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COVER

The MCG: The Melbourne Cricket Ground during its recent resurfacing. Nearly 19,000m2 of Wintergreen couchgrass oversown with ryegrass was laid. Photo: Brett Robinson



Some 48 hours after the Hawthorn Football Club had snared the 2014 AFL Premiership in convincing

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LEAD STORY: MCG's new hallowed turf

fashion, the excavators moved onto the Melbourne Cricket Ground (MCG) arena to embark on a \$1.7 million resurfacing project. The largest works to the surface since the redevelopment of the ground prior to the 2006 Commonwealth Games, over a 19-day period HG Sports Turf stripped the existing surface, re-levelled and then laid new turf in readiness for a busy summer schedule which includes the 2015 Cricket World Cup. ATM editor Brett Robinson talks to MCG arenas operations manager Tony Gordon about the the process to renew the surface of one of the world's most iconic sporting grounds.

FEATURES

Going Agrostis

Royal Canberra Golf Club's long-awaited and highly anticipated course redevelopment got underway in July with works starting on the front nine. While it's the biggest project in the club's history, it's the grassing strategy that will see the use of creeping bentgrass on fairways that has the Australian turf industry sitting up and taking notice. ATM editor Brett Robinson talks to course superintendent Andrew Boyle about the groundbreaking project.



World Cup wonder

In June AAMI Park head curator Justin Lang together with former Forsyth Barr Stadium turf manager Troy Jordon got the opportunity of a lifetime. Approached by the STRI, both were part of the organisation's consultancy team that guided preparations for the stadiums and training venues used at the 2014 FIFA World Cup in Brazil.

Cott's got the look

Cottesloe Golf Club superintendent Simon Bourne looks back at course preparations for the recent WA Open and the wild weather which caused a few headaches for his crew ahead of the final round.



A chip off the old block

For expat Australian superintendent Gavin Reid, it's hard to remember a time in his life when turf and golf were not a part of it. Here he reflects on a fascinating and rewarding career.



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A mite-y challenge

able to assist turf managers.

Syngenta technical manager Dr Mark Walker discusses the challenges of couchgrass mite management and how some new chemical options combined with new research might be

GRASS-ROOTS WITH JOHN NEYLAN Navigating the curves

ATM columnist John Neylan updates readers on his sand research project

and discusses moisture retention in sand profiles, in particular moisture release curves and the differences between field observations and controlled laboratory tests.



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Gary Beehag; Simon Bourne (Cottesloe GC); Andrew Boyle (Royal Canberra GC); Barry Bryant (SAGCSA); Chris Chapman (STA NSW); Glen Frewin (Axedale GC); Peter Frewin (AGCSA); Charlie Giffard (GCSAQ): Martvn Hedlev (STA Qld): Clayton Howell (Eastern GC); Troy Jordan (PGG Wrightson Turf); Justin Lang (AAMI Park): John Nevlan (Nevturf): Gavin Reid (Wuijang Sports Park, China): Kellie Rose (STANZ): Richard Stephens (Turf Australia); Jim Vaughan (Turf Queensland); Dr Mark Walker (Syngenta)

A bloody legend

🦰 'day Kiwi, Blacky here mate! Have I got a story for you! Martyn Wilfred Black yesterday resigned as superintendent of Castle Hill Country Club."

I'm sure my response (which can't be printed for obvious reasons) was similar to most when, on the last Wednesday in October, the shock news filtered through that one of the great characters of our industry was ending his tenure just three months shy of 26 years. Not since the resignation of former Royal Sydney superintendent John Odell in late 2011 has a departure drawn such a collective gasp, but like Odell, a life-long friend who was one of the first to know about his decision, Black has had the courage to bow out while still firmly at the top of his game. And no-one would dare begrudge him that.

Where do you begin to sum up Martyn Black? Perhaps there aren't any words that could do him justice - he's just Blacky, our Blacky, a bloody legend of a character that only the turf industry could produce. From the halcyon days as a bare-footed apprentice under the guiding hands of legendary Pennant Hills superintendent Vince Church, through to fighting the fight at his 'spiritual home' Castle Hill, his experiences in the golf and turf industry could fill this magazine a hundred times over (don't worry, an ATM columnist he will make!)

I vividly recall my first encounter with one M. Black at the 2003 Australian Turfgrass Conference. I had been at the AGCSA for no less than five weeks and my everlasting memory was watching Blacky take the stage and give a quite stunning repertoire that included Inside Thongs Outside, Green and Gold Malaria and, my favourite, Turbulence.

There are many wonderful traits that elevate Black above most of us mere mortals, but the overriding one is passion. A passion for golf which has been ingrained in him since he first picked up some sticks at the age of 11 at Asquith Golf Club. A passion for an industry that has furnished his life with hundreds of close and dear friends. A passion for history and learning from it, appreciating the sacrifices of others and instilling in his young charges the work ethics and beliefs of yesteryear which are, sadly, somewhat lacking in today's industry.

His hatred of golf carts is legendary, not to mention metal spikes which he led the charge against and saw Castle Hill become the first course in Australia to ban them, while the battles he has won in the committee room are too numerous to mention. Indeed, his innate ability to clinically disable any self-important committee member with his intimate knowledge of turf and rapier-sharp wit is the stuff that most superintendents could only dream of emulating.

Friday 12 December 2014 will indeed be a sad day when Black pulls out of the Castle Hill gates for the last time, but by no means will his involvement in the "turf caper" end. There has been no shortage of job offers flood in since the news of his resignation was made public and in due course he will make an announcement as to the next chapter. For the time being he is looking forward to his first stress-free summer in 26 years before focusing on a bucket list trip that will see him and wife Debra visit Gallipoli for the Anzac Day centenary. It was there where his grandfather, Jack Black, landed as a 19-year-old field ambulance officer a couple of days after the first wave. It's this man, who lived until he was 94, that we can thank for Blacky inheriting the ability to pen a verse and carry a tune.

So to Blacky we bid farewell and thank him for some wonderful memories of his time in charge at Castle Hill. Just as he will miss the camaraderie of working with the boys and getting his hands dirty, so too will we mourn the departure of a character who was and will always be a standard bearer for the superintendent profession. In the words of Blacky's old man Ted, "Well done Marty, Vince Church would have been proud of you son."



Brett Robinson, Editor



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Golf course biodiversity project generates widespread interest



he summer sports season is well and truly upon us with golf and cricket now being played at all levels around the country. The professional golf season teed off in fine fashion with the west coast tournaments a huge success, notwithstanding some very unusual weather leading into and during the events (read more about this in the story on the WA Open, pages 30-32).

The players now turn their attention to the east coast swing and will be looking forward to visits to Metropolitan Golf Club (Australian Masters, 20-23 November) and the recently revamped layouts of The Australian Golf Club (Emirates Australian Open, 27-30 November) and RACV Royal Pines (Australian PGA Championship, 11-14 December). Good luck to AGCSA members Glenn Stuart, Phil Beal and Lincoln Coombes as they gear their courses up.

Don't forget that current financial year AGCSA members are entitled to free access to both the Open and the PGA simply by presenting their membership card at any entry gate. This is a fantastic opportunity to see tournament preparations first hand, especially given the significant facelifts both The Australian and RACV Royal Pines have received in recent times.

BIODIVERSITY WORKSHOP

In the last edition of Australian Turfgrass Management (Volume 16.5, September-October 2014) an article on the recently completed 'Biodiversity and carbon benefit of urban golf courses' project was featured ('Green havens', pages 6-12). This project was jointly funded by the Australian Research Council, The Research Centre for Urban Ecology and the AGCSA and was undertaken by The University of Melbourne over a three year period at 13 golf clubs in Melbourne's south east.

The project compared the biodiversity value of golf courses to that of adjacent residential areas and nearby smaller urban parks. The study has for the first time demonstrated the true biodiversity value of golf courses in Australia and their importance in enhancing the urban environment. As a result the project has generated quite a bit of interest and since the article was featured there have been numerous requests to republish the work in journals both nationally and internationally.

To further promote the project and its findings, the AGCSA is hosting a workshop on Monday 1 December 2014 at Spring Valley Golf Club in Melbourne, one of the 13 courses used in the project. Key project members **Dr Steve Livesley** and **Dr Caragh Threlfall** will present the final outcomes of the project as well as take attendees on a course walk to look at specific areas relating to their work.

All those interested are welcome to attend and a flier is included in this edition of ATM with details of the event. The workshop has deliberately been scheduled to start at 10am to encourage those from interstate who want to attend. The interest that this report has generated again highlights the need for specific and relevant research in the turf sector in Australia.

STACKING UP

In late October I had the pleasure of travelling to New Zealand as a guest of Tourism New Zealand to attend a Leadership Symposium in Rotorua. The event was run by the Australasian Society of Association Executives and proved a great opportunity to meet and learn from others working in the association sector. One of the other pleasing aspects of the visit was to be able to relate how the





Drs Stephen Livesley and Caragh Threlfall will conduct a workshop on the AGCSA's three year biodiversity project on 1 December

AGCSA compares with other industry associations and I am pleased to report it stacks up very well and is highly regarded within the sector.

The turf community as a whole is very fortunate to have passionate people (both practitioners and trade representatives) that are prepared to devote their time to promoting the interests of all in the industry. Associations, like many sporting clubs, are feeling the pressure as people look at how they spend money and, more importantly, their time.

Back at home and planning for the 31st Australian Turfgrass Conference and Trade Exhibition continues apace and I am pleased to confirm that the Monday workshops, partnered with AGCSA Gold sponsor Jacobsen, will again return in 2015.

After receiving rave reviews on the Gold Coast, David Bancroft-Turner will return in the Hunter Valley (we really had to twist his arm) and will again present his workshop 'Political intelligence and how to survive, thrive and manage the politics at your club'. For those that did not attend David's full-day workshop earlier this year, I suggest you get in early as it was fully subscribed within a matter of days of registration opening. David will also expand on some of the other topics he presented on the Gold Coast.

On the agronomy side, we have been very fortunate to secure Dr Jack Fry who is a professor in the Department of Horticulture, Forestry and Recreation Resources at Kansas State University. Dr Fry has also worked at the University of Maryland, Colorado State University and Louisiana State University where he taught and conducted research in turfgrass science. Dr Fry co-authored Applied Turfgrass Science and Physiology and has presented seminars for the GCSAA since 1998. We look forward to welcoming Jack Down Under.

As this will be the last edition of ATM for 2014, I would like to take the opportunity to wish everyone a merry Christmas. I hope 2015 is prosperous both personally and professionally and, more importantly, safe. I look forward to catching up when our paths next cross and please feel free to contact me at any time if you have an issue or suggestion; feedback is greatly appreciated. \pm

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American-born Tony Gordon has been arenas operations manager at the MCG since August 2012. The recent \$1.7 million resurfacing project was his first involvement in a full scale redevelopment at the

MCG's new

Some 48 hours after the Hawthorn Football Club snared back-to-back premierships for the second time in its history, the excavators ripped into the Melbourne Cricket Ground arena signalling the start of a \$1.7 million resurfacing project. ATM editor Brett Robinson talks to arenas operations manager Tony Gordon about the process to renew the surface of one of the world's most iconic sporting grounds.



with the surface you've produced, the next week the excavators are in ripping it up. Just ask Tony Gordon, arenas operations manager at the Melbourne Cricket Ground (MCG).

Of the six AFL Grand Finals he and the MCC arenas team have prepared Melbourne's iconic battleground for, the 2014 staging was just about as near to perfection as he could have wished for. A combination of experience accrued over his five-and-a-half years at the ground, finetuning fertility and topdressing programmes, the stadium's artificial growth lights and Mother Nature playing her bit, all meant that when the first ball was bounced on Saturday 27 September Gordon stood in the machinery race a contented soul.

But as turf managers well know, beauty isn't all about what's on top. While for the vast majority of the near 100,000 spectators who crammed the ground the surface looked immaculate, Gordon well knew there were some inherent issues below the pristine looking turf which were making it increasingly difficult to manage.

To remedy those issues and with a hectic 2015 calendar approaching, which includes the Cricket World Cup, on 21 August the Melbourne Cricket Club (MCC) officially announced that the MCG would be resurfaced following the 2014 AFL Grand Final. The most extensive works since the ground was overhauled ahead of the 2006 Commonwealth Games, the \$1.7 million project would involve stripping and recycling the existing Motz stabilised turf surface, re-levelling and then laying just under 19,000m² of HG Sports Turf's new Eclipse stabilised turf product.

when on Monday 29 September the excavators tore into the surface he and the arenas team had so painstakingly prepared for the Grand Final 48 hours earlier. But as he has come to appreciate during his time at the MCG, it's just "one of those things that we do here".

