Dr Nikolai was excellent and so was Dr Jim Hull; both guys knew their topics and could hold the group's attention while still giving great advice."



The Bayer Welcome Reception (above) and hawkers beach market night (below) utilised some of Twin Waters' unique settings



HR expert Sharon Kaibel's ability to engage effortlessly with her audience while at the same time ramming home some very timely advice, meant she was again one of the week's standout speakers



Conference principal partner Toro was again front and centre during the week

Former NSWGCSA president Craig Molloy speaks during the wellattended chemical use forum





Indeed, Sydney based turf consultant Dr Jim Hull's presentation on interpreting soil test results was signalled out by many as one of the Golf stream's highlights. In his usual no-nonsense approach, Dr Hull gave most in the room plenty of food for thought about how they approach soil testing and he was not shy in putting some heat back on the industry's trade representatives.

Although numbers were small this year, the post-conference Turf Tour provided a fascinating insight into three very different Sunshine Coast turf facilities. Pat Pauli took the group of 10 around the new Horton Park Golf Club site and elaborated on some of the challenges that are already being encountered with the construction of the new course.

From there the tour headed to Pelican Waters Golf Club south of Caloundra where host superintendent Troy Muir showed the group around his course and some of the challenges he has in maintaining it. Having spent much of his career at

Pelican Waters, Muir has seen staff numbers drop from a high of 22 down to his current crew of nine.

The final stop on the tour was Stockland Stadium, the Sunshine Coast's premier multipurpose sporting complex located in Kawana. STA QLD committee member Brian Perrin, one of just three who maintain the vast facility, gave a wonderful insight into how they manage the grounds and the punishing schedule of local, state, national and international matches across a variety of codes.

BRADBERY TOPS WINNERS LIST

With the AGCSA Board deciding not to bestow the Distinguished Service Award this year, the focus of this year's AGCSA Awards ceremony fell very much on the recipient of the AGCSA's longest standing award – the AGCSA Excellence in Golf Course Management Award, presented in partnership with John Deere.

In the end it was Manly Golf Club superintendent Michael Bradbery who etched his name next to a long list of high achievers, collecting the honours for his significant part in overseeing the major \$15.7 million redevelopment of Manly course between 2009-2012 (see this edition's lead story, pages 6-13, for a full rundown on the project).

As a prize for winning the award, Bradbery will now, courtesy of John Deere, travel to the US to be a part of tournament preparations for the PGA Tour's John Deere Classic held at TPC Deere Run in Illinois. As anyone who saw Colin Morrison's presentation at the conference would attest (Morrison won the same award back in 2011), Bradbery is in for one unique experience.

In a slight departure this year, the 2013 AGCSA Claude Crockford Environmental Award, presented in partnership with Bayer, went to an organisation instead of an individual. The NSW Golf Course

Superintendents Association was recognised for the establishment of an environmental minimum standard for its members in response to recent investigations by the NSW EPA into chemical use. Former NSWGCSA president and now Shortland Waters Golf Club general manager Craig Molloy, a key driving force behind the creation of the standard, was on hand to accept the award.

The Toro sponsored AGCSA Graduate of the Year Award and STA Sports Turf Graduate of the Year Award went the way of Luke Jorgensen and Andrew Spicer respectively. Jorgensen became the fourth winner of the AGCSA award to hail from Canberra's Federal Golf Club, while Spicer became the STA NSW's first ever winner of the STA national award (see more on the graduate winners on page 16).

WA'S DAY

While the AGCSA Award winners were celebrating at the end of the week, Royal Perth Golf Club course superintendent Michael Dennis got his conference off to a flyer on the Sunday when he broke through for his maiden Toro AGCSA Golf Championship title at Twin Waters Golf Club. And he did so in emphatic style, shooting the lowest winning total in the event's history.

Contested on Gary Topp's immaculately presented course, the accomplished Western Australian state amateur team captain, playing off



+3, shot a four-under 68 to comfortably slip into his first Toro Red Jacket by a resounding four shot margin.

The win was somewhat overdue for Dennis who despite collecting some of WA's premier amateur titles in recent years, including back-to-back wins in the Paxton Averages Trophy, had narrowly missed

CONTINUED ON PAGE 52

Sean Stuchbery (Bundaberg Golf Club, left) and Sheldon Simmonds (TIS) get into the spirit of the Aussie themed Bayer Welcome Reception





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CONFERENCE 2013

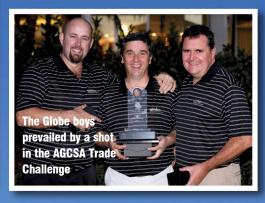
The Sunshine Coast turned it on for the 29th Australian Turfgrass Conference and Trade Exhibition and proved a huge hit with the more than 320 delegates. ATM takes a pictorial look at the week at Twin Waters.

All conference photos can be viewed on the AGCSA's Flickr page www.flickr.com/photos/agcsa





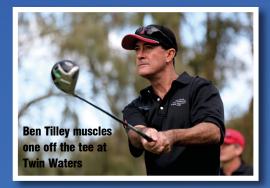
Former Eels champion Nathan Hindmarsh was guest speaker and player at the Toro AGCSA Golf Championships

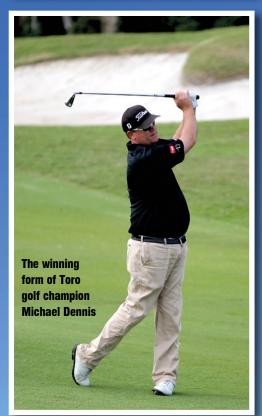


Twin Waters turns it on





















alian rasi

Royal Perth shotmaker Michael Dennis broke through for his first Toro Red Jacket at Twin Waters



Pelican Waters superintendent Troy Muir (right) discusses his management practices with delegate Josh Straub

CONTINUED FROM PAGE 49

out on the AGCSA title on two previous occasions. In 2011 at Kooyonga Golf Club in Adelaide, Dennis was part of a four-way playoff but was knocked out after the first playoff hole, while in 2006 he finished in a tie for second at North Lakes Golf Club.

This year, however, he wasn't to be denied and carded seven birdies and three bogeys en route to his victory over playing partner Brett Woodward (Armidale Golf Club, NSW) who posted an even par 72. Defending champion Scott Fogg (Queanbeyan Golf Club) finished third on 73, while Anthony Toogood (Commercial Club Albury), David Hobday (South West Rocks Golf Club) and Brett Balloch (Anglesea Golf Club) tied for fourth with 76s.

Dennis's front nine began in great fashion with a birdie on the opening 502m par 5 1st, however, back-to-back bogeys on 2 and 3 had him quickly back at one over and trailing Woodward by a shot. Birdies on 5, 6 and 8 (the hardest hole on the course) saw him make the turn 2 under and with two further birdies on 12 and 14 took he was effectively home. Despite a dropped shot on 16, Dennis went on to birdie the last to restore his four shot advantage and claim the title.

Dennis's sublime round saw him anchor the Western Australia team which collected its first AGCSA state team title. The WA team of Dennis, Idris Evans (The Western Australian Golf Club), Darren Wilson (Wembley Golf Complex) and Doug Rowe (Busselton Golf Club) posted 98 points to win by three from the Queensland team of Dave Morrison (Windaroo Lakes Golf Club), Charlie Giffard (Indooroopilly Golf Club), Lincoln Coombes (RACV Royal Pines) and Danny Beresford (Toowoomba Golf Club).

The AGCSA stableford trophy remained in Queensland for another year after Townsville-based curator Paul Sanson (Tony Ireland Stadium) posted 38 points to prevail by one point from City of Kalgoorlie turf manager Paul Mofflin. Sanson,

playing off a 14 handicap, had a day to remember, shooting 17 points on the front nine (which included a wipe on the 6th, his opening hole) before coming home with 21 points. His round included seven three-pointers.