"In order for a field to perform well it needs to be uniform, so this rebuild sees us start from scratch again and all things going well it will hopefully last us for another 8-10 years," says Gordon. "Since the redevelopment of the ground prior to the 2006 Commonwealth Games, the Motz turf system has been used and with the new northern stands that were built, it created a few management issues over winter. The original solution was to just use turf replacement as a way to manage the surface, but it wasn't cost-effective and didn't quite get the result that was expected.

"In 2009 the MCC invested money in the SGL Concept lighting rigs and they proved so successful that we have significantly reduced the amount of turf that needs replacing to just a few critical areas. As a result parts of the ground weren't getting replaced as regularly because they weren't wearing out as much. That meant that over the years the older parts of the ground have built up levels of organic accumulation and would always be the first to go off colour or show signs of disease.

"The centre corridor is the area most often replaced and in the six years I have been here there's only been two seasons where we haven't had to completely replace it. What we would do is place an annual order of turf a year ahead of time which would be used to repair the centre bounce



area, corridor and goal areas. If in a good year we had any left over we would then do a strategic replacement on an older part of the ground that wasn't performing as well.

"So every part of the ground was a little bit different. Some areas, like the centre bounce, were replaced with new turf a few months ago, whereas areas on the southern wing, where we don't have shade issues, were still the original turf from before the Commonwealth Games, which is almost 10 years old once you go back to when it first went down on the farm.

"Another aspect that was affecting performance was that some of the original Motz turf had up to three times as much plastic fibre backing in it as the new Eclipse stabilised turf we now use. This

meant there was virtually no rooting activity with that backing and in parts of the ground we were managing a 100mm profile on top of sand – there was no interaction between the two layers. The new Eclipse product has a much more open backing and the roots shoot straight through it and it behaves like a 300mm profile should."

ALL IN THE PLANNING

Those who know Gordon, or 'Flash' as he is affectionately known by his MCG colleagues and peers in the turf industry, will tell you that the American-born 38-year-old is a perfectionist. While the resurfacing project was only publically announced in August, for Gordon planning started as far back as October 2013 when the MCC gave the project the internal green light.

Working in conjunction with HG Sports Turf's general manager Erik Kinlon, Gordon systematically made sure that everything was in place over the ensuing months so that by the time excavators moved in nothing had been left to chance.

One of the biggest challenges was simply the logistics of traffic management and storage. With only one arena entry and exit point, Gordon had to coordinate machinery movement, wicket installation, removal trucks and deliveries with military precision. With no staging ground from which to store anything, turf and sand deliveries also had to be timed to perfection.

All that planning was put into motion no sooner than 25,000 patrons had departed the MCG for the Open Day the day after the Grand Final. Gordon was back in that Sunday evening dismantling the stage in the machinery race to enable access as well as laying out the first section of the haul road. Gordon also flagged the arena's 112 sprinkler heads and marked out which areas were to be ripped up with the Koro fieldtopmaker and excavators.

Site induction meetings started 7am Monday 29 September and by 8am a 12-tonne excavator from Prince Excavations was scooping up its first bucket-







General manager Erik Kinlon (pictured below) was in charge of the HG Sports Turf crew which numbered as many as 25 during the near three-week project

Excavators started ripping up the existing MCG surface on the Monday after the 2014 AFL Grand Final



load of MCG turf. (HG Turf also sub-contracted McMahons to assist with the surface removal stage, spreading of sand and re-levelling.)

Initially it had been planned to remove two thirds of the ground with the fieldtopmaker and the remainder with excavators. This was for two reasons. First, some parts of the ground contained the older Motz turf which was too thick for the Koro to handle in a single pass. Second, the existing surface was to be recycled as a top soil product at a sports and recreation facility in Melbourne's northern suburbs and as such needed to be delivered in a particular consistency. As it quickly transpired, after the first couple of deliveries the turf that had been ripped up with the excavators was just as suitable, so they ended up removing most of the surface.

The fieldtopmaker was used to strip the turf off the centre square area underneath which lies the concrete slab upon which the portable wickets sit. Once the sand was exposed, an excavator was brought in to strip it off and expose the geofabric liner and drainage cell which are placed over the top of the concrete slab when the wickets are out (the slab is about 120mm below the surface). The slab was then cleaned off in preparation for the installation of the MCG's 10 portable pitches.

At the same time as this was happening, on Monday afternoon No Fuss Solutions came in and deployed the remainder of the haul road which looped around the centre wicket area. All the while the outfield surface was being dug up and stockpiled in preparation for the first of the tandem trailer removal trucks arriving 6.45am Tuesday.

With the concrete slab prepped, over three consecutive nights the 10 portable wickets were transported from their nearby winter home in Yarra Park – four going in on Monday, a further four on Tuesday and the remaining two on Wednesday. Brunton Avenue was closed each night between 8pm and 5am and using StrathAyr's 30-tonne TransportAyr wicket lifting machine, each wicket (which weighs around 30 tonnes, heavier if they're wet), was dropped in one by one with MCG head curator David Sandurski overseeing the process.

"We wanted the wickets in as early as possible so that they could settle in and David and his team could start preparing them for the first Sheffield Shield game on 31 October," explains Gordon. "It also made sense to do them first rather than installing the outfield and then driving 60 tonnes over it to get the wickets in.

"There is a 20mm gap between the steel frames which hold each wicket and once they were all in we filled those gaps with a kiln-dried sand and then capped that off with black soil to let the couchgrass run into it. We also took the opportunity to install additional cabling for stump cams and microphones on the four outer wickets. Previously only decks 3-8 had been wired up, but with the Cricket World Cup looming it was important that we had that infrastructure across all 10 pitches."

By the close of business on Friday (3 October) the MCG arena resembled a beach with the wickets an oasis of green in the middle. While the old surface was being carted out, around 220 cubic metres of fresh sand was also delivered and stockpiled on the arena to be added to the existing sand to return the ground back to the original levels when it was rebuilt

The MCG's 10 portable couchgrass wickets were installed over three nights at the same time as the outfield was being stripped



CONTINUED ON PAGE 10

WHAT DO THE FORMULA ONE, AUSTRALIAN MOTOGP AND AUSTRALIAN SAILING TEAM HAVE IN COMMON?



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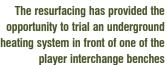
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Above: The MCG's 3m wide synthetic track was also upgraded and now rings the entire ground

Above left: The MCG four days after works started







CONTINUED FROM PAGE 8

ahead of the Commonwealth Games. HG Sports Turf brought in CR Kennedy to assist with levelling the surface using their Leica iCon Robotic Total Station system to get tolerances within +/- 5mm.

With the surface levelled, the first maxi-rolls of Eclipse turf arrived on Wednesday 8 October. The turf had initially been sprigged with Wintergreen couchgrass at HG Sports Turf's Alexandra-based farm (about two hours north of Melbourne) in November 2013 and then oversown with Derby Xtreme and RPR ryegrass in January 2014.

Starting on the northern side of the ground, the HG Sports Turf crew, which numbered upwards of 25 at the height of the project, proceeded to work their way across the ground to the machinery race on the southern side, laying the rolls in an east-west direction.

Between 2500-3000 square metres of turf was installed each day with HG Sports Turf having a 10-day window to get the turf down and

Once installed the turf was patched in and consolidated with a 3-tonne roller the same day and then cut at 12mm the next day with a Toro 5510 Reelmaster with groomers engaged (the turf had been maintained at 12mm at the farm prior to harvesting).

"The laying went very smoothly and to be able to cut the surface at 12mm the day after it was laid was pretty impressive," comments Gordon. "Once the whole ground was down we gave it an application of fertiliser and started to get back to our normal management regime with a bit of emphasis in those early days on using root stimulants to encourage root development.

"Now that we have the new turf down, going forward it will be important not to become complacent in the fact that we have a brand new surface. That means making sure we keep up the frequency of our renovations and dustings to ensure the best surface possible. We normally solid-tine the ground every week and hollow tine every 4-5 weeks throughout the year. We will also look at tweaking our regular dusting intervals."

TRACKS AND TRIALS

Along with the arena resurfacing, the recent project also included a couple of other significant features. Up until now the MCG had a 3m wide synthetic track around the arena boundary which ran from the machinery race on the Great Southern Stand side, around the northern stands before ending behind the Punt Road end goals.

As well as upgrading the old track, the resurfacing works also enabled the opportunity taken to extend the synthetic track right the way round, something which although in the pipeline had been put on the backburner as the natural turf had always performed well on that side of the ground.

Using a small excavator, the HG Sports Turf team dug down 150mm and then filled with crushed rock and compacted. A shock pad was then laid before



The turf was installed over a 10 day period between 8-17 October with the ground hosting its first Sheffield Shield game on 31 October

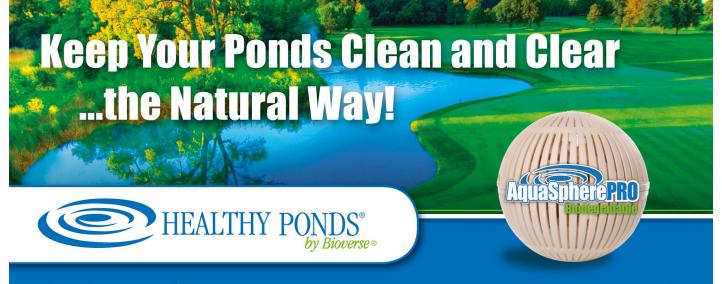
the synthetic carpet (Desso's iDNA X product) was rolled out over the top. Marble sand, topped with green crumbed rubber infill, completed the process.

The resurfacing also enabled the MCG arenas crew to undertake an underground heating trial in front of the interchange benches. Prior to the MCG going to portable pitches, underground heating technology had been trialled in the past on the wicket block to help dry the black soil and it had also been used on the northern boundary in the days before the purchase of the artificial lighting rigs.

With that latter trial not providing great results

and now that the artificial lights are in constant use, it was decided to put down a 20m² section of underground heating wires in front of one of the interchange benches to see whether the two together (the underground heating and lights) would further enhance turf growth and recovery in what is a heavily trafficked and shade-affected area.

As an aside, Gordon says the \$2 million investment with the lighting rigs back in mid-2009 has paid tremendous dividends and they are now an integral component in the ongoing management of the surface.



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Nearly 19,000m² of Eclipse stabilised turf was laid in maxi-rolls. The new surface is Wintergreen couch oversown with Derby Xtreme and RPR ryegrass



"The MCG originally purchased 11 light rigs to treat about 9000m² of turf on the shaded side of the ground which only partly goes into the corridor," explains Gordon. "Once we started using them we found that we could easily manage the shade because most of the issues we had were on the wing which doesn't receive a high amount of traffic during a game of AFL. That enabled us to use the lighting rigs on other areas of the ground, like the centre corridor, so we are now effectively treating an area of 12,000m² with a system that was designed for 9000m².

"So it's a bit of a balancing act, robbing Peter to pay Paul I suppose, and we try not to over-treat an area that isn't getting the wear that say the corridor does. That has enabled us to reduce our turf replacement needs and we have gone from a maximum of 13,000m² one year to just 1300m² the next. This past year we only used 1800m² and the corridor wasn't replaced at all."

SIZZLING SUMMER

As this edition of ATM was going to print the finishing touches were being put on the ground for the opening Sheffield Shield game on 31 October between the Victoria Bushrangers and NSW Blues. The following week the ground hosted the season's first international cricket fixture, a T20 clash between

Australia and South Africa, with the two nations meeting again on 21 November for an ODI.

That is followed by the Boxing Day Test (v India), a number of Big Bash League (BBL) games and an ODI Tri-Series fixture against India. The MCG will host the BBL semi-final on the weekend of 24-25 January immediately after which three of the portable wickets will be removed ahead of the 21-day exclusion period before the start of Cricket World Cup on 14 February.

The MCG will host six games including a warm-up match and the Sunday 29 March final before having just three days to remove the wickets and returf the centre area for the opening match of the 2015 AFL Premiership season between Richmond and Carlton on 2 April. The MCG will host 45 regular season games in 2015 and on 17 June will also host State of Origin II between Queensland and NSW.

With a full AFL schedule, the return of rugby league as well as a couple of soccer internationals also likely, Gordon is already planning ahead for 2015 and is looking forward to working on and presenting the new surface to the high levels that have come to be expected at the MCG.

"It's the first major full scale redevelopment I have been involved with since being here and it was a great experience," concludes Gordon, who in the middle of all the works also managed to sit an exam on turf genetics as part of a Masters Degree in Turf Management that he is completing online through Penn State University. "It was a little bit intimidating at first, but once you were here that first Monday and saw the excavator rip up the first bucket load you knew there was no turning back.

"Because we had so many planning meetings and discussions about it in the year leading up to it actually starting, we knew everything was in place and all that planning has paid off as it went very smoothly. That's the beauty of working with HG Sports Turf for so long; we have a good relationship and we are confident in what they do and the product they deliver, which enables us to then present a high quality playing surface."