Nearest the pins went to Robin Doodson (Sanctuary Cove G&CC) and Toogood, while Murray Downs assistant superintendent Nick Launer smashed the longest drive. Matthew Fealy (Charlestown Golf Club) and Toogood claimed the days only 2s, Toogood's coming on the monster 202m par 3 17th.

The AGCSA Trade Challenge, held on the Monday at Twin Waters, went the way of the Globe Australia team comprising Kevin Booth, Mark Dougherty and Jeff Bowtell, which beat the AGCSA team of Doodson, Andrew Peart and Brett Robinson by a point. Toro's Mark Johnson won the individual trade title.

SIGHTS SET ON GOLD COAST

At the conclusion of this year's event it was announced that the 30th Australian Turfgrass Conference and Trade Exhibition will return to the Gold Coast which hosted the event with much success back in 2010. As well as notching up the big '30', next year's conference will also coincide with Toro's 100th birthday celebrations and plans are already well underway for some special events.

The 2014 conference will be held from 22-27 June at the Gold Coast Convention and Exhibition Centre in Broadbeach. Put it in your diaries now and stay tuned to the AGCSA website and The Cut email newsletter towards the latter part of 2013 for more details.

The AGCSA Board and staff wish to thank all delegates, speakers, trade representatives and principal sponsors Jacobsen, John Deere, Rain Bird, Syngenta, Toro Australia and Horticulture Australia Ltd for their support of the Twin Waters conference and look forward to seeing you all again when we return to Queensland in 2014.





PARTNER RECOGNITION PROGRAMME

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Thank you to all the partners who help the AGCSA provide members with the greatest programmes and services the industry has to offer.















































The Ohio Program has provided a career kick-start for many up and coming Australian greenkeepers and for former Sunshine Golf Club apprentice Simon Rees it has taken him to Congressional and TPC Scottsdale.





It wasn't long after that I heard about The Ohio Program (TOP) during my studies at The Gordon Institute in Geelong and being told it was a good option for anyone who was willing to work hard. During my third year, past intern and now programme representative David Goldie gave a presentation to the class. I was hooked instantly and within a matter of an hour I had filled out my application.

naturally, appealed.

Once submitted, everything happened pretty quickly. It wasn't long before TOP director Mike O'Keeffe informed me of my placement at Congressional Country Club, in Maryland, Washington DC, just one of the many amazing courses the programme has sent interns to over many years.

I remember heading to work in February 2012 (I had since started at Eynesbury Golf Course west of Melbourne) to do some afternoon watering when I received a call from Alan Newstead from the Australian Golfing Fellowship of Rotarians. He informed me about the John Hood AGFR Memorial Scholarship which provides financial assistance to young people aged 20-29 who have completed a greenkeeping apprenticeship.

My first response was 'ls this a joke?' but after later meeting with Alan who informed me more about the scholarship and what was required of me, I had no problem getting on board. The scholarship, worth \$4500, has helped to fund all of my expenses in getting over to the US which has been a huge help.

CONGRESSIONAL

In late March 2012 I arrived in Columbus, Ohio for an induction into TOP with a bunch of other interns and trainees from all parts of the world. We spent two days touring the Ohio State University which was a city in itself before we all moved on to our placements.

I arrived in Washington DC to find that I would be living literally 100 feet from the maintenance facility which certainly made the 5am starts a lot more bearable. I was instantly thrown into course set-up, hand-mowing and spray application tasks within the first few days of arrival.

Spraying would become a trend for my placement. Due to Congressional's 100 per cent preventative fungicide programme, I completed 60-plus spray applications during my six month internship. Congressional has bentgrass fairways and tall fescue rough and the heat and humidity was a constant. We were watching greens with hose in hand each and every day until late afternoon just to ensure plant survival given the stresses the greens were put under.



The use of soil probes and moisture sensors ensured moisture levels were kept at optimum levels; too low and you could potentially lose a green in an hour, or if too high the high humidity would allow fungal spores to frenzy. It was standard to be watching your surfaces, whether it be nine greens or tees and fairways, until the sun went down. The north east American summer really kept you on your toes and there was no room for shortcuts!

While at Congressional I was involved in two full course renovations. We would use hollow tines at varying sizes for each surface and with only a five day window to have the course renovated, cleaned up and ready for play, it wasn't uncommon to work until dark each day. We routinely went out with solid tines and hydroinjection units throughout the season to promote deeper root growth as well as firming the surface.

In the final week of June 2012 Congressional hosted the AT&T National PGA Tour event. My duties included cutting the back nine pins and setting tee markers in the mornings, hand watering on the second course throughout the day before maintaining bunker moisture on the back nine and setting up the practice facility for the next morning.

We completed a greens application on the Tuesday, as taking a week out of the fungicide and regulator programme would bring enormous disease pressure and unwanted growth at the end of the week. By Thursday we were very confident in the

course playing the way we wanted it to and with the winner (Tiger Woods) only shooting 8-under after 72 holes, the course played very close to its potential.

Unfortunately Mother Nature didn't want us to have too easy a time and on Friday night the course was hit by hurricane-strength winds which brought down 60 established trees and made a mess that had to be seen to believe.

Course director Mike Giuffre and one of the mechanics were down at the workshop from 2am onwards with chainsaws in hand removing tree trunks blocking access to the office. Tree removal companies were brought in that morning to assist the crew removing debris from within the ropes to try and get the third round underway. We managed to clean up as much as possible to allow groups of three to tee off on holes 1 and 10 by 1pm.

The initial debris clean up, the tournament itself and keeping turf alive in the challenging conditions saw us clocking up 180-plus hours for the advance week/tournament week fortnight. Also, because there was a 10-day power outage in our dorm following the storm, we became the first ever interns to stay inside the Congressional clubhouse hotel rooms. It was an amazing effort and incredible to be a part of.

TPC SCOTTSDALE

Once the weather started to ease up and with the season coming to a close, I was allowed time to get around and have a mini-vacation with the money I had saved. At the same time I was in contact with Mike O'Keeffe organising my next placement at TPC Scottsdale in Arizona.

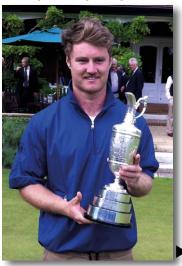
I got in touch with another Ohio intern heading to Scottsdale and we decided to drive across the country. Some 4000 kilometres and seven states later, we arrived in the heat of the Sonoran Desert. After organising an apartment to live in, it was straight down to business as we arrived in the middle of a full course overseed, an expensive practice that had to be carried out with precision. We then had three months to get the surfaces up for the PGA Tour's Waste Management Phoenix Open at the end of January, 2013.

Getting to the South and working on a course like TPC Scottsdale opens your eyes to a whole different set of challenges. The oversown surfaces were only just establishing in the dry, desert heat so watering and fertilising was a must. It was such a contrast moving from minimising all growth to promoting as much as possible. Adding to the challenge was the extremely saline irrigation water which meant greens needed to be flushed weekly.

With next to no humidity, disease pressure was almost non-existent. In the spray room we would go out with fungicide on a 21-day day cycle to control rapid blight, a microbial disease that had made its way down from Oregon in a bad seed batch a few years prior. As the surfaces developed and the weather began to cool, we were fertilising with high

Starting March 2012, Simon Rees undertook an Ohio internship which took him to Congressional and TPC Scottsdale in the US. Pictured left is the 16th hole at TPC Scottsdale which is transformed into a spectacular stadium hole (far left) for the PGA Tour's popular Waste Management Phoenix Open

Rees holds the Claret Jug after Sunningdale recently hosted the International Final Qualifier for the 2013 Open Championships





Above: Rees outside Congressional's famous six storey clubhouse

Middle: An impressive aerial view of TPC Scottsdale's closing holes during the 2013 Waste Management Phoenix Open. More than 179,000 spectators crammed the course for the third round, breaking attendance records for a single day sporting event

Rees sprays the Gold Course's *Poa annua* greens at Congressional

nitrogen and iron weekly, as well as a turf pigment used to absorb heat as the overnight frosts slowed growth immensely.

The Waste Management Phoenix Open rates as one of the PGA Tour's biggest events and shortly after my arrival the tournament build began. Massive grandstands were erected around holes 15-18 including the par three 16th which was completely surrounded, tee to green. Although being able to hold literally thousands of spectators, the grandstands did create a few issues for the turf. The cold weather created constant wet conditions while air circulation was understandably minimal.

With a record cold stretch and annual rainfall levels reached very quickly, it was a struggle to achieve good surface firmness and coverage. Kiln dried sand, consisting mostly of fines, was used weekly to try and lock the top layer of the surface and a coloured sand mixture was used to hide ball mark blemishes.

Bunker surrounds were not overseeded, with the couchgrass allowed to go dormant. The selective herbicide Diquat was also used which causes the green leaf tissue in couch to turn a contrasting



golden colour. The same process was employed on the spectator mounds and tee surrounds, creating a real prominent border which defined the highly manicured playing surfaces.

In the lead-up to the Open, frosts that would last hours really made tournament surface conditioning difficult, not to mention the TPC network's highest played public course had golfers lining up in droves each and every morning. Any spare time we did have was spent in the desert areas edging, weeding and refurbishing ruts and washouts, as well as bunker depths being corrected only for flooding (on multiple occasions) to occur and ruin all our hard work. A downpour on the Sunday of advance week rendered all firmness and surface moisture data we had been collecting in the lead-up useless and really made playability much easier.

During tournament week I double cut greens on the front nine of a morning and back nine tees and approaches each afternoon. Getting the chance to cut inside the 16th stadium hole in front of thousands of people was quite an experience – it's not often in this industry you get heckled and cheered while you work!

Despite some frost delays slowing play, the tournament was a huge success with local hero Phil Mickelson shooting 28-under to lead from start to finish. Fans turned up in huge numbers each day and the 179,000-plus crowd on the Saturday broke records for a single day sporting event attendance. An interesting fact being thrown around was that on that Saturday TPC Scottsdale become the fifth highest populated town in Arizona!

After the tournament I had the chance to head to San Diego for the Golf Industry Show where I was fortunate enough to accept another scholarship, this time from Syngenta. The show was incredible and with Syngenta hosting us and their high profile





clients for the evening, it was an amazing chance to network with a lot of respected people from within the industry and across the world.

After the show it was back to TPC Scottsdale for the all-important transition period and maintaining as much healthy plant life as possible for the upcoming heat of summer. Greens were solid tined and fairways verticut weekly to cause enough heat stress on the cool-season grasses, which wasn't as easy as it sounds with the high fertiliser rates put out over the winter and the perfect growing conditions; we were literally out bailing hay.

Due to the perfect weather and popularity of the course, fairway aerification had to be completed each morning ahead of play. It was a difficult operation, but the well organised staff managed to get through without causing much delay.

UK BOUND

With my time at TPC Scottsdale and The Ohio Program coming to an end, I got back in touch with Mike O'Keeffe about what the best decision was for my career and he advised I make the move to Sunningdale Golf Club, a magnificent 36-hole facility south west of London, UK. I started there in late April 2013 just as renovations were beginning which involved scarifying tees and fairways, solid tining greens and topdressing fortnightly.

The site naturally has a sandy loam profile much like the sandbelt in Melbourne and is able to handle the constant wet weather. Summer highs in the mid-20s allow the cool-season grasses to thrive so surface conditioning is relatively simple with greens being cut and rolled on alternate days. The use of soil conditioners and seaweed extracts are preferred as opposed to high nutrient fertilising and growth regulators to focus on turf health, soil condition and a natural slower growth.

At the end of June, Sunningdale hosted The Open Championship International Final Qualifier. Due to the 100-year-old surfaces being tournament ready almost overnight, the focus in the lead-up to the event was mostly on detail works - bunker edging, string trimming hazards, blanket divotting fairways and resurfacing player walkways - which were completed in between the regular cutting and surface preparation.

Being at Sunningdale has given me the chance to work alongside six other past Ohio graduates as well as some of the UK's best greenkeepers. All but two of the 27 on staff between both courses are turf certified so there are lessons to be learnt each and every day.

ACKNOWLEDGEMENTS

I cannot speak higher of Mike O'Keeffe and The Ohio Program and the learning opportunities that have been awarded to me. I am thankful to both the Australian Golfing Fellowship of Rotarians and Syngenta for the help I received in getting to the USA and to the hard working superintendents and directors I learnt so much from.

My time in America allowed me to not only learn more about this industry from a high end/tournament perspective, but to learn more about myself and the type of person/professional I am going to strive to become. It was a truly life-changing experience.

For more information about the John Hood AGFR Memorial Scholarship visit https://www.agfr.org/ and for more information about The Ohio Program contact Mike O'Keeffe at okeeffe.1@osu.edu 44



AT&T National PGA Tour event



A 3-tonne road roller was used for pre-tournament firming of greens, approaches and fairways at TPC **Scottsdale**

Fairway mowing PGA Tour style at Congressional – 24 triplexes!



Anterior cruciate ligament injuries have dominated the headlines in the early part of the 2013 AFL Premiership season. 2011 AGCSA Distinguished Service Award recipient Phil Ford recently completed his PhD thesis looking at ACL injuries and what, if any, role turf species has on the occurrence of such injuries.



ACL injury in football



njury to the anterior cruciate ligament (ACL) of the knee has been described as the most serious injury in world football. Ruptured ACLs don't self-repair so surgery is nearly always required and has been witnessed in the opening eight weeks of the 2013 AFL Premiership, 15 players have had their seasons ended prematurely.

Research out of the United States shows that recovery time from an ACL injury in the National Football League (NFL) averages 56 weeks, with between 20-37 per cent of those sustaining such an injury never returning to their team (Carey et al., 2006; Shah et al., 2010). ACL injury is the most common cause of a premature end to a sports career (Gillquist & Messner, 1999).

ACL injury involves a high risk of concurrent secondary injury (e.g.: medial ligaments) and once injured there is a high risk of further knee injury on return to football and of knee degeneration later in life. Anyone who has done an ACL will be well aware of many of these facts.

Despite its importance, very little progress has been made in reducing ACL injury in football, although the NFL did manage to halve ACL incidence in the 1980s, largely because of medical screening to avoid drafting vulnerable players (Nicholas, Rosenthal & Gleim, 1988).

ACL injuries in the Australian Football League were responsible for 8.9 per cent of missed games



players such as Taylor Walker (Adelaide), Alan Toovey (Collingwood) and Greater Western Sydney key forward and top draft pick Jonathon Patton among those already sidelined.

About 75 per cent of ACL injuries are noncontact in nature and mostly occur at relatively slow running speeds, with the player decelerating or propping as part of a pivot (sidestep) manoeuvre. The injury occurs within less than a quarter of a second of footplant in the manoeuvre (Grund et al.,

Because the injury is so commonly associated with the pivot manoeuvre, suspicion is naturally aroused that ground conditions are involved. In particular, excessively high grip between the shoe and the surface is thought to restrict the ability of the foot to rotate when the body is rotating, which then transfers excessively high torsion to the knee (Chivers & Orchard, 2008).

There is actually no consensus in the medical literature that traction is linked to ACL injury at all. In five major recent reviews of ACL injury risk factors in sport, very little or no attention was paid to bootsurface rotational traction (Alentorn-Geli et al, 2009; Boden et al., 2010; Griffin et al., 2006; Serpell, Scarvell, Ball & Smith, 2012; Shultz et al., 2010).