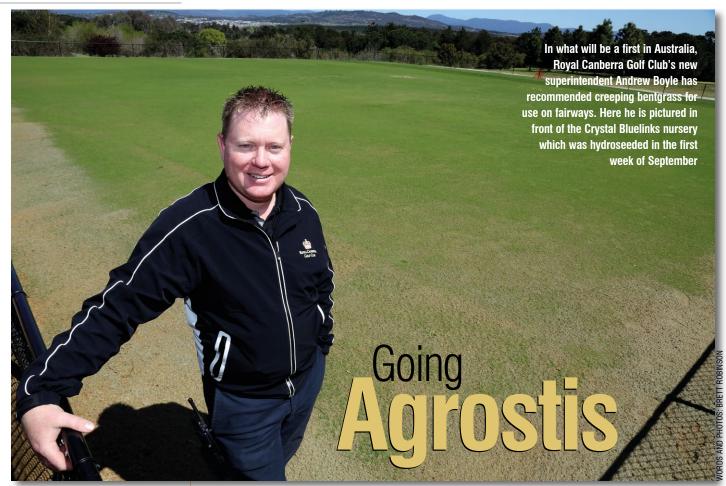
The new Eclipse stabilised turf backing (left) compared to the old Motz system backing







TORO. Count on it.



Royal Canberra's highly anticipated course redevelopment got underway in July. While the three year project is set to be the biggest undertaking in the club's history, it's the grassing strategy which will see creeping bentgrass used on the fairways that has the Australian turf industry abuzz.

o say that Andrew Boyle likes a challenge would be an understatement. Looking back over the 34-year-old's turf management career to date, Boyle has chosen to tread a different path to most. From humble beginnings cutting his teeth as an apprentice at Melbourne's public access Churchill Park Golf Club, Boyle's CV has been bolstered by stints at the stunning Bandon Dunes in the US, construction superintendent of one of Australia's most talked-about course developments in recent times Barnbougle Dunes, while more recently he had an extended period at Royal Melbourne Golf Club, where he rose through the ranks to become East Course assistant.

In early August last year, however, he accepted a role that would put everything he has gleaned over the past 17 years to the ultimate test. Following the departure of long-serving superintendent Michael Waring at the end of March 2013, Royal Canberra Golf Club advertised not once, but twice for a new superintendent. Initially not putting his hat in the ring, when the position was advertised a second time Boyle couldn't let the opportunity slide.

Royal Canberra is no ordinary job. As has been written in ATM in the past, there is a raft of elements which conspire to make it one of the most challenging golf courses in Australia to manage. Top of the list is Canberra's fierce climate – brutally cold winters and sizzling summers – not to mention the inherent issues that come with playing surfaces that are now more than 50 years old, the fact that the

course is routed through the protected Westbourne Woods Arboretum (of which the club is responsible for the upkeep of) and annual rounds upwards of 70,000.

Those major challenges aside, what really pricked Boyle's interest was the impending course redevelopment at the hands of golf course architects Ogilvy Clayton Cocking Mead (OCCM). In the pipeline for a number of years, the chance to be involved in a reconstruction of this magnitude was the clincher and after visiting the course in late July, followed shortly after by an interview with the full Royal Canberra Board, Boyle found himself moving his young family to the nation's capital to start his new role on 26 August 2013.

"When I first saw the Royal Canberra job advertised I spoke with my lovely wife Michelle who shot it down in flames immediately," recalls Boyle with a laugh. "Needless to say I didn't take it any further – something about moving to Canberra didn't quite work for her – but when I saw it readvertised I told her I was putting in an application and that we'd discuss it later.

"It was the lure of being superintendent of a high profile club but also the fact that they were about to embark on a significant redevelopment that was very attractive, and having that construction background I knew that I could meet the requirements of the job.

"There has certainly been a lot to get my head around since starting. Royal Canberra is a very different course compared to where the majority of my background in turf management has been and I find myself back on a clay-based course for the first time since my apprenticeship.

"Dealing with an average of 99 frosts a year is something that you can't prepare yourself for - I certainly remember my first -8°C morning - and the manner in which they impact the scheduling of tasks! My first summer was pretty warm too. We had just 3mm of rain in January, 15 days over 30 degrees, 10 over 35 and four days over 40 - all in a row! We used 79 megalitres of water in January alone! Then factor in having to manage a heritagelisted arboretum and thousands of trees which suck up the water and a golf course that hasn't had any major work done to it since 1962 and there's certainly a few curve balls that this place throws up."

NEW REGIME, NEW THINKING

As with any new superintendent coming on board Boyle has had no qualms about instituting some significant changes to Royal Canberra's maintenance operations, both on the course and in the shed. Despite the redevelopment looming large on the horizon, Boyle immediately made some major changes to the way the greens were managed in terms of cutting with walk-behinds and rolling, as well as fertiliser and wetting agent applications. He also tweaked fertiliser applications across the other surfaces and started increasing the amount of organic products used.



Taking full advantage of the honeymoon period afforded most new superintendents, Boyle updated Royal Canberra's course machinery inventory and has brought in some specific machinery for the redevelopment. Rolling into the compound in recent times have been two Toro 3350-D Reelmasters, four Workman utilities, two rough cutters and a MultiPro 1750, while for the impending course works the club has purchased a Dakota 440 topdresser, a second hand hydroseeder, a Shelton Super Trencher (shipped from the UK) for drainage works and two 75hp John Deere tractors.

Perhaps the biggest change, however, has come with the staff. Around half the crew has changed since Boyle took charge with the most significant

Stage 1 of the three stage Royal Canberra redevelopment involves the front nine holes. Pictured is the 1st which was sprayed out shortly after the front nine was closed in mid-July.

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TORO.

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 Twenty three creeping bentgrass, fescue and ryegrass varieties were assessed over an eight month period for greens and fairways

The chosen ones – Crystal Bluelinks for fairways and tees (below) and greens variety Pure Distinction (bottom)



being the appointment of Earl Warmington as assistant superintendent who joined the team in mid-March 2014. Originally hailing from Queensland, Warmington spent the last three years as assistant superintendent at Jack's Point in Queenstown, New Zealand and as such his experience with coolseason grasses was seen as invaluable.

Boyle has also shaken up the crew structure somewhat, promoting long-serving foreman Jamie Taylor to the newly-created role of second assistant superintendent. 2013 AGCSA Graduate of the Year Award winner Luke Jorgensen was elevated to joint foreman alongside Matt Wathen, while in recent months former Gundagai Golf Club superintendent Adam Leech has joined the crew as irrigation technician.

All the tweaks in agronomic practices and changes in personnel have been nothing however compared to the one thing which has consumed most of Boyle's attention since arriving in Canberra – the course redevelopment. Most of his first 12 months were spent getting up to speed with the OCCM concept plans, gaining approvals from the National Capital Authority and, more importantly, looking at the results of ongoing and previous turf trials as well as establishing his own.

The redevelopment essentially targets two of the course's problem areas – greens and bunkers – and

on the design side OCCM has been given a brief to keep their works in line with the philosophies of Royal Canberra's original course architect Commander Harris who espoused a layout that followed the natural lie of the land with subtle undulations. While the design changes will be relatively minor, the same can't be said in terms of the turf and it is this aspect which has the Australian turf industry sitting up and taking notice.

The bold decision to use creeping bentgrass on the fairways (not to mention an untried bentgrass variety on greens in Australia) is set to make the Royal Canberra redevelopment one of the most closely watched projects undertaken in this country for many years. Not since the likes of Barnbougle Dunes going with wall-to-wall fescue has a grassing strategy generated so much discussion and conjecture around the golf course management industry.

Boyle is the first to admit that he now finds himself embarking on a completely different strategy to what he had in mind when he first took on the job. But with nearly 15 months under the belt, a good handle on the vagaries of Canberra's unique climate and with plenty of trial work and research to fall back on, the decision to go *Agrostis* on the fairways "isn't as stupid as it sounds".

"I'm sure a few people think I'm mad," laughs Boyle. "Hopefully I'm proven not. When I first came here I had a preconceived idea about what I thought would work – something along the lines of Santa Ana couchgrass oversown with fescue for the fairways and Mackenzie bentgrass on greens – but as it has turned out we are going nowhere near that.

"You wouldn't do it in Melbourne, you definitely wouldn't do it in Sydney, Tassie maybe, but given the extremes of Canberra's climate we really think creeping bentgrass will give us the best fairway surfaces year round. Given that our water availability is good and given the bentgrasses already out there in patches around the course were doing quite well towards the end of summer, I'm pretty confident the newer generation bentgrasses we have selected, which are bred specifically for our conditions, will hold up well.

"If it doesn't work, then I've done something wrong. There are that many courses in the US that have a similar climate to ours that run this grassing strategy and they have proven that it works over many years. The only difference is that it hasn't been tried in Australia yet and I'm always up for a challenge."

GOING AGROSTIS

So how did Boyle arrive at the decision to go with creeping bentgrass? When he arrived at the club a number of couchgrass trial plots had already been established at eight locations around the course to assess their suitability in a range of conditions, from full sun to full shade as well as high traffic and a cold microclimate area. The six varieties trialled were



Wintergreen, Legend, Santa Ana, Windsorgreen, Grand Prix and Riley's Super Sport/Celebration and prior to winter 2013 they were oversown with one half traditional ryegrass and the other half fine fescue. In September 2013, Boyle also brought in 160m² of Santa Ana couchgrass oversown with fescue from Anco Turf in Melbourne and placed it on two fairways (one full sun, the other full shade).

At the same time as fairway varieties were being assessed out on the course, bentgrass varieties for greens as well as cool-season options for fairways were also trialled on the 1600m² turf nursery located between the 10th hole and maintenance facility. The 10th tee end of the nursery (which is sand capped) was used for trialling creeping bentgrass varieties for greens, while the 10th green end (native soil profile) was used to assess fairway varieties which included ryegrasses, fine fescues and creeping bentgrasses.

A total of 25 cultivars were put down (4m x 20m strips for the creeping bentgrass and 2m x 20m strips for the ryegrass and fescue) including some fourth generation bentgrass varieties Boyle sourced from US-based Tee-2-Green through Heritage Seeds and PGG Wrightson – Pure Distinction, Crystal Bluelinks, Pureformance and Pure Select. One greens variety (Authority) and one fairway variety (red fescue) were withdrawn shortly after the trials started due to poor performance, with the following 23 varieties ending up being observed over an eight month period.



- Greens: Pure Distinction, Mackenzie/007, Penn A4 and Mackenzie;
- Greens/Fairways: Crystal Bluelinks, Declaration, 007 and Shark;
- Fairways/Roughs: Colosseum, Trio Pro, Sports Oval, Tees Mix, RPR (all ryegrasses); Hardtop/ creeping fescue (fine fescue); Premium Tees Mix, Royal Canberra Blend, Arena 1, RCGC Mix, Derby Xtreme, Saprano (all ryegrass/fescue);
- Fairways: Pureformance, Pure Select and T1 (all creeping bentgrass)

Throughout that period Boyle was also paying close attention to what was going on out on the golf course, especially towards the end of the

Royal Canberra's third nine turf nursery contains Crystal bluelinks (left hand side) and RPR ryegrass, which will be used for the roughs

CONTINUED ON PAGE 19



The 14th green, photographed in early September 2014, looking towards the clubhouse. The T1 bentgrass is currently being maintained at 4mm

NEW EASTERN GC COURSE ON TARGET FOR JUNE 2015 OPENING



Eastern's main 50ML irrigation storage dam which was commissioned recently

hile Royal Canberra broke ground recently on its course redevelopment, on the eastern outskirts of Melbourne work continues apace at the new Eastern Golf Club course development in Yering.

In 2008 the Doncaster-based club voted to sell its existing site to developers Mirvac and relocate to Yering, with the new course officially getting the green light from the State Government in February 2013. The new-look Eastern Golf Club will boast a 27-hole Greg Norman Golf Design course complete with nine-hole par three course. The Doncaster course will close in June 2015 as per the deal with Mirvac, with 18 holes ready for play at the Yering site by Saturday 13 June, 2015.

Principal contractors McMahons broke ground at Yering in October 2013. The majority of the initial works focused on the creation of the wetland areas along with the main bulk earthworks and associated drainage infrastructure, with some turfing starting in March 2014.

Thanks to a dry Melbourne spring, McMahons have made rapid progress in recent months with Eastern superintendent Clayton Howell, who is based at the new site, now maintaining nine greens complexes, eight tee complexes, two fairways and three par 3 holes. As this edition of ATM was going to print, seven fairways were due to be sprigged following Melbourne Cup Day, while three

greens and three tee complexes were also ready for seeding/turfing later in November.

T1 creeping bentgrass has been used on the greens and the 1.5m wide collars, with Grand Prix couchgrass used for the surrounds and fairways (the established greens are currently being maintained at 4mm). Sprigging of the fairways is hoped to be completed by early December and if any of the proposed 18 holes are not done by then they will be solid turfed.

McMahons have three more holes to finish bulk earthworks on which will give Eastern its full complement of 18 holes required for the 2015 opening. McMahons will then continue working on the third set of nine holes and the par 3 course, ideally completing all bulk earthworks in advance of next winter with a planned opening in 2016.

A major milestone was the recent commissioning of the course's main 50 megalitre irrigation dam and pumps. Up until that point Howell had been relying on a temporary pump set up by the Yarra River that was capable of supplying 20 litres per second.

The new system is by AKS Industries with submersible pumps in wet wells at the river capable of transferring up to 7ML a day to the main irrigation storage dams (total capacity of 130ML) via water from the river and from the wetlands system which is also connected into the wet wells. The main irrigation pump station, which can supply 100 litres per second, is situated next to the main irrigation storage dam and consists of a manifold housing five main pumps and one jacking pump.

One of the biggest challenges Howell has had to overcome is the logistics required to keep the existing course running while gradually maintaining more of the new course as it gets constructed. Howell says it would not have been possible were it not for the support of the club's management and board and having a competent and reliable crew to call upon.

"Assistant superintendent Jay Infanti is looking after the Doncaster site and staff are working between both sites, with new staff being employed as required," says Howell. "We have horticulturist Bivek Inderjeeth looking after the landscape planting of the new site and managing the cottage precinct and nature reserve.

"Our maintenance facility should be ready to move into by the end of November and this will help operations run more efficiently than our current set up which sees us operating out of shipping containers and a small shed.

"I am fortunate to have the opportunity to be involved in a project of this magnitude and it is exciting seeing it all start to evolve into a golf course. Once it's up and running I'm sure the club's membership will get immense pleasure and enjoyment out of the new facility for many years to come." To follow the progress of the new course development visit www.easterngolfclub.com.au and click on 'Yarra Valley/Development News'. W

View of the new par three 13th green



CONTINUED FROM PAGE 17

summer months. Although maintained primarily as a *Poa*/ryegrass course, there are many areas of creeping bentgrass on Royal Canberra's fairways, in particular on holes 19-27 and 1 and 12, as well as four bentgrass tees on holes 22-25.

Despite not being maintained as bentgrass surfaces, these areas performed exceptionally well during the height of last summer and that led Boyle to look further into creeping bentgrass as an option for both fairways and tees by researching results from the US National Turfgrass Evaluation Program (NTEP).

A key turning point in the eventual decision-making process would also come when the club had confirmation that its water rights from Lake Burley Griffin had been secured for the future. With secure water availability, couchgrass was quickly eliminated as a fairway option given it only performed well for 4-5 months of the year, and after bouncing ideas around with general manager Andrew Casey, himself a former superintendent, the creeping bentgrass option continued to gather momentum.

Over the course of the next five months Boyle trawled through more than 320-pages worth of NTEP data (both greens and fairways/tees reports from the 2004-2007 and 2008-2012 trials) several times over and also sought the counsel of US-based superintendents and seed companies. Satisfied



with their feedback and having compared their conditions to his own, combined with the results and observations from the club's own trials, in June 2014 Boyle made his final recommendations to the Royal Canberra Board:

- Greens: Pure Distinction creeping bentgrass;
- Fairways and tees: Crystal Bluelinks creeping bentgrass;
- Roughs: RPR ryegrass.

"We looked at a lot of grasses and they all looked and performed very similar," says Boyle. "I'm not sure whether it was fortunate or unfortunate, but without putting any fungicide down, in the eight months we had no disease go through the



With the existing cool-season grasses sprayed out, the amount of native couch that has come through has raised a few eyebrows



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One of the more significant design changes will be rectangular tees as seen here on the 9th

bentgrass plots which made it a little hard to choose between them. In the end we looked at the colour and texture as well as reading through the NTEP reports to find which varieties had strong tolerance/ resistance to our known disease pressures like anthracnose, pythium and dollar spot.

"It came down to four grasses for the greens and they were all pretty close – T1, Declaration, Pure Distinction and Crystal Bluelinks. Declaration was my preferred option on the greens initially but there was an issue of availability so we went with Pure Distinction instead.

"Pure Distinction comes from the Penn As, Gs and Penncross and is a lighter coloured, finer leaf bentgrass. It is an aggressive grower so hopefully it will compete with the *Poa* that's around and has very good herbicide, disease and wear tolerance. Its lime green colour will give us a great contrast and definition between the Crystal Bluelinks as we will be hard-lining the green edges.

"When we put the Crystal Bluelinks into the trial plots you could see from a very early stage that it had a very different colour. It is a deep blue green tint which was a feature that I really liked. It also has really good heat tolerance and shade tolerance which was a major consideration as we have significant shade issues on most fairways due to being located in an arboretum. In many of the NTEP trials it rated top three in the key areas we were looking at.

"Certainly the decision to go with creeping bentgrass on the fairways has created a fair bit of discussion, but if anyone does something a bit different in this industry people are going to talk about it – just look at the two courses being built on King Island! It will certainly look a lot different to what most other golf courses in Australia are like, but I don't think that it's too different from what golf courses in other countries look like. The members here have traditionally had a well-maintained and manicured parkland style golf course.

"Sure I've worked on dunes and sandbelt courses which have that natural appearance, but you have just got to put that in the back of your mind and accept that this place is different. Not every golf

course has to have native roughs, heathland scrub or couch fairways. It's about making sure we get the right selections for what the golf club wants to be and also what works in the climate here. Hopefully I've done the research to make this a success."

NO TURNING BACK

Just how this new grassing strategy will ultimately fare will be better known come July 2015 when holes 1-9 are due to re-open. The front nine closed on 14 July 2014 and represents the first stage of the redevelopment, with holes 10-18 to be Stage 2 (scheduled for July 2015-2016) and holes 19-27 Stage 3 (July 2016-2017). Stage 1 is split into three work zones which will overlap each other:

- Zone 1: 6th green and surrounds, holes 7 and 8,
 9th tee and 9th fairway bunker;
- Zone 2: 4th green, 5th hole, 6th tee and 9th green; and
- Zone 3: Holes 1, 2 and 3 and 4th tee.

With the native couchgrass in full dormancy, the first priority after closing the front nine was to spray out the existing cool-season grasses (ryegrass, Poa and bentgrass) with glyphosate to give the native couchgrass the best possible environment in which to flourish coming out of dormancy. With no competition, the amount of couchgrass that has come through has certainly raised a few eyebrows and Boyle is very mindful that eradicating it will be a prime consideration prior to seeding the fairways.

To assist in removing the couch, Boyle successfully applied to the APVMA for a permit to use Fusilade in conjunction with glyphosate. As this edition was going to print, Boyle was planning to go out and hit the couch in early November.

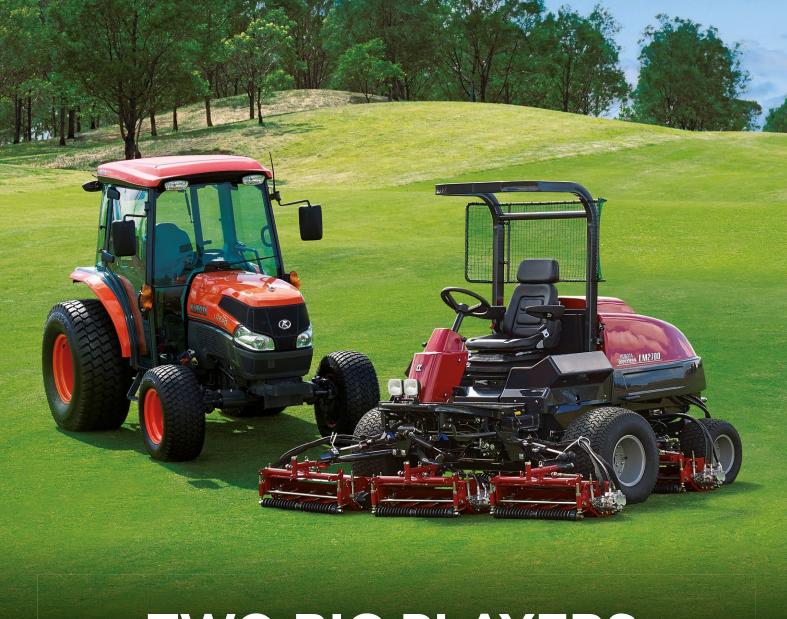
By the end of October, Victorian-based turf and civil construction company SJM had completed bulk earthworks in Zone 1 with Zone 2 works well underway. Drainage and irrigation works in Zone 1 were also progressing well while a number of concrete cart paths from green to tee had also been poured. When ready, greens, greens surrounds and tees will be hydroseeded and fairways and roughs drop-seeded.

As for the methods and challenges of both establishing the bentgrass and then maintaining what will essentially be one giant golf green, well that's a whole separate article in itself. Boyle is under no illusions as to what's in store and he already has a number of strategies lined up to contend with the many issues that are likely to come his way. But, as he says, he's more than up for that challenge.

Editor's Note: This is the first in a series of articles that ATM will carry looking at the Royal Canberra Golf Club redevelopment. ATM wishes to thank Andrew Boyle and Andrew Casey for allowing such access during what is a significant project for the club. You can keep a track of the redevelopment by following Andrew Boyle on Twitter @RCGCsuper or through https://twitter.com/RCGCsuper.

SJM have completed bulk earthworks in the Zone 1 work area (pictured is the green surround on 8 being worked on) with works already well progressed in Zone 2





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World Cup Wonder

Australian turf managers

Justin Lang and Troy

Jordan had front row seats

to the world's biggest
sporting carnival when
they were part of the

STRI's consultancy team to
oversee pitch preparations
at the 2014 FIFA World
Cup in Brazil. Located in
Curitiba and Sao Paulo,
Lang and Jordan look back
on their professional trip of
a lifetime.

Above: Lang (third from left) was part of a team of STRI consultants overseeing pitch preparations for the tournament. Here he is pictured with members of the Arena da Baixada grounds crew

he opportunity to be involved in one of the biggest tournaments in world sport, the 2014 FIFA World Cup, arose through an invitation from the Sports Turf Research Institute (STRI) that operates locally through offices in Victoria and Queensland.

The STRI, headquartered in the UK, has for a number of years been engaged by FIFA to develop and oversee pitches around the world and after being involved with the 2010 World Cup in South Africa they were again called upon for the most recent staging in Brazil.

The STRI is also the pitch consultant for the Asian Football Confederation's upcoming Asian Cup which will be held in Australia from 9-31 January 2015. Melbourne's AAMI Park, where I have been head groundsman since 2010, is one of five host venues and will kick off the competition with the official Opening Ceremony and Group A clash between Australia and Kuwait.

As part of AAMI Park's involvement, the STRI had undertaken a number of visits to the venue to monitor and asses pitch conditions leading up to the tournament, so a good relationship had been developed over a number of months. It was during one of those visits that the opportunity came about to head to Brazil.

With 12 host cities being used in Brazil, the STRI needed one consultant in each city. Due to some last minute rearranging they were a few consultants short and needed to fill the void quick, so with just weeks left until the tournament started I had a very big decision to make.

After getting the green light from my employer (Melbourne & Olympic Parks Trust) and, most importantly, my wife Brooke and two little boys Spence and Tighe, it then became a race against



time to get everything in order. Having never been out of the country before, I had to organise a passport as well as a visa. Needing to get an original signed letter from my employer in the UK to obtain a working visa for Brazil, it was always going to be a close run thing.

With the clock ticking and still no news about my visa application, I was resigned to the fact that I would not receive it in time and was preparing to cancel and reschedule my flight. However, with a little help from FIFA stepping in and fast-tracking the application, it was ready to be picked up at the embassy in Canberra the night before I was due to fly out.

Missing the daily post and with my flight leaving 10pm the following day, I had a decision to make. It was recommended that I pick it up in person, but being my last day at home before I left for six weeks, flying to Canberra and back wasn't an option.

After frantically arranging for a courier to pick it up at the Embassy the next morning, I finally received it at 6pm, just 30 minutes before I left for the airport. Needless to say it was a hectic and stressful start to what would end up being one of the most rewarding experiences of my 23-year turf management career.



IN THE DEEP END

Home base for my six week (15 May-27 June) stint in Brazil was Curitiba, the capital and largest city in the southern Brazilian state of Paraná. Curitiba is one of the most westernised cities in Brazil, with a population of 1.8 million and a climate very similar to Melbourne's. The second southern-most venue for the World Cup, Curitiba was home base for defending World Cup champions Spain and would host four Group Stage matches – Iran v Nigeria, Honduras v Ecuador, Algeria v Russia and the real highlight for me, Australia v Spain.