It is entirely possible that ACL injury risk factors are intrinsic and that the effect of bootsurface rotational traction is inconsequential. Over 30 intrinsic risk factors have been implicated in ACL injury, including familial tendency and genetic factors, previous injury, Body Mass Index, fatigue, over-dominant quadriceps muscle compared to the hamstring, poor technique including excessive knee valgus or low knee flexion on footplant, and many other factors.

In short, there is no general agreement on ACL injury mechanisms and risk factors. In fact the title of one recent research paper sums it up quite aptly: 'The ACL Injury Enigma: We can't prevent what we don't understand' (McLean, 2008).

NEW FROM

Left: Hawthorn's Matthew Suckling tears his anterior cruciate ligament during the Hawk's round three NAB Cup fixture against Richmond in March. The preseason and first eight weeks of the 2013 season saw a significant number of AFL players (15) suffer season-ending ACL injuries

Far left: A community-level football field in Ballarat, 2009, During the recent drought experienced in Victoria, most of the perennial ryegrass on unirrigated fields was killed. The surviving plants were widely spaced, with hard, bare ground in between. Note the natural invasion of common couch was able to survive intact

averaged over a 10 year period, ranking third after hamstring injuries and groin injuries (Orchard & Seward, 2009). The average number of ACL reconstructions per year in the AFL is 13.9, but the number is very variable and ranges from a low of 7-8 per year up to 20-21 per year (Orchard, Seward & Orchard, 2011).

2011 and 2012 were bad years for the AFL and 2013 isn't looking any better, with high profile

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There are several devices in use around the world to measure rotational traction, but the most commonly used is the studded boot apparatus



TURFGRASS AND BOOT FACTORS

Despite the uncertainty regarding the role of grip, there are some reports dating back to the 1940s linking ACL injury to excessive rotational traction, so it is prudent to assume that there is some risk. There are two factors influencing the grip experienced by players – turfgrass factors and boot factors.

A landmark research programme conducted by Dr. Joseph Torg and colleagues in Pennsylvania in the early 1970s showed that knee injuries were reduced by an average of 78 per cent when players wore boots with 9.5mm long studs and a peak torque of 38Nm, compared to when wearing boots with 19mm studs and a peak torque of 74Nm.

Several other studies in the US were able to show a similar link between boot peak torque and the incidence of knee injuries (e.g.: Bonstingl, Morehouse & Niebel, 1975; Mueller & Blyth, 1974; Lambson, Barnhill & Higgins, 1996; Scranton et al., 1997). In nearly all of those papers, boot-type was the focus of study.

In contrast, the Australian ACL research has largely ignored boot type and focussed on the turf surface. After a particularly high number of ACL injuries in 1997, a study was initiated by the AFL. In the early results, low rainfall in the previous year and high evaporation in the previous month were identified as significant ACL injury risk factors (Orchard et al., 1999; Orchard, 2001; Orchard, 2002).

There were trends for higher ACL injury on harder grounds and on couchgrass compared to perennial ryegrass. There was a bias towards more ACL injuries early in the season and on venues in the northern states (Orchard, Chivers & Aldous, 2005; Orchard et al., 2005; Orchard, 2005). These findings supported a hypothesis that couchgrass dominance was the major risk factor for ACL injury, as couch was more likely to dominate swards in low rainfall, high evaporation periods and early in the season, and in northern cities.

Yet when AFL grounds were objectively assessed for traction over the 2004 season, Chivers, Aldous and Orchard (2005) found no significant difference in rotational traction between early and late in the season, or between northern grounds and southern grounds. Despite this, Orchard et al. (2008) were adamant that couchgrass "...has been shown to lead to higher ACL injury risk levels than ryegrass" (Orchard et al., 2008, p188) and recommended that "if it is possible to use ryegrass in the profile of a football field then this should be done" (Orchard, 2005, p163). They also commented that oversowing couchgrass with perennial ryegrass was likely to create lower shoe-surface traction (Orchard & Powell, 2003).

Orchard argued against players being forced to wear low-traction boots as they would not want to risk falling, whereas making changes to the playing surface would lead to a universal reduction in shoe-surface traction affecting all players (Orchard, 2005). This advice has largely been followed by AFL venues, but unfortunately there has been no reduction in ACL injury incidence or prevalence since (Orchard, Seward & Orchard, 2011).

Although aimed at the elite football venues, the recommendation against couchgrass reduced its adoption in community-level football. When the 1997-2009 drought and subsequent water restrictions came in, most of the perennial ryegrass on unirrigated fields was killed. The surviving plants were widely spaced, with hard, bare ground in between, as seen on the right hand side of the photo on page 54. On the left hand side of the photo, a natural invasion of common couch was able to survive with an intact sward.

My research, conducted as part of a PhD thesis through the University of Ballarat, has shown that, in the absence of irrigation on a compacted clay soil during drought, the presence of an intact sward of grass kept Clegg hardness to a maximum of around 160 gravities (g). Without turfgrass coverage,

however, the Clegg values reached 250g as the soil dried out (see Figure 1, page 58).

While this difference might not seem dramatic, it could make the difference between a droughted field being closed or kept in play. A Clegg value of 160g would be considered acceptable in many locations such as Queensland where the absolute upper limit for play was suggested as 200g (McAuliffe & Roche, 2009). In southern Australia, a Clegg threshold value of 120 g has been commonly adopted, but that was based on a recommendation for elite level football (Chivers & Aldous, 2003), not community based football.

So, being able to sustain an intact sward of grass could keep a community-level football field in play during drought. That could only be achieved using a drought-resistant species such as couch or kikuyu, which brings us back to the problem reported by Orchard and colleagues that there is a higher risk or ACL injury with couchgrass, due to its lateral growth habit and higher thatching tendency, hence a greater tendency to "trap players' boots preventing the free rotation of the foot and placing more stress on the knee ligaments" (Orchard et al., 2005, p708).

However, the rotational traction of couchgrass had never been compared to perennial ryegrass in replicated plots controlled for age, soil moisture and thatch depth. Our research at the University of Ballarat attempted to fill that gap.



RESEARCH

There are several devices in use to measure rotational traction, but the most commonly used is the studded boot apparatus (SBA). This device uses a steel disc fitted with six football studs and a torque wrench. The torque wrench measures the peak torque at which the studs tear free in the turf, in Newton metres (Nm). Chivers and Aldous (2003) nominated SBA traction values for AFL fields as:

- Unacceptably low (less than 20Nm);
- Low-Normal (21-39Nm);
- Preferred range (40-54Nm);
- High-Normal (55-74Nm); and
- Unacceptably high (greater than 75Nm).

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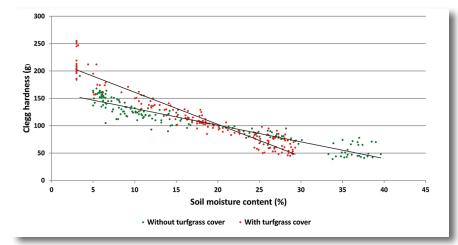
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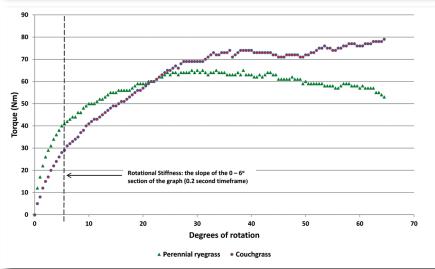
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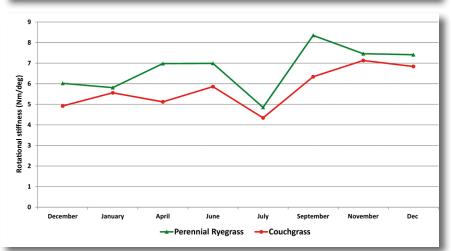


Figure 1 (top): The relationship between soil moisture and Clegg hardness readings in 'with grass' and 'without grass' plots

Figure 2 (middle): Typical torque vs rotation curves for couchgrass and perennial ryegrass

Figure 3 (bottom): Comparison of average rotational stiffness of couchgrass and perennial ryegrass

The recommendation for football in Queensland is between 30-50Nm (McAuliffe & Roche, 2009).