I was responsible for overseeing the city's main stadium Arena da Baixada, a 40,000-seater owned by local club Atlético Paranaense which competes in the Campeonato Brasileiro Série A. I was also charged with looking after two (VSTS) training pitches for travelling teams, Couto Pereira (the home ground of the city's other major team, Coritiba Foot Ball Club), the Janguito Maluceli Futebol stadium and Spain's team base camp at the Atlético Paranaense training centre.

After arriving in Brazil the process was to meet and start up a relationship with the Local Organising Committee (LOC) and arena staff. This was always going to be one of my initial challenges as none of the eight groundstaff could speak a word of English and my Portuguese wasn't that flash either. However, with the help of the LOC and their volunteers who had basic to reasonable English skills, I was able to communicate.

The first three weeks of my time in Curitiba was spent testing, assessing and making recommendations. This included regular Clegg hammer, traction, moisture, density and soil temperature measurements, as well as recording

The 40,000-seat Arena da Baixada in Curitiba was one of 12 host venues for the recent 2014 FIFA World Cup and home base for AAMI Park head groundsman Justin Lang during his six week stint in Brazil. Lang was also responsible for overseeing a number of training venues such as Couto Pereira (below)





Shade issues in the lead-up to the tournament were overcome by the use of SGL Concept light rigs

appearance of the turf. It was also crucial to make sure that every line was the correct measurement, in the right spot and square.

width was also a critical component as goal-line technology was in operation for the tournament. Working with FIFA's goal-line technician, there was a bit to do with the goals as they were outside the tolerance levels once the net had tension on it.

LONG HOURS

Initially we were there to observe, test, assess, advise, encourage and make sure things were done to guidelines then report and recommend things back to tournament headquarters in Rio de Janeiro. In the lead-up to and during the tournament we had ultimate responsibility for anything to do with the pitch. We were the first point of contact and had the ultimate decision in conjunction with FIFA's General Coordinator (GC).

An average day started with breakfast at 6.30am followed by visits to the two VSTS training pitches for testing and assessing before being transported back to Arena da Baixada by 2pm. I would then spend about four hours at the stadium testing,

grass heights and making notes on the visual

Ensuring goals were the correct height and



assessing and making sure things had been carried out as planned.

From there it was back to the hotel to log data, file reports and make recommendations to HQ. Most nights I would finish around 8-9pm with the latest being 2am. This was done every day for the six weeks I was on the ground in Brazil, with a total of 75-80 pages of reports and recommendations sent to FIFA by the tournament's end.

Pitch assessments were conducted regularly leading into the tournament and then would take place daily once it had started. After each game and training session an assessment of the ground would take place with FIFA's GC and Match Commissioner, the LOC, stadium, head groundsman and myself. This was to discuss the state of the pitch and what the process would be to maintain and prepare it for the next session.

Although the Arena da Baixada has been around for many years, the facility was significantly upgraded for the tournament, including the surface. The pitch had only been laid in late January/early February using a loam sod on top of a free-draining sand profile and combined with excessive shading of the ground by the grandstands it was important to assess it regularly. The pitch was initially Tifgrand couchgrass but due to the shade issues and large variances of temperatures from summer to winter, ryegrass was oversown during the transition period.

As well as being oversown, the pitch was regularly rolled, lightly scarified and topdressed in the lead-up to the tournament. With the pitch only newly constructed, renovations had to be light so as not to disturb surface stability too much. The normal applications of N, P and K in both foliar and granular forms were made along with other elements and amendments. With the high amount of shade and prolonged periods of cool and wet weather a lot of fungicides were used as well.

This was perhaps the most challenging aspect of my time in Curitiba. Arriving four weeks out from the tournament, it was apparent upon my first visit to the stadium that the excessive shade was causing weakened and elongated turf growth. Due to the stadium works still being completed, the SGL Concept lighting rigs that had been purchased and delivered were still sitting idle as the stadium had power supply issues.

With no reinforcement in the profile, excessive shade and a loam surface, any advantage we could get was going to make a difference. Fortunately the week I arrived, things were ready to go and SGL personnel had been organised to arrive in Curitiba to commission the rigs (we had six of the MU360 rigs for the main arena surface and two smaller rigs for in front of the player benches and goal areas). Although minimal, the use of the light rigs working around the clock three weeks out from the tournament was crucial and made a big difference.

CONTINUED ON PAGE 27



Meeting local turf managers.

tournament volunteers as well as

over the world will be a long lasting

FIFA and team officials from all

memory of Lang's time in Brazil

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THE SIGHTS, SOUNDS AND SURFACES OF SAO PAULO

hile Justin Lang was based in Curitiba, former Forsyth Barr Stadium turf manager and now PGG Wrightson Turf territory manager Troy Jordan spent his time in the melting pot of Sao Paulo, Brazil's largest city.

Jordan was the sole STRI representative in Sao Paulo and was based at the 65,000-seat Arena Corinthians (pictured above) which was built specifically for the 2014 FIFA World Cup. Known as Arena Sao Paulo for the duration of the tournament, the venue hosted six matches, among them the tournament opener between Brazil and Croatia, the Argentina v Switzerland Final 16 clash and Argentina v The Netherlands semi-final.

As well as overseeing preparations for these games, Jordan had the added challenge of having to deal with the Opening Ceremony being staged there as well. He was also responsible for managing two training centres in Sao Paulo (pictured left) and paid visits to regional training base camps.

Like Lang, Jordan's key role during his two months in Brazil was to undertake regular pitch inspections on behalf of the STRI. Based on these visual inspections and testing results using a variety of implements such as the Clegg hammer, he was then required to give advice and recommendations.

"For the most part, we as STRI consultants had the final say on how the pitch was presented," explains Jordan, who originally hails from Melbourne and was a groundsman at Etihad Stadium between 2008-2011. "That was everything from mowing lines and linemarkings being straight and goals set up correctly through to height and quality of cut. I had a FIFA general co-ordinator whom I reported to mostly on a daily basis.

"Along with the consultancy/advisory aspect of the job I very much had to roll my sleeves up and do a lot of manual labour too. I wasn't sure of this when going over but was more than happy to do it as it is my background and I loved it. This involved



anything from making sure the goals were set up correctly to divotting and linemarking."

While most of the host venues had couchgrass surfaces, the Arena Sao Paulo was the only World Cup venue that was fully ryegrass. It was also the only pitch to have the Desso Grassmaster system installed which made for a very stable and consistent playing surface.

On match days the pitch was cut at 22mm (FIFA-specified) with Dennis walk-behind cylinder mowers. Stadium staff consisted of two co-head groundsmen, 2-3 trained groundsmen and a number of casual labourers. On match days Jordan would have anywhere from 8-10 staff on site.

One of the challenges Jordan faced was getting the staff up to speed with new equipment which had arrived specially for the tournament. "The staff were supplied with the Dennis mowers and walk-behind spray markers only weeks before the tournament," explains Jordan. "Before this they had relied on rideon mowers to cut the surface, while for painting the lines they used a long handled paint roller!

"The first match was the most challenging. With it being the opening match of the tournament and featuring the host nation, there was a lot of pressure to get things right. Along with this we also had the Opening Ceremony on the pitch just one hour prior to kick-off. In the days leading up we had numerous rehearsals involving over 1000 performers and staff combined. It was a stressful period but we got through it and the pitch looked great and played really well."

Although more comfortable with the handson aspect of surface preparations, the STRI role provided a great insight for Jordan. "It was a great experience, one I'll never forget," says Jordan. "I've always found working in this industry a very rewarding one, but I guess when you're involved in an event such as this, that feeling of reward is even greater.

"I've been lucky enough to be involved in some pretty big events, including the 2011 Rugby World Cup in New Zealand, but to be involved in arguably the biggest sporting event in the world was an amazing experience. As I've always been involved in the hands-on operation of preparing a pitch, it was great to be involved in a slightly different capacity with the STRI. They were a very professional company to work for and I must thank them for giving me the opportunity to be involved."





CONTINUED FROM PAGE 24

KICK OFF

Once the tournament started most of my time was based at the Arena da Baixada with trips to the VSTS venues only on the day before training to make sure everything was ready. The day before match day and on the match day itself I would start before the ground staff arrived at the arena to conduct tests before remaining there the rest of the day.

Lines had to be marked on both days and the pitch cut at 22mm with two Mastiff pedestrian mowers, once for training the day before match day and double cut on match day. With handover of the ground required six hours before each match day kick-off, preparations for a 1pm game had to be completed by 7am which meant a 3.30am start. The pitch was also cleaned up after training sessions and each match with two Toro ProStripe rotary mowers.

Watering the pitch for training and match day was crucial, with most teams demanding watering before warm-up, kick-off and again at half-time to help ball speed. With a heavy sod and firm surface it was crucial not to over-water but at the same time the leaf needed to stay moist. This was particularly the case with the Australia v Spain game which was played in the middle of the day and where moisture on the leaf was critical.



Before the start of each game and again at half-time I would assess the pitch, meet with FIFA's GC in the players' race and make a recommendation. Although guidelines recommended regular pitch watering, the Arena da Baixada climate did not always require extra moisture and the ultimate decision was made by the GC with my recommendation.

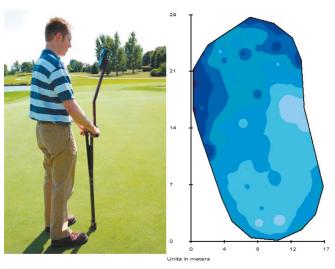
Goal post replacement was also conducted on a regular basis. Although I have never witnessed a post break during a game, we didn't leave anything to chance. Spare goal posts were placed On match day the Arena da Baixada surface was double cut at 22mm using two Mastiff pedestrian mowers

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Match day Australia v Spain

at each end of the venue with four staff ready to go with quick and easy access. Response time and planning for FIFA was crucial and after a number of practice sessions we reduced replacement time to about 3 minutes 45 seconds from start to finish.

With wear and tear experienced during the Honduras v Ecuador match, the arena's second World Cup Group Stage match, it was proposed that I sign off on relocated forthcoming training to preserve the pitch for matches. Personally that was unfortunate as the next game was to be Australia v Spain. Although the decision in the end was based purely on pitch condition, the logistics of relocation could not be underestimated as it also involved relocating volunteers, re-routing police and army and closing roads from the hotel to the venue, all of which took time and massive resources.

UNFORGETTABLE EXPERIENCE

Logistically to put together a tournament like this with teams, officials and supporters from all over the world was certainly an eye-opener. With long hours, the pressure to perform, stress, language barriers and cultural differences just to name a few of the challenges, there wouldn't have been one person that at some stage wasn't out of their comfort zone. Professionally and emotionally this is one of the hardest things I have ever had to do, but one of the most rewarding.

For such a high profile event that had to run like clockwork there are always things that you could take out of it and things that you could reflect on and do differently. There were a number of things that I have brought back and am in the process of implementing at AAMI Park, particularly with the Asian Cup fast approaching.

Although there was little that I could take away agronomically from the experience, there were a number of things operationally that I want to implement for the A-League and Asian Cup. With seven games (including the tournament's opening

match and quarter final) and potentially 14 training sessions as well as the opening ceremony, we will need to reduce traffic on the surface. As such we will look at using pedestrian mowers for preparation and clean-up.

Configuring goals for quick and easy removal particularly during a match will be another. This will also make it easy to remove them daily for maintenance practices as well. Due to some of the issues we encountered in Curitiba with goal heights, I have begun configuring the AAMI Park goals to be adjustable, particularly as we are replacing the pitch early November.

With compaction over time and levels not always being exact after replacement, it is crucial to be able to adjust goal height when needed. The ability to do this for bigger tournaments like this is important, as even slight variances will be picked up and made to be rectified.

The biggest thing I took away, however, was simply the experience itself. To experience not only the role that I was undertaking but the atmosphere in general was something else; it seemed like the whole place was one big party.

I can distinctively remember the second game that Brazil was involved in at Fortaleza. Attempting to walk down the street on a Tuesday evening and visit a supermarket or shopping centre was impossible. With Brazil playing nothing was open and everyone had taken the afternoon off to watch it on TV.

You knew when Brazil had scored as the whole city of Curitiba erupted with cheering, vuvuzelas being blasted out of windows, along with streamers, flags and fireworks. The atmosphere was incredible and something that I have never experienced before.

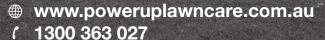
Being given the chance to work at arguably the biggest sporting event in the world with one of the world's biggest sporting organisations was a once-in-a-lifetime opportunity. To achieve something that you have always aspired to be involved with is something that I will never forget.