The SBA is very unreliable between operators, however (Twomey et al., 2011). In Queensland, Les Zeller built an Automated Turf Tester based on the SBA but with an automated drop, rotation and data collection process to improve reliability (Zeller, 2008). In 2010 he built a similar device for the University of Ballarat.

A key feature of Zeller's device is the ability to measure and graph how torque builds up as the rotation proceeds (see Figure 2). This build-up is termed 'rotational stiffness'. In my thesis, this is defined as the slope of the torque vs rotation curve in the first six degrees of rotation which takes 0.2 seconds. The biomedical evidence shows that an ACL injury occurs very quickly, within 0.25 seconds of foot strike (Grund et al., 2010), so my thesis argues that rotational stiffness is a much more relevant indicator of rotational traction and ACL injury risk than peak torque.

As shown in Figure 2, peak torque only occurs quite late in a rotation, long beyond the period at which the ACL injury occurs, at around 50 degrees of rotation for the couch sample and around 28 degrees in the ryegrass sample. In this example, couchgrass has a peak torque of 79Nm, higher than perennial ryegrass (65Nm), but ryegrass actually has a higher rotational stiffness (8.5Nm/deg) than couchgrass (5.8Nm/deg).

As part of our trial work, the rotational traction of couchgrass was compared to perennial ryegrass in eight assessments over 12 months. The plots were uniform with respect to their age, the soil type, soil moisture, surface hardness and thatch depth. In summary, couchgrass consistently had a higher average peak torque than perennial ryegrass, but as Figure 3 shows, the average rotational stiffness of perennial ryegrass was always higher and on four out of eight assessments (Dec, April, June and Sept) it was significantly higher.

The conclusion from this trial was that there was no need to recommend in favour of perennial ryegrass and against the use of couchgrass for reasons concerning rotational traction. It could be argued that perennial ryegrass actually poses a higher risk than couchgrass, based on rotational stiffness, but it turns out there are other factors that affect rotational traction (and, potentially, ACL injury risk) to a much greater degree than species type. These will be discussed in a second article in the next edition of Australian Turfgrass Management.

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TORO'S 3550-D LIGHTWEIGHT FAIRWAY UNIT A REEL HEAVYWEIGHT



The new Reelmaster 3550-D fairway unit was one of the focal points of the Toro stand at the recent Australian Turfgrass Conference Trade Exhibition on the Sunshine Coast oro Australia has added a new option to its Reelmaster line-up of fairway mowers with the release of the new Reelmaster 3550-D mower. The lightweight 3550-D is gentle on turf, while still delivering a high level of performance and productivity.

At just 900kg in the base configuration, Toro claims that the Reelmaster 3550-D is the lightest fairway unit on the market (15-20 per cent lighter than comparably equipped competitive mowers). The lightweight design allows for gentle turns and minimises compaction and tyre tracks.

"Toro has developed the 3550-D with turf health in mind," says Mark Johnson, senior sales manager – golf equipment for Toro Australia. "The lighter weight means better floatation, which allows both warm- and cool-season fairways, along with other sensitive turf areas, to flourish. The DPA cutting units also deliver an outstanding quality of cut."

Johnson says that with a maximum mowing speed of 11.3kph, the Reelmaster 3550-D is about 40 per cent faster than the riding greens mowers sometimes chosen to achieve a light footprint. It also offers a 208cm width of cut, compared to the 149cm width of cut on a typical riding greens mower. "The higher speed and wider cutting swath allow operators to finish jobs faster, which is great for productivity," adds Johnson.

The Reelmaster 3550-D has five, 46cm cutting units for enhanced ground following over fairway undulations. They're a smaller version of Toro's dual precision adjustment (DPA) cutting units which are easy to adjust. Harder reel and bedknife steel retain a sharp edge up to three times longer to minimise the need and frequency of adjustment, backlapping and grinding, leading to healthier turf. Optional 56cm rear cutting units are available to achieve additional overlap if desired.

The Reelmaster 3550-D features a 24.8hp (18.5 kW) Kubota diesel engine. Optional accessories include a grass basket kit, cutting unit rollers, scrapers and bedknives, groomer with optional Broomer $^{\text{TM}}$ and powered rear roller brushes.

For more information about the Toro 3550-D fairway unit, contact Mark Johnson on 0437 810 802 or visit www.toro.com.au

SANCTUARY COVE RETAINS AUDUBON CERTIFICATION

Sanctuary Cove Golf and Country Club recently retained its designation as a Certified Audubon Cooperative Sanctuary through the Audubon Cooperative Sanctuary Program for Golf Courses (ACSP), an Audubon International program.

Newly appointed AGCSA Board member and Sanctuary Cove course superintendent Robin Doodson led the effort to maintain sanctuary status on the course with the recertification recognising the club's ongoing environmental excellence.

Sanctuary Cove was designated as a Certified Audubon Cooperative Sanctuary in 2002 and is one of 885 courses in the world to receive the honour. The ACSP, endorsed by the USGA, provides information and guidance to help golf courses preserve and enhance wildlife habitat, and protect natural resources.

"Sanctuary Cove has shown a strong commitment to its environmental programme," says ACSP director Joellen Lampman. "They are to be commended for preserving the natural heritage of the area by protecting the local watershed and providing a sanctuary for wildlife on the golf course property."

To reach certification, a golf course must demonstrate that they are maintaining a high degree of environmental quality in a number of areas including environmental planning, wildlife and habitat management, outreach and education, chemical use reduction and safety, water conservation and water quality management. Courses go through a recertification process every two years.

For more information on Audubon International visit www.auduboninternational.org.

TROPICAL TURFGRASS RESEARCH PROJECT WRAPS UP

The two-year Horticulture Australia Limited project 'Adaptation of Warm-Season Turf Grasses for Tropical Environments (TU09001)' has come to an end. The third and final inspection of the Mackay (Mackay Regional Botanical Gardens, QLD, pictured left) and Darwin (Wagaman Park, NT) trial sites was conducted in May by Matt Roche, director of Australian Sports Turf Consultants (ASTC).

Since 2011, both Mackay and Darwin have seen replicated trial sites containing up to 19 new and commercially available warm-season turfgrass varieties to determine the strength and weaknesses of each specie and variety under tropical conditions.



The Mackay Regional Botanical Gardens trial site

Snapshot data collected during the visit and detailed photographs can be found on the ASTC Flickr website. Earlier milestones can be downloaded from the ASTC website www.astcs. com.au and additional information can be seen on the ASTC Facebook page. The final report was submitted to Horticulture Australia Limited (HAL) on 31 May 2013. Following approval by HAL, it will be disseminated to voluntary contributors and made available for download from the ASTC website.

JACOBSEN CONDUCTS ECLIPSE 322 TRAINING SESSIONS

Jacobsen recently conducted a series of training events across Australia and NZ for customers using the latest hybrid technology in their Eclipse 322 greens mower. Jacobsen's customer support manager Glen Forsdike flew in from the UK to conduct the one-day seminars with the objective of providing end-users with a greater understanding of the technical aspects of the product.

In Australia, the two venues were Jacobsen dealer McIntosh & Son's facility in Redcliffe, WA and Bankstown Golf Club in Milperra near Sydney, which hosted the event organised by local Jacobsen dealer Proturf in partnership with Bernhard Grinders. In New Zealand, the training day was held at Power Turf's facility south of Auckland.

"I'm delighted with how (the seminars) went," says Forsdike. "They were really interactive sessions and we certainly put the guys at ease with the technology in terms of maintenance, set up and general fault finding to ensure that they get the best from the Eclipse 322's innovative features.

"The biggest positive I took away from the sessions was the high standard of technical ability and the experience of the staff responsible for the maintenance of the course machinery. It is a challenge a lot of courses worldwide struggle with."



Jacobsen's Glen Forsdike (left) explains some of the features of the Eclipse 322 to end users during the recent workshops



INDUSTRY APPOINTMENTS AND ANNOUNCEMENTS



FOSKETT JACOBSEN'S NEW AUSTRALIA, NZ REGIONAL MANAGER

Jacobsen has appointed Mike Foskett (pictured) as regional

manager for Australia, New Zealand and the Pacific Islands. Effective from 13 June, 2013, Foskett reports directly to Asia Pacific managing director **Alan Prickett** and will be responsible for all sales-related and business development activities in the territory.

Foskett joins Jacobsen after 19 years in the grounds care industry and 15 years of experience selling Jacobsen equipment. He began his career as a sales representative for WA-based McIntosh & Son and was then promoted to branch manager in Perth. Three years ago when McIntosh & Son created a stand-alone grounds care division, he was assigned the role of division manager.

"The appointment of Mike is another

step in our ongoing commitment to growing our brand and customer service in Australia, New Zealand and the Pacific Islands," says Prickett. "Mike is a consummate professional who joins us with the full backing of his former employers, McIntosh & Son. He will be offering enhanced support to the eight dealers we now have in the territory and his appointment clearly demonstrates that Jacobsen is committed to growing market share, not only in Australasia but across the Asia Pacific region."

EVERRIS, TURFCARE NSW JOIN FORCES



Everris (formerly Scotts) announced in June the appointment of Turfcare NSW as its new turf and amenity distributor in NSW. Established by **Shane Summerhayes** over 15 years ago, Turfcare NSW services the needs of NSW. ACT and Qld.

"The Everris range has been well regarded for a long time by the industry, and now with a focused distributor with stock in the shed we look forward to getting the message out about Sierraform GT, Sierrablen, Sportsmaster and the full Everris range," says Turfcare NSW area manager **Andy Stankovic**.

Summerhayes added that he is keen to now be supplying Everris turf brands in the market and is enthusiastic about the new opportunities with products such as ProTurf. The new ProTurf range contains a blend of Poly-S nitrogen, a unique compound granule and Polyhalite, a natural source of potassium, magnesium and calcium.

To contact the Turfcare NSW team call (02) 9684 6611, Shane Summerhayes 0425 280 300, Simon Cooper 0425 280 306 or Andy Stankovic 0425 280 301. Contact Everris 1800 789 338, (02) 8801 3300 or visit www.everrris. com.au

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Turf producers gather on the Gold Coast

Turf Australia recently held its annual conference on

the Gold Coast.



ritical business messages for turf producers Australia wide were delivered as part of 2013 Turf Producers Australia Conference held at the start of May. More than 100 delegates descended on the Gold Coast for the three day event which included a range of presentations and the ever-popular field day.

Turf Australia chairman John Keleher was delighted with the turnout and the amount of positive comments forthcoming after the event: "We have received a significant amount of positive feedback and look forward to building on this momentum with the 2014 conference to be held in the Sydney region," he said.

The speaker presentation day held on 2 May saw a number of topical presentations delivered by a wide array of industry experts. Among those speaking included:

 Jackie Furey, director of Bedrooms to Boardrooms, who discussed what makes family and staff members tick, how to work well together and how to respond rather than react to challenges in family run businesses;



- David Harland, managing director of family business experts FINH, who talked about succession planning and ensuring that a business moves onwards and upwards with the next generation;
- Rob Littlewood, Workwise Advisory Services, who provided advice on managing difficult staff and poor performance;
- Shane Holborn, director of Bioscience Australia, who updated delegates on current research and potential new market opportunities for turf as an erosion control measure;
- Eric Brouwer, general manager of Kesmac/ Brouwer, who looked at innovations in turf harvesting; and
- Matthew Bywater, marketing strategist with 4 promote, who discussed how to make sure marketing was personal and targeted.

Some of the key take home messages for delegates included:

- "Regardless of how many siblings your have - one, two, three or even four - the family dynamics is always very set and established from a very early age. But with a lot of communication and openness, if these siblings want to work altogether on the family business it can work."
 - Jackie Furev
- "Always take a stock of the skills in a family recognise and know how you can best use them in your family group. Take the direction and be educated as to how they can take the next step."
 - **David Harland**
- "What do you do as a manager to boost the performance of your workers? You need to think about the team as a family and how

TURF AUSTRALIA ANNOUNCES 2013 FUTURE LEADERS

cott Tramacchi (Sunset Turf, Qld) and Marcus Rogers (Turfco, NSW) had a conference to remember after being named as the 2013 recipients of Turf Australia's Future Leaders programme.

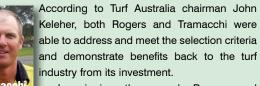
Born and raised on his family turf farm in Berry, NSW, Rogers has worked across all areas of production, but has a particular interest in growing and marketing. Tramacchi



owns and operates Sunset Turf which he set up with his wife Helen in 2010 after previously growing small crops. They currently have 7ha under production.

Rogers and Tramacchi

were among a strong field of finalists with the panel having to make a difficult call based on written applications and telephone interviews.



In winning the award, Rogers and Tramacchi now receive an industry-funded study tour to attend the Turf Producers International Summer Convention to be held in Chicago in late July.



Far left: The Turf Producers Australia Conference field day was held at Australian Lawn Concepts

Middle: The field day enabled delegates to see turf harvesters operating side by side

Left: The field day also included a turf pallet wrapping competition

you manage your children – employees from outside the 'family' are not all that different. Ask yourself, 'How do I discipline and motivate people (including my family staff members)' – it is vital to the future success of your business."

Rob Littlewood

 "The thing about social media is it is about now and being in the present. Being in the moment is vital – if you take an interesting picture that shows off your business, add it immediately to your website." Matthew Bywater

The highlight of the conference, and always

popular among delegates, was the field day which this year was held at Australian Lawn Concepts, home of Turf Australia chairman John Keleher. The day included machinery displays, topical presentations and a novel turf pallet wrapping competition which pitted state against state.

Within the machinery displays, many attendees took the opportunity to seek out company representatives, with a number of sales completed on the day. Having a particularly successful field day was machinery exhibitor K-Line, with its Australia-wide agent Turf the Lot selling a number of units.



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Sanctuary Cove's Robin Doodson lycras up for the recent Kokoda Challenge

ON THE MOVE

Allan Devlin: Resigned as superintendent at Secret Harbour, WA in July 2013.

Lee Goldie: From assistant superintendent to superintendent Shortland Waters Golf Club, NSW.

Cameron Hall: From superintendent Eastern Sward Golf Club, Vic to superintendent Northern Golf Club, Vic.

Paul Needham: From assistant superintendent Secret Harbour, WA to superintendent Kwinana Golf Club, WA.

Clint Raven: From assistant superintendent Yarra Yarra Golf Club, Vic to superintendent Heidelberg Golf Club, Vic.

The recent SAGCSA bus trip visited four golf courses in the Riverland region, including Berri Golf Club he 29th Australian Turfgrass Conference has been and gone and from all reports it was an outstanding success. ATM editor Brett Robinson will no doubt cover the proceedings in full elsewhere in this edition, but I couldn't write this and not compliment GCSAQ member and Twin Waters Golf Club host superintendent Gary Topp and his crew for the work they did in presenting their course in outstanding condition for the 2013 Toro AGCSA Golf Championships and AGCSA Trade Challenge.