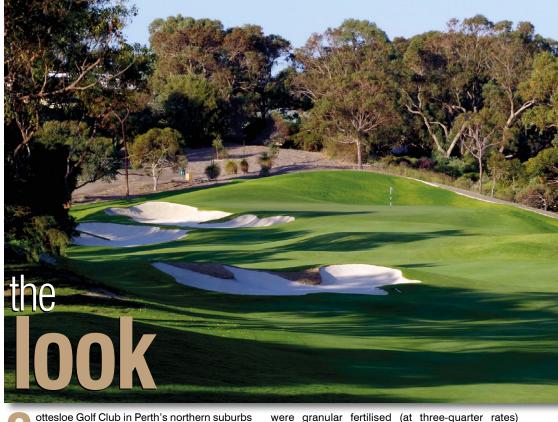








Cottesloe Golf Club in Perth hosted the 2014 WA Open in mid-October for the ninth time in its history. Pictured is the 12th



Cott's got the

The recent 2014 Western
Australian Open capped off
a busy few months for the
Cottesloe Golf Club course
maintenance crew. And
as superintendent Simon
Bourne writes, Mother
Nature did her best to make
sure they were kept on their
toes right to the end.

The WA Open followed close on the heels of the Cottesloe Club Championships which were held throughout September. Pictured below is the 14th ottesloe Golf Club in Perth's northern suburbs recently held the 2014 John Hughes Nexus Risk Services WA Open Championship, the ninth time the club has done so in its 101 year history. The Open was the first of the three WA-staged tournaments on the PGA Tour of Australasia calendar and came a fortnight after Cottesloe's Club Championships which were held throughout the month of September.

New Zealand professional Ryan Fox, son of former All Black great Grant Fox, would go on to win the Open, charging home with a final round 67 to win by an impressive six shots and collect his maiden Tour victory. While it was a memorable few days for the Kiwi, it was the quite spectacular weather event which hit the course at the end of the third round which will be most remembered by the Cottesloe ground staff, but more on that a little later.

OPEN FOCUS

Preparations for the Open began with a week left to go of the Club Championships. The greens (predominantly Penn Eagle with two Penncross) were granular fertilised (at three-quarter rates) with the intention of increasing the growth of the bentgrass immediately after the completion of the championships before then slowing it down in time for the Open.

This ensured they kept good grass coverage for the Open after the heavy traffic they received throughout the Club Championships and the fact that they were also coming out of winter. We also kept up a liquid fertiliser programme in conjunction with a *Poa*, Primo and disease prevention programme which has been developed during my eight years as superintendent.

This year I began to use ethephon for *Poa* seedhead control knowing that September and October is when the *Poa* at Cottesloe begins to flower. Being the first time I had used it, I decided to only go with three-quarter rates and had good results early on. Due to some bad weather in July, we missed a second application by five days and that came back to haunt us as by the end of September the *Poa* had started to seed again.

We immediately gave the greens another application and for the next two weeks doubled the amount of mowing with brushes and groomers to try and remove some of the seed head, all the while keeping an eye on our bentgrass coverage. Unfortunately we couldn't remove as much as we would have liked so the greens looked a little unsightly, but the seed head didn't affect ball roll.

Immediately after the completion of the Club Championships we mini-tined the greens with 8mm solid tines to relieve compaction, allowing the greens to breath and rest for a while before being worked again for the Open.





During the two weeks in between the events we completed a lot of bunker work. This not only involved the standard edging and levelling but also giving some of the course's older bunkers a face lift. In the bunkers where the white bunker sand we use had mixed in with the darker natural sand, we applied a two inch coverage over the faces and 4-6 inch thick cover over the bases to ensure all the bunkers would look and play the same.

TOURNAMENT TIME

Each morning of the tournament (and for the Wednesday Pro-Am) we stuck to mostly the same routine except for a couple of changes that were forced upon us due to some 30-plus degree days as well as the freak storm which hit the course late on Saturday.

The standard morning programme was to single cut greens at 3mm, fairways (kikuyu) 10mm, surrounds 10mm, bent surrounds 10mm (with hand mower) and roll greens. Two staff members faced and raked the bunkers. Assistant superintendent Byron Williams was responsible for changing the holes on course and practice holes along with blowing off the practice mats and doing a rubbish run. Reticulation tech Tyson Riley was responsible



for hand-watering the greens along with a staff member who was on the bent surrounds.

The target green speed stipulated by tournament organisers was to be between 10½-11 foot which we could easily achieve with just a single cut (3mm) and a roll each morning. We didn't need to roll for the second round as we had a couple of hot days for the Pro-Am and the opening round so the greens had firmed up nicely. We were able to get the speed to just over 11 with a single cut.

With the conditions cooling down for the second round we cut and rolled for the Saturday and after the events of Saturday afternoon we didn't roll the greens Sunday as we needed the extra staff member in the bunkers and on general clean up duties to get the course playable for the final round.

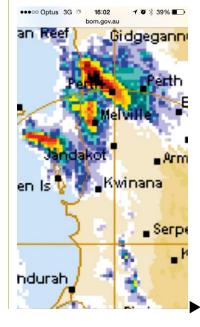
HEAVENS OPEN

As the last groups were halfway through their back nine of the 3rd round I was in the shed preparing my staff for the afternoon's work. One of those jobs was to go out and moisture sensor and then hand water any suspect spots on the greens. I looked at rain radar and there wasn't much around (most activity was out to sea) and the Bureau of Meteorology (BOM) was predicting a 40 per cent chance of 5mm. We went out and began to take moisture readings to get a head start and to see where we were at.

Half an hour later, as the last group was teeing off on the 18th, it began to get quite dark and there was a bit of lightning around in the distance. Checking the radar again, I couldn't believe what I saw – two separate sections of yellow, red and black heading towards each other, one from the west and the other from the north-east.

Cottesloe's kikuyu fairways were cross cut at 10mm for the Open

The BOM radar as the storms struck late on Saturday 18 October. Cottesloe is right under the black bit





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Cottesloe crew member Ritchie May hand waters the 13th green

A freak storm which brought with

it 23mm in 10 minutes made for a

maintenance crew

busy Saturday night for the Cottesloe

They ended up colliding directly above the 'r' in 'Perth' on the BOM radar which is just where Cottesloe Golf Club happens to be located. It's something that I had never seen before and while we get the occasional severe weather event it's rare we see any black on the radar, let alone two sections joining together right above the golf course. I knew then we were going to be in for a long night.

Before the rain arrived, the hail came first. Fortunately we didn't get hit as bad as some of the surrounding suburbs (which had 3-4cm hail stones), but the noise on the shed roof was incredible. Once the hail had subsided it then proceeded to absolutely pour down. In 10 minutes we received 23mm with a further 10mm falling in the half hour after that, the heaviest rain I have witnessed in my 18 years working at Cottesloe.

At this stage I had five staff members in at work who were rostered on for the afternoon shift and, to the credit of the other guys, after a few phone calls the rest of them arrived to help with the clean-up. That's something you can't teach your staff and it was great to see their dedication and having pride in wanting the course to look its best for the final round of the tournament.

We finally finished cleaning up all the bunkers at 10:30pm with 32 bunkers needing the bunker rake with the blade on to push sand back up the faces. One bunker required 10m3 of sand to reshape it as the sand had basically washed away. The Rake-ovac cleaned up all the loose debris that had washed onto the fairways from the deep rough which made mowing possible the following morning. The boys were then back in at 3am to finish cleaning up and to prepare the rest of the course for the final round as normal.

It was a hectic end to a great tournament and I want to take this opportunity to thank my staff for all their hard work and dedication that they showed, not only for the tournament but also during the months leading up to it. From all the work put in prior to the Club Championships through to working late into the Saturday night of the Open, the course was always looking at its best.

Hosting the WA Open is always a thrill and the greens staff definitely enjoyed the challenge. It is great for their professional development to have the experience of hosting a four round tournament, while for the newer members of staff it is a chance to gain first-hand knowledge and skills specific to the adaptation of course maintenance during this time.

Presentation of the course for both events was the best I have seen. The Board and members were very impressed as well and thanks to the efforts of the whole Cottesloe maintenance crew both were deemed a huge success. 44







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A chip off the old block

The Reid name is well known throughout the Victorian turf industry. Father Bill carved out a 45-year superintendent career, while sons Gavin and Mark have duly followed suit overseas. Gavin Reid looks back over his expat career in Asia and recent involvement with preparations for the Youth Olympic Games.

t's hard to remember a time in my life when turf and golf were not a part of it. When I look back, my choice of a career in turf management never really felt like a 'choice', but rather an ingrained passion, driven by opportunities that have taken me along a path, while not necessarily traditional, to where I am today.

My father, Bill Reid, has had a career-long involvement with the turf industry and it was he who ingrained the passion for turf within me. Turf and horses were the common discussion around our family table and for me it just seemed inevitable that I would follow dad's path to be a superintendent. At 12 or 13 I remember summer holidays jumping on the trusty Honda postie bike with my cousin, Steve Cole, to help dad with the night watering on the course. It was the freedom of this work that struck me and planted the early seeds of my love for turf.

At 15 I was working as a casual raking bunkers at the Yarra Yarra Golf Club in preparation for the Victorian Open and it is my first memory of falling in love with the team work, camaraderie, respect and appreciation that the turf industry can provide.

I think of all the lessons that dad taught me it was his incredible work ethic. He was the hardest worker I have known and he knew how to get the best results with small budgets and limited

resources and that was good old-fashioned hard work and keeping up to date with the latest industry information.

Dad began his career at the Sunshine Golf Club in the days before apprenticeships and formal education existed and he honed his skills through pure determination and hard work. After joining the Cobram Barooga Golf Club as their first paid greenkeeper he undertook the formidable task of transforming the sand scrape greens to grass greens.

Dad has always instilled in me the importance of keeping up with industry based education and that in this industry you always need to evolve and keep up with the latest and best practices. At a time when not a lot of formal industry education existed, dad jumped at the chance to be a part of one of the first intakes of the turf management course at Burnley in Melbourne. By this time, with a couple of kids and wife in tow, he would regularly make the eight hour round trip to attend the course to achieve the level of expertise he is known for today. His 45 year superintendent career at Cobram Barooga and Lonsdale golf clubs have been an important influence and inspiration throughout my career.

While dad sparked my love of turf, my love for golf began as a Cobram Barooga kid attending junior golf clinics after church on a Sunday morning. Aside from a great incentive to get to church on time, these clinics started my life-long love of golf and the important life lessons that the sport has continued to teach me. As that young kid swinging a club after church, I began to learn the lessons of character and integrity and the power of relationships, things that unbeknown to me would play a vital role in my future career.

My younger brother Mark Reid was also bitten by the turf bug and with the same life lessons and work ethic learnt as a kid, he has cultivated a highly successful turf career and is currently the director of golf and grounds maintenance at The Breakers in Palm Beach, USA. Now a highly respected superintendent and mentor in the southern Florida region, he remains one of my greatest sources of inspiration and information.

EAGER APPRENTICE

In 1985 at the age of 15 I was lucky enough to start my turf management apprenticeship at The Royal Melbourne Golf Club. I certainly wouldn't have believed at the time that it was the beginning of a career that would provide me with so many wonderful opportunities to work in challenging and varied roles and that it would eventually take me on overseas adventures I had never dreamed of.

After a year at Royal Melbourne I headed home (as all good country boys do!) to Cobram Barooga Golf Club where the construction of the last nine holes was about to get underway. With an opportunity at such a young age to be a part of a major construction project, I decided to stay and complete the last three years of my apprenticeship there.

I feel fortunate to have experienced the turf management apprenticeship system in Australia as it provided me with a fantastic grounding in the industry through its balance of practical and solutions-based education with scientific knowledge.

My apprenticeship and resulting trade certificate was achieved through the Oakleigh Technical College which is where I came into contact with two of my most influential teachers – Pete Sherry and Mike Rigby. Mike had travelled overseas and was enthusiastic about us all gaining some international exposure; it was the first time I had ever heard that overseas adventure was a possibility in this industry.

Pete taught me probably the most important lesson of my career – the power and value of mentors and industry contacts. In hindsight, my career has been moulded by the opportunities presented to me through my mentors and contacts and Pete's words that "you don't have to know everything, you just have to know the people that do" could not have been more true.

From the time I was a kid, the support I have received in the golf world and the resulting relationships have been the greatest driving forces in my career. Whether it was my family, my teachers, the superintendents I worked for or other industry colleagues, without these industry contacts I couldn't have dreamed of following the path that I have.

To this day I am in the privileged position of being able to call many industry leaders to ask for advice. They have been and continue to be my best teachers and it is the value I was taught to place on my mentors and contacts that has enabled me to create these relationships.