Considering the near 200mm of rain the course received a week out from the event, the course was in amazing condition with perfect lies and firm fast greens that putted superbly. When you also consider the constant rain since January and the impact that has had on his maintenance programmes, the condition of the course was even more impressive. Well done Toppy!

The GCSAQ education day at Royal Queensland Golf Club has also been and gone and, like the conference, was a great success held in perfect Queensland weather. Mike Baker from Country Club International joined local reps Brendon and Brent demonstrating the recently installed Waste2Water washdown system at host superintendent Marcus Price's workshop. It was good to hear from the club captain who said that the money spent on the workshop area in recent times was a sound investment for the club.

We then adjourned to the clubhouse where Ashley Mead from Ogilvy Clayton Golf Design gave us a thorough account of the construction works and some of the interesting times they had along the way, as well as the process and thoughts behind

the design. A tasty lunch was followed by golf or a course inspection and it was certainly different to play the course armed with the background information that Ashley had provided. The playing surfaces presented by Marcus were first class and thanks are due to Country Club for their support of the day.

By the time you read this, four GCSAQ members will have completed the Kokoda Challenge which is hailed as Australia's toughest endurance event. It is a gruelling 4-person cross-country team event held over 96km.

The 'Smash That' team of Dave Morrison (Windaroo Lakes GC), Robin Doodson (Sanctuary Cove G&CC), Paul McLean (Nuturf) and Brent Robinson (Country Club International) put in some long and hard hours preparing for the trek which follows fire trails, crosses 12 creeks and climbs summits of 5000m. In addition to the physical challenge, teams also raised funds for the Kokoda Challenge Youth Program. The boys also had to don special clothing to protect them from the elements and as you can see in the photo left the lycra proved rather flattering for one team member!

The GCSAQ AGM is fast approaching and will be held at **Charlie Giffard's** Indooroopilly Golf Club on Monday 26 August with a morning shotgun followed by golf, lunch and a guest speaker. Toro will once again support the day and if you would like to join the committee and contribute to the association then please give me a call.

PETER LONERGAN PRESIDENT, GCSAQ

SAGCSA 🖈

he most recent SAGCSA event saw a group of 15 visit the Riverland region of SA. After leaving The Grange Golf Club in Adelaide, our first stop was Renmark Country Club where host superintendent Matt Milner explained how over the last 12 months they had replaced all 18 greens. The front nine were back in play, with the back nine just a few weeks away from opening.

After lunch we played a nine-hole Ambrose event and after a few refreshments headed for nearby Berri Golf Club where we stayed overnight. A very wet day greeted us as long-serving course superintendent Kym Traeger took us on a brief inspection around the Berri layout in between showers. From Berri we travelled to nearby Loxton Golf Club before finally stopping at Barmera Golf Club where we caught up with superintendent David Hastwell.

The next SAGCSA meeting will be our AGM in July at the sensational Kooyonga Golf Club. Host superintendent Steven Newell always has

Kooyonga looking fantastic so this event should be very well attended. We are also holding our education day in August so we can show our support to our sponsors, trade representatives and members.

I trust everyone who attended the annual conference at Twin Waters enjoyed the week.

BARRY BRYANT PRESIDENT, SAGCSA



NZGCSA (

he summer drought in New Zealand seems like a very distant memory as I write this having travelled around the country battling heavy rain in many areas and now looking outside at snow falling. Travel arrangements of many of the delegates to and from the recent New Zealand Turf Conference and Trade Show were disrupted, but the feedback on the event thus far has been very positive. On behalf of the NZGCSA I'd like to thank the sponsors, organisers, speakers and delegates for their part in making it a success.

We had the pleasure of the company, shared experience and knowledge of Richard Forsyth (aka Randy) from Royal Melbourne Golf Club, AGCSA general manager Peter Frewin and AGCSA president Peter Lonergan. The professional and social contributions of the AGCSA, the Australian superintendents and loyal trade supporters who crossed the 'Ditch' are always appreciated. I'd encourage you all to pencil in 15-17 June 2014 and come across for the North Island Fine Turf Seminar which will be held in the Bay of Islands in the far North.

The existing Board of the NZGCSA was re-elected at the AGM during the conference with the exception of departed president Ryan Irwin who has moved across to Australia. Thanks go to Ryan for his contributions and to Peter Boyd who acted as interim president until the AGM. The NZGCSA

- President: Brendan Allen (The Hills Golf Club)
- Committee: Greg Swafford (Titirangi Golf Club), Dane Hawker (North Shore Golf Club), Steve Hodson (Westown Golf Club), Gordon Trembarth (Hastings Golf Club) and Peter Boyd (Pakuranga Country Club).

The NZGCSA Awards winners were announced at the conference dinner. In an outstanding effort, Blair Dibley from Millbrook Country Club received both the 2013 NZGCSA Excellence Award, supported by John Deere, and the 2013 NZGCSA Environmental Award, supported by PGG Wrightson Turf.

The 2013 NZGCSA Graduate of the Year Award, supported by PowerTurf NZ/Jacobsen, went to Tony Woods from North Shore Golf Club. The quality of finalists for the awards was high and they can all feel justifiably proud of their work. We are grateful for the ongoing support and commitment of our major sponsors of these awards.

Powerturf NZ and Jacobsen, in association with the NZGCSA, also put together a post-conference road show to take Dr Thom Nikolai from Michigan State University to speak at both Christchurch and Cromwell in the south of NZ. Unfortunately this was badly affected by terrible weather despite the fantastic efforts of John Woodham (PTNZ) and Alan Prickett (managing director Asia Pacific, Jacobsen)

and their respective teams to try and get where they needed to be when roads were snowed in and flights cancelled.

A highlight of the conference dinner and awards evening was the presentation of the 2013 NZGCSA Distinguished Service Award to Brett Burgess (Boulcott's Farm Heritage Golf Club). Brett's commitment to and outstanding service for the golf turf industry over the years includes many years on the NZGCSA Board, including six as president. He has been actively involved in every regional association where he has worked and made a significant contribution to our training organisation.

Brett is highly regarded professionally and personally both in NZ and Australia and the way he is facing his current challenges and the example he sets for us all merely continues to reinforce just what a worthy recipient he is. His praise of his wife Karen and their family for the sacrifices they have made to allow him to give the time and effort he has, drive home just how important people like Brett are to our industry.



2013 NZGCSA Distinguished Service Award recipient Brett **Burgess**

BRENDAN ALLEN PRESIDENT, NZGCSA

e have just returned from another successful conference run by the AGCSA and we are very pleased to be associated with it. STA NSW thanks the AGCSA for its support of our association and commitment to bringing the industry together.

An exciting part of the conference is the announcement of the STA Sports Turf Graduate of the Year and we are extremely grateful to Toro Australia for their support and dedication to this award. We are very proud of the NSW candidate, Andrew Spicer, who won the title this year.

Andrew is a young guy with amazing dedication and passion for his work and we look forward to working with him and watching him develop in the years to come. Toro Australia will provide Andrew with a great experience as he will attend a Sports Field Forum in Australia later this year and then the US Sports Field Forum in June 2014.

On the home front we are gearing up for our seminar at WIN Stadium in Wollongong on Monday 26 August. We hope to see many new faces at this event as this is the first time we have taken our seminar to the NSW south coast.



2013 STA Sports Turf Graduate of the Year Andrew Spicer (middle) with STA NSW president Chris Chapman (left) and **Toro's Tim Emery (right)**

At the same time it is close enough for our regular members to have a day trip and enjoy the scenic coastal city of Wollongong.

The seminar will include presentations on staff management, weather forecasting, spraying techniques, fire safety in the workplace, turf management in summer, an insight into NRL grand final day as well as the usual machinery and equipment demonstrations. Full seminar details can be found on the newly updated STA website www.sportsturf.asn.au

CHRIS CHAPMAN PRESIDENT, STA NSW

STA QLD





The STA QLD contingent at the recent Bonville Turf Conference and Trade Show

t has been a busy few months for the STA in Queensland. Our year's first event was the annual education day held at Brisbane's Villanova College in March.