In 1989 while working as an assistant under Colin Winterton at Medway Golf Club, I went on to complete an Associate Diploma in Turfgrass Management through the Northern Metropolitan College of Tafe (now NMIT) and again it was my teachers and mentors that taught me more life and industry lessons that I still hold dear today. Phil Ford taught me to value myself and to see my potential in this industry, while Colin further peaked my interest in the construction side of the business

after involving me in the upgrade works at Medway.

From 1993 to 1997 I worked at Barwon Heads Golf Club under the mentorship of Peter Frewin. It was during this time that the seemingly unthinkable words of Mike Rigby came true and I was offered the opportunity to take a sabbatical for a couple of months in 1995 and take up the position of construction and grassing superintendent at the Qingdao Haushan Golf and Country Club in China. Who would have thought that the kid doing an apprenticeship in Cobram Barooga would be heading to China! I don't know if I knew it at the time, but it was definitely the beginning of my path to an expat career.

After returning from China and completing my time at Barwon Heads, in 1998 I headed to the Longyard Golf Course in Tamworth as superintendent. That same year Steve Cole, now owner of Lilydale Instant Lawn, introduced me to the StrathAyr team and I became a project manager for StrathAyr Turf Systems. This role once again took me offshore to work on the Kranji Race Course in Singapore and the redevelopment of the Sha Tin Race Course in Hong Kong.

Reid's first major overseas posting was at The Els Club in Dubai where he worked as construction manager

Working on projects like The Els Club opened up Reid's eyes to the scope of projects that exist overseas. Pictured bottom is the irrigation team at The Els Club and below the installation of the mainline – yes mainline!







The expat life has enabled Reid to work with many different cultures and experience varying ways of getting the job done. Pictured are members of his crew at The Els Club hand-sprigging

Back in Australia I was also involved in the Kensington Track redevelopment at Randwick Race Course in Sydney and looked after the turf movement for the MCG and Stadium Australia. On returning home to Melbourne I was the project manager for the final stages of the then Colonial Stadium and on completion I was appointed as the stadium's first arena manager.

In 2001, David Quadling, who was the irrigation contractor during my time at Kranji, was establishing Christensen Irrigation in Australia and asked me to head up the business for south eastern Australia with responsibility for New South Wales, Victoria, South Australia and Tasmania.

In 2003, Andrew Purchase of Turnpoint Golf Course Construction offered me the opportunity to take up the role as superintendent for the final stages of construction at The Sands in Torquay. At the end of the construction I remained as superintendent as well as assisting the growth of Turnpoint's maintenance business. In 2006, Turnpoint was looking at international expansion and it was during a day while enjoying my other turf passion at the Spring Racing Carnival that I received a call that would change my life and begin my expat career.

OVERSEAS ODYSSEY BEGINS

The call I received was to ask me to take up the position as construction manager at the new Els Club at Dubai Sports City. I looked at my gorgeous

The Dubai Golf City project involved moving 5.5 million cubic meters of sand in eight months



wife Tracey and said 'How about Dubai?' and we both decided to accept the challenge and our expat adventure began.

After the successful completion of the Els Club we both felt our expat adventure wasn't over so in mid-2007 I was appointed as the golf course development manager for the development phase of Dubai Golf City working with Thompson, Perrett and Lobb who we employed as golf course architects. Dubai was an amazing experience where I learnt many lessons as an expat working within a new culture with team members of varying skills, experience and education levels.

Between 2004 and 2009 I had the privilege of sitting on the Rain Bird International Superintendents Advisory Council, a US-based industry think tank. This opportunity further exposed me to the leaders of the turf industry including Ken Magnum (Atlanta Athletics Club), Jeff Markow (Cypress Point), Mark Michard (then at Shinnecock Hills) and other leading superintendents from around the world.

In mid-2008 Chris Gray, then with IMG, introduced me to the Dragon Lake project in Guangzhou, China where I became the golf course project and agronomy manager working directly for the Chinese owners. Upon the completion of Dragon Lake, Laurie Walsh and Chris Gray asked me to join the IMG team as part of IMG Golf Course Construction Management and we continued our adventure to Danang in Vietnam where I was the project manager for construction at the new Luke Donald-designed BaNa Hills Golf Course.

THE CHINESE WAY

September 2012 saw us move back across the seas to China, but this time to the Nicklaus-designed Wujiang Sports Park in Wujiang, 300km west of Shanghai. Darren Moore from Nicklaus was a huge supporter of me joining the Wujiang Sports Park project and it has certainly been one of my more interesting roles.

While the Nicklaus Group are the designers of this project, I have been employed by a Chinese Government owned company (otherwise known as a State Owned Enterprise or SOE) and it has certainly been an experience like no other! While hard to believe in Australia, there are companies in China, even government owned ones, that are embracing the growth of golf and the financial opportunities it presents by establishing golf course projects that have not been licensed and are essentially illegal.

While unbelievable in other parts of the world, it seems to be common practice that these 'illegal' projects are started and funded by individuals from all backgrounds who are looking to make a buck on the back of golf. Hence my first and remaining challenge is working with companies who see golf courses as nothing more than a landscaping activity and who find it hard to believe that if a course is to be successful in the future it needs a sound foundation and construction strategy!

These challenges are part of everyday life for an expat working in China. Working with companies and owners who see golf as a nice vehicle for something else or just a money making venture and staff who have never seen or played golf before due to the huge socio-economic divide in this country can be a source of frustration.

As an expat I have learnt to 'pick my battles'. I am very clear that I will never win them all and I understand that decisions are made for different reasons. Though at times it's hard to understand them, you have to learn to work with them.

Aside from the obvious challenges of language and culture, it is the lack of education and experience in the Asian industry that creates a huge challenge. Instead of fighting against it I have worked hard with my teams to show them new ways and practices for doing things and have encouraged them to change their thinking.

As an expat in China, communication is definitely key. Knowing how to ask the 'right' question in the right way and asking it over and over until you get the answer you need is vital to the success of any project. It was a lesson I learnt early on in my days in Dubai when I ordered 200 witches hats expecting orange cone like objects to turn up; instead I received 200 straw gardeners hats... it's all about asking the RIGHT questions the RIGHT way!

Through my valued industry contacts such as Dominic Wall (The R&A) and Ross Perrett I have also



been fortunate to stay in close touch with agronomy while being involved in construction. My various consultancy roles have included working with the AFL in both Dubai and China, sourcing venues and preparing them for AFL use, preparing the Nanjing Zhongshan International Golf Course for the Youth Olympic Games (see pages 38-39) and the Nanshan International Golf Club in Qingdao for the 2013 Asia-Pacific Amateur Championship. It has been a privilege to work with organisations such as The R&A, USGA, Augusta National, IGF and others and it's always good to have more opportunities to put my agronomy expertise to good use!



The Dragon Lake (China) project during (above) and after completion (top)

CONTINUED ON PAGE 40

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One of the many interesting consultancy jobs that Gavin Reid has been involved with during his time in Asia was overseeing preparations at Nanjing Zhongshan International Golf Club for the recent 2nd Youth Olympic Games.

ith much industry focus on golf re-entering the 2016 Olympics in Rio de Janeiro after a 112 year absence, in particular the new Gil Hanse-designed Olympic course, the honour of golf being played at an 'Olympic' event actually went to golfers competing in the 2nd Youth Olympic Games (YOG) which were held in Nanjing, China, during August 2014.

Australian-born course superintendent and project manager Gavin Reid was approached by the International Golf Federation (IGF) to consult and advise host venue Nanjing Zhongshan International Golf Club during preparations for the YOG, an appointment that followed on from his successful consulting role to the 2013 Asia-Pacific Amateur Championships held at Nanshan International Golf Club in Qingdao, China.

The Swiss-based IGF is recognised by the International Olympic Committee (IOC) as the world governing body for golf and the YOG was a great showcase for the IGF and their commitment to world's best golf practice and the return of golf to the Olympic Games movement.

HIRED GUN

After the Nanjing Zhongshan International Golf Club hosted a test event during August 2013, substantial turf loss was experienced on many of its bentgrass greens, with some having as little as 20 per cent turf coverage when the event concluded. This significant turf loss highlighted the need for additional expertise to assist the Youth Olympic Games Organising Committee (YOGOC) to prepare an international standard course that would withstand the rigors of an Olympic Games tournament.

Having successfully worked in various roles within China and other parts of Asia and the Middle East, the YOGOC appointed Reid to ensure the quality of the course and to minimise the previously

experienced turf loss. Reid's expertise, experience and understanding of the complex and sensitive nature of achieving success in the Asia region was vital to ensure that the YOGOC could successfully achieve a world class product.

A significant challenge for Reid and the YOGOC was the Nanjing climate and the August timing of the Games. Situated 300 kilometres west of Shanghai, Nanjing is known as one of China's 'inland ovens' with August being one of the hottest months of the year. With maximum temperatures expected to exceed 38°C, minimum temperatures of 24°C and average humidity of 76 per cent, the potential weather impact posed a significant issue in the planning and execution of the course.

Another significant element affecting the turf health in Nanjing was light intensity with most days hazy at best. "I have experienced light intensity issues throughout most of China and combined with the heat and humidity it certainly wasn't ideal bentgrass conditions at the height of the Nanjing summer," says Reid.

The Gary Player-designed course was constructed in 2006-2007 and opened for play in 2008. Greens were constructed to USGA specifications with a blend of A1 and A4 bentgrass. Tees, fairways and all roughs were sand capped with locally sourced sand to a depth of 150mm and Tifsport couchgrass used for all grassed areas outside greens.

Reid visited the course for the first time in late February 2014, at which time it was under light snow and all greens had regained a full cover due to them being reseeded in September 2013. During this visit, Reid met with delegates from various stakeholders including the YOGOC, IOC, IGF, USGA, Asian Tour and the China Golf Association to formulate a robust strategy to ensure the quality and readiness of the course for the Games.

Reid's Chinese golf construction and operations experience was called upon in order for him to work effectively and harmoniously with his Chinese colleagues. "A common challenge in China is working with a lack of science with regards to implementation and a general lack of education and expertise among the course workers and their level of flexibility to change the way they have always done things," says Reid. "I worked hard to encourage my Chinese colleagues to be open to new methods and adopt a more scientific approach rather than following the same practices year after year."

Following this first visit, soil and water testing was conducted and Reid spent time with the superintendent to ascertain as much information as possible with regards to his previous practices and nutritional and pesticide prevention programmes.

"The local superintendent had always followed the same greens programme year on year which included overseeding greens twice per year, only using granular products for all nutritional needs and



Gavin Reid was approached by the International Golf Federation to provide agronomic advice and strategies to the host venue in the lead-up to and during the Games

no soil or water testing had been conducted in the previous three years," explains Reid.

By understanding the practices that had been previously implemented, and by sharing his expertise with the superintendent, Reid was able to effectively lead a team willing to learn and change their methods in order to achieve the best outcome. Despite the challenges of language and culture, Reid and the superintendent were able to implement new practices and avoid potential issues created by their prior approach and methods.

"With the willingness of the superintendent to change his thinking, I was able to put together an entirely new approach for him," continues Reid. "That started with not doing the March 2014 overseeding that was planned and adding in foliar fertilising, a growth control programme through the entire summer period and a much improved wetting agent regime."

For Gavin and the team, the major focus for the greens programme was to have full grass cover and smooth ball roll. "I felt that if the focus was on the speed of greens we would face some serious problems through the event," says Reid. "This was agreed by all the stakeholders and in the end proved to be a very good decision. Although we did need to remind the club of this decision when there was pressure to increase speed on the eve of the tournament despite having achieved full grass cover and smooth, true putting surfaces."



Despite the inevitable challenges of preparing a golf course in China due to the weather conditions, different practices, philosophies and education levels, Reid and the team were able to implement valuable training to introduce new practices that produced a world class course for the Games.

Overall the return of golf back into the Olympic Games was a great success and the course looked great, performed well and withstood the demands of the event. Both the athletes and the various IOC officials who visited the course were impressed by its quality, and former IOC President Jacques Rogge even commented that he believed that the golf course was the best presented venue during the Games – very high praise indeed.

Working with the local superintendent, Reid was able to put together an entirely new turf programme in the lead-up to the Games



Clearing the BaNa Hills Golf Course site in Vietnam



CONTINUED FROM PAGE 37

THE EXPAT LIFE

While the expat turf professional life is certainly not for everybody, particularly not those looking for stability, it is an incredible experience and although the gypsy and itinerant nature can be frustrating it is exciting and the opportunities can be incredible.

The highlight for me so far has been the exposure to the incredible scope of jobs and projects, unlike anything available in Australia, that I have been fortunate enough to be involved in. Moving 5.5 million cubic meters of sand in eight months at Dubai Golf City and literally moving mountains of rock at Dragon Lake are two such projects that immediately come to mind.