Recently appointed head greenkeeper Clyde Wooderson explained how the recent rains had caused the local creek to rise and inundate low lying parts of their fields. Nothing like being thrown into the deep end! Despite this, Clyde had his venue looking good. Although numbers were down slightly (it's hard getting away from your own place when you get the first real dry spell for a while) a good day was had by all.

The STA QLD Annual General Meeting was held at the Glenn Hotel in April. There was very little change with Terry McPartland (St Andrews College) re-joining the committee and Kristy-Ann Pratsch (River Sands) voted on.

There were two noteworthy awards at this year's AGM, the first being a Lifetime Commitment Award presented to **Brian Dale** (ex BNIT) and the second to **Ryan Tracey** (Landscape Solutions) as our STA QLD Graduate of the Year. Congratulations to both of these recipients; their awards are well deserved.

Our part-time administration assistant Susan Smith has called it a day and decided to move on. We'd like to thank Sue for her hard work and valuable help in running the association. After an extensive search we have appointed Tanya Baxter as her replacement. Tanya joins us with a wide range of skills and experience all of which will be of great benefit to our association. The committee, and I'm sure all of our members, would like to welcome Tanya to the STA.

The much anticipated bus trip to the 6th Annual Bonville Turf Conference and Trade Show early in June was a great chance to do some networking and compare notes with our fellow greenkeepers.

An intrepid group of STA QLD members, including two from NZ who joined us specially for the event, flew the state flag into NSW during the first State of Origin match (we won't mention the score!). Unfortunately the result was the only blight on an otherwise fantastic trip.

We finished the conference off with a round of golf which in my case was nothing short of pathetic. My excuse though was that I constantly took my eye off the ball to take in the stunning views of what has to be one of Australia's most scenic courses. I highly recommend you book in next year.

MARTYN HEDLEY VICE-PRESIDENT, STA QLD



STANZ delegates visit the Chiefs Super 15 training base during the recent NZ Turf Conference in Hamilton he New Zealand Turf Conference was held at the Claudelands Events Centre in Hamilton in mid-June. The conference governance is made up of NZ Bowls, NZ Golf, NZ Cricket, the Sports Turf Association of New Zealand, NZ Recreation Association and trade companies.

The cross section of industry representation coming together ensures a diverse programme for all delegates and enables us to glean industry knowledge from each other. We would like to thank Avenues event management company for the smooth running of the three days.

We had 34 expert speakers across all sectors delivering outstanding presentations. I would like to thank all presenters for their contribution, with special thanks to **Damien Hough** who was the STANZ international guest speaker. Damien gave an excellent presentation on the upgrade of the Adelaide Oval and contributed his knowledge to the open forum.



As I write, winter has hit with a vengeance across New Zealand. The snow is tumbling down in many parts so we look forward to the ski season. We hope to see our friends from across the 'Ditch' in New Zealand to enjoy our winter wonderland while the grass has stopped growing!

IAN MCKENDRY CHAIRMAN, STANZ

VGCSA 🗢

utumn and early winter has been an exciting time for the VGCSA. We recently held the 86th AGM at Kingston Heath Golf Club, while a good number of members ventured up to Cobram Barooga for the combined assistant superintendent and country meeting.

Hayden Mead had Kingston Heath in fantastic condition for the AGM on Tuesday 7 May. Thank you to Hayden, general manager Gregg Chapple and all the staff at Kingston Heath for allowing us to host our AGM at this world class facility.

Winners of the golf on the day were Paul Robinson who won both the Powell Trophy with a gross score of 72 and the Toro Cup with 38 stableford points. Fittingly, Ted Boltong, sporting his bright orange golf attire, was the winner of the President's Shield.

Former AFL footballer Jason McCartney was our guest speaker and he had the entire audience enthralled with his story of determination and his will to overcome the life-threatening injuries he sustained during the Bali bombings.

During the AGM, Jarryd Graham (Kew Golf Club) was announced as the VGCSA Graduate of the Year winner. Jarryd, who attended NMIT and completed his apprenticeship under Kew superintendent Adam Robertson, beat home the strong challenges of fellow finalists John Emery (Phillip Island GC), Matthew Pollock (The Dunes), Matthew Baker (Elco Park GC) and Kerrod Tuckett (Deniliquin GC). Congratulations to all finalists.

David Mason (Riversdale GC) stepped down from committee this year as did Tim Bilston after resigning from his position as superintendent at Heidelberg Golf Club earlier in the year. The committee thanks both David and Tim for their time and effort while on the committee.

Shane Greenhill (Sorrento GC) and Steven Burchett (Portarlington GC) have stepped on and the full committee for 2013/2014 is:

- President: Steven Hewitt (Thirteenth Beach)
- Vice-president: Jeremy Cutajar (Ringwood and Dorset GCs)
- Secretary: Barry Proctor (Cranbourne GC)
- Treasurer: Mark Jennings (Box Hill GC)
- Committee: Michael Freeman (Huntingdale GC), Mat Poultney (Green Acres GC), Greenhill and Burchett

Thank you to these members for their ongoing support and also to VGCSA administration coordinator Lesley Mitchell for her guidance and hard work. Toro continue to generously sponsor the VGCSA and again were the sponsors of our AGM.

Following the AGM, two great days were had up on the Murray River at Cobram Barooga. Golf was held on the Old Course in perfect wintery conditions which set the scene for a successful combined assistants and superintendents country meeting on



3-4 June. Anco were again sponsors of the golf with the Corowa Golf Club team taking the honours.

Oscar Yildiz from Vecci was our guest speaker on the Tuesday morning. Oscar presented on many aspects of good management and personal presentation skills. Time management was a focus as was the need to prioritise tasks in order to achieve set goals.

Cobram Barooga superintendent **Tony Johnson** then gave us an insight into the damage caused by the recent tornado. The damage was still evident when playing and the size of some of the trees that were blown over was amazing. Thank you to Tony and staff at Cobram Barooga Golf Club.

Anco, Turf Culture and Toro were the sponsors. Tim, Warren and Michael each gave a presentation to the 60 members on some of their latest products and services. Thank you to these companies for their continued support of this popular event.

Eastern Golf Club (superintendent Clayton Howell) will host our next education meeting on Monday 26 August.

Shane Greenhill (second from left) and Steve Burchett (third from left) are the newest members of the VGCSA committee following the recent AGM at Kingston Heath

STEVEN HEWITT PRESIDENT, VGCSA

STA ACT REGION STA

ith the mercury dropping below zero overnight, Canberra's couch surfaces have well and truly gone into dormancy and cool-season grasses all but stopped growing. Our attention now turns to the annual STA turf seminar to be held at the Hellenic Club on Wednesday 24 July.

This year's theme encompasses the impact of social media, growth inhibitors and wear on couch. Speakers confirmed include: Nadeem Zreikat (use of new technology and social media in turf management); John Neylan (use and misuse of growth inhibitors); Michael Waring (Australian Women's Open at Royal Canberra GC); John Odell (use of turf management skills in other ventures); Michael Robinson (impact of winter wear on couch coming out of dormancy); and

Brad Van Dam (new lights and one day cricket at Manuka Oval).

We will also be presenting this year's Living Turf Student Award and our AGM will also take place at the conclusion of the seminar. This is a new initiative that we hope will allow as many members as possible to attend and voice any opinions they have. This year's seminar is also a part of the AGCSA Accreditation Programme.

Finally, on behalf of the committee and members I would like to thank Michael Waring for his tireless efforts over many years and wish him all the best after recently leaving Royal Canberra after 17 years of service.

DANNY HULL COMMITTEE, STA ACT REGION



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- Mark Jennings Superintendent Box Hill Golf Club

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