At the end of the day, as an expat in the Asian turf industry, I see that my responsibility is to educate and improve the capabilities of the locals. I suppose in a way I'm empowering the locals and ultimately making myself redundant!

It is rare that an expat lasts more than a couple of years on any project in Asia due to two simple facts. Expats are an expensive component of any project or operation and are the first to go when budgets are reduced. Also, some owners don't always respect the value of an expat's expertise because they don't understand exactly what is required to establish a quality and sustainable course. And of course there's the other sticky issue that raises its head in Asia – the delicate topic of corruption and locals receiving under the table payments from suppliers

and contactors, activity that is much easier when an expat isn't around!

The current situation of course closures and very few new developments getting underway in China due to the current political situation is a little frightening, however, my feeling is that once the political dust settles courses will continue to be built, particularly in the high-end residential and resort developments. While it would be great to see more open space areas in China (of which there are surprisingly many) being used for golf development and easier access to the game for more people from different socioeconomic backgrounds, I am not optimistic of this happening in the short-term. Golf still remains a very elitist pursuit in China due to its cost and accessibility and is one of the reasons that it is an easy target for political points to be scored.

My advice to anyone wanting to embark on an expat turf career is to keep your eyes open for opportunities as they are out there. Establish contacts and networks that can assist you to find those opportunities and never stop learning and growing and seeking advice from your mentors.

If my career highlights anything it's that the roles you have performed, your character, ability and the contacts you make along the road are key to finding and being presented with career opportunities. Most importantly stay true to who you are wherever you're working, no matter what situations you find yourself in.

As for my future, turf is my love and will always remain so. While I have relished the opportunities I have had to work in the construction side of the business in Asia, it is my roots as a superintendent that will always be a driving force for me.

For us, the expat adventure still has a few chapters left but as they say 'home is home' and when the right opportunity presents itself we will look towards home, hopefully bringing with me the successes, the lessons and the experiences from our expat life; adventures and experiences a kid from Cobram Barooga once upon a time thought he could only dream of.

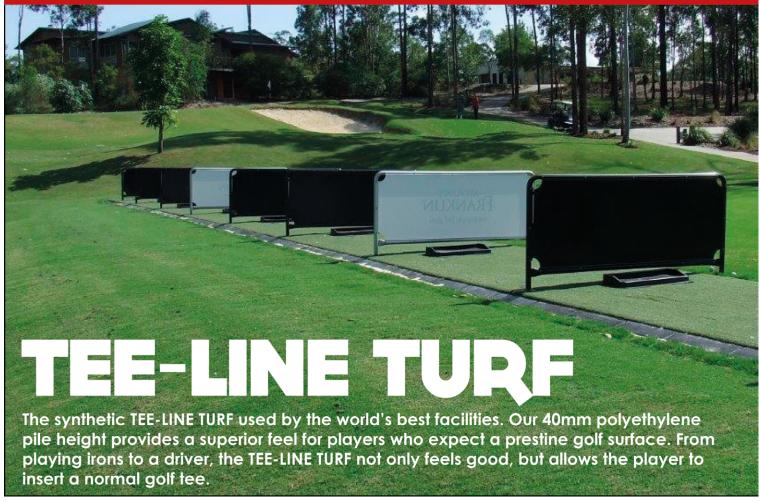
As an expat in China, communication is definitely key. Knowing how to ask the 'right' question in the right way and asking it over and over until you get the answer you need is vital to the success of any project.



Reid's current position sees him at Wujiang Sports Park in China



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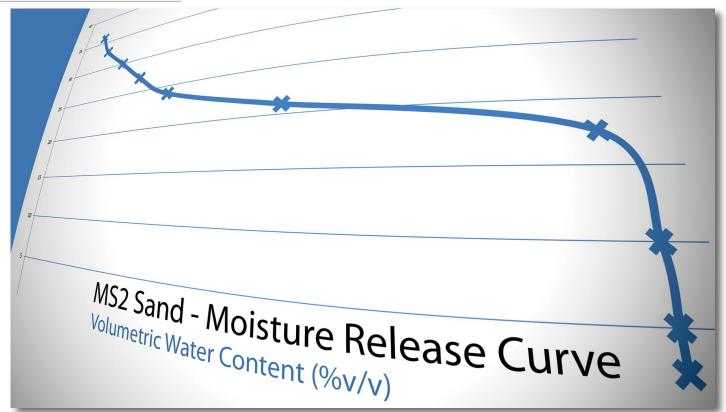
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Navigating the

Following on from last edition's column,

John Neylan looks at his sand research project and discusses moisture retention in sand profiles, in particular moisture release curves and the differences between field observations and controlled laboratory tests.

Above: The moisture release curve can be a useful tool, however, there will always be a need to interpret the data and to put it in the context of the field situation

Curves

oil science, and soil physics in particular, is an area of science that has intrigued me throughout my years at university and subsequently throughout my working life. My recent research into the characteristics of various sands for greens construction (see ATM Volume 16.5, 'Hard and fast', pgs 40-44) has further kindled my interest in not only how sands and soils perform in the field but also how we measure these characteristics in the laboratory. The results of laboratory analysis have always been a constant source of debate and in particular how does the laboratory data relate to the field experience.

The area of particular interest and intrigue has been the moisture release curve (MRC). The relationship between pore size and soil depth on water retention is reasonably complex to understand and as a teacher of soils even more challenging to explain in simple terms. Once there is a vegetation cover and plant roots, the interactions become more complex and the laboratory-determined characteristics can alter markedly.

With the sand research project, my recent experience of making decisions on sand selections based on MRC results as well as my field observations of golf greens, there often seems to be a disparity between the laboratory results and the field observations. Throw into the mix the differences

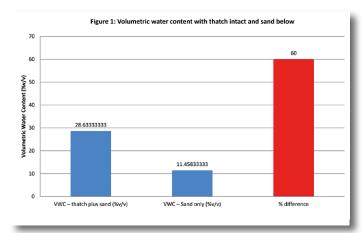
in MRC results from different laboratories and the story becomes even more confusing.

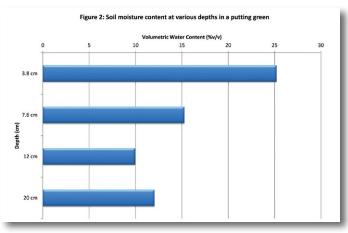
As with all stories, let's start at the beginning with some very basic soil physics. We all understand that the soil matrix consists of solid particles and spaces between these particles and that a typical soil may have a total pore space of around 40 per cent. This total pore space is split into around 15 per cent capillary pores (small spaces important for water storage) and 25 per cent non-capillary pores (larger spaces required for aeration and drainage). This can vary widely depending on the soil texture and the amount of compaction on the soil.

When a soil becomes saturated following rainfall or irrigation, gravitational forces move the excess water through the soil profile via the large pores. As drainage proceeds, the non-capillary pores lose their water and are filled with air from the atmosphere, with the capillary pores retaining water and acting as the source of water for plant use.

The forces at play within the soil matrix that affect the water holding capacity are the attraction of water molecules to soil particles (referred to as adhesion) and to each other (cohesion). These forces hold water in small pores against the force of gravity and are large in small pores and weak in large pores.

When we have a sand over a gravel layer there is an accumulation of water at the interface of the two layers and through capillary action water rises up the soil against the forces of gravity. This is the result of the adhesive and cohesive forces. It is this phenomenon that we exploit in perched water table profiles because it provides a means of increasing water storage within a sand profile.





In theory, if a sand profile is too shallow, the capillary rise of water can cause the upper rootzone to remain saturated over extended periods. By constructing a MRC it provides a means of calculating the optimum depth of a sand profile so there is an appropriate balance between aeration and moisture retention.

From my field observations and having taken many core samples from sand profiles, very few of them have the moisture profile as determined in the laboratory (see Figure 4, page 48). There are several reasons for this:

- Thatch and organic matter accumulation modifies the hydraulics of the profile keeping more moisture trapped at the surface;
- Rarely does irrigation or rainfall on a well-grassed green or sportsfield saturate the entire profile allowing the perching effect to be recharged or maintained; and
- Turf management is very much about surface management and root systems are not deep enough to draw moisture from the lower layers.
 During the past few months I have sampled

numerous golf greens to determine the soil moisture content of the profile and the most noticeable result is the amount of water retained in the thatch. I have

taken the data from 12 different golf greens from different golf courses where the volumetric water content was measured with the thatch layer intact and then the sand layer immediately below. The results are detailed in Figure 1. These results have demonstrated up to 79 per cent greater moisture content in the organic matter layer compared to the sand below.

In addition, I have looked at the moisture content at various depths in the greens profile and this is demonstrated in Figure 2. These results demonstrate a lack of the theoretical moisture characteristics that we achieve in the laboratory and in particular the perched water table at the sand/gravel interface.

In research undertaken on a perched water table bowling green, soil moisture sensors were installed at various depths to monitor soil moisture and irrigation requirements (Robinson and Neylan, 1998). In the first year of the project there was moisture extraction from the capillary fringe while the roots were at this depth, however, as the roots retracted there was minimal draw down on the perched water table.

With the sand research project I decided to sample each of the profiles to determine what the

Above left: Figure 1. Volumetric water content with thatch intact and sand below

Above: Figure 2. Soil moisture content at various depths in a putting green

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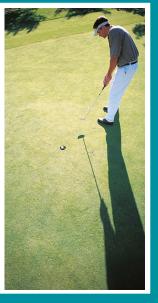
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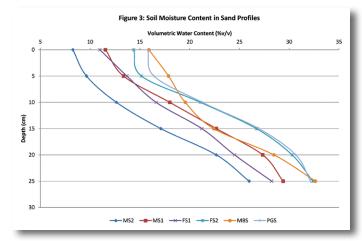
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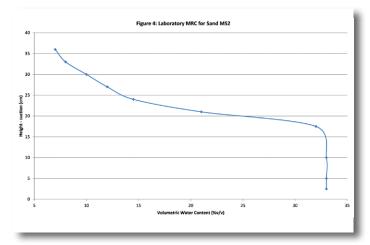
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Above: Figure 3. Soil moisture content in sand profiles

Above right: Figure 4. Laboratory moisture release curve generated for Sand MS2

moisture profile would be following saturation and drainage. My principle interest was to see how closely the moisture profile mimicked the laboratory results. Each of the sands was 30cm deep over a 7.5cm gravel drainage layer. The profiles were saturated by capillary rise and then irrigated until water was running from the drainage outlet. The profiles were left for 24 hours until drainage had ceased.

At this point the profile was sampled at 5cm increments, the samples weighed, dried at 105°C for 24 hours and then weighed. The gravimetric water content was calculated and then using the bulk density for each sand type the volumetric water content was calculated. The results for several sands (Table 1) are detailed in Figure 3 and are compared to a MRC generated in the laboratory for MS2 (Figure 4).

So what do we get out of this? The most obvious result is the difference between field observations and controlled laboratory tests. In this trial the moisture profile does not provide the sharp point of critical tension where the large pores drain and is more drawn out. I suspect that this is due to the laboratory technique using suction to draw the water from the pore spaces and maintained at that tension until equilibrium is reached (i.e.: no further moisture can be drawn from the pore spaces at that particular tension).

Clearly there are some stark differences – why? Wish I knew precisely, however, there are several possible reasons for these discrepancies:

 The field pots had been through several wetting and drying cycles including watering from the top and wetting up through capillary rise. When the soils were emptied from the pots it was obvious that there was some particle redistribution and in particular the movement of fine soil particles. It is postulated that with regular watering to saturation that this is mobilising the finer soil components.

- In several of the pots there were iron deposits at the sand/gravel interface. This demonstrates wetting and drying at the interface of the sand and gravel.
- As noted when running the hardness tests, there were indications of spatial variability even with a well-mixed soil in a controlled environment.
- In the laboratory the sample is smaller and far more homogeneous and there is less spatial variability.
- In the theory of perched water table profiles the effects of suction by the gravel layer is often discussed. It is an area that I have been sceptical of, however, this may in part be influencing the moisture profile of the field pots.
- The laboratory technique is a very controlled process. The sample is relatively small, it is wetted up through capillary rise and then suction applied at different tensions. There is minimal opportunity for particle movement.
- The laboratory test also measures the changes in soil moisture content at smaller increments and provides a high degree of precision.

I use the MRC somewhat reluctantly because there is a theory that it provides a high degree of precision in designing sand-based profiles. What has always bothered me is that if the critical point of where the macro-pores drain is not interpreted correctly then the profile may be too shallow.

TABLE 1. SAND CHARACTERISTICS

Sieve size (mm)	% Particles retained*					
	MBS	PGS	FS1	MS1	FS2	MS2
<0.053	0.8	0.5	2.8	0.7	2.2	0.5
Fineness modulus	0.94	0.91	0.94	0.96	0.87	0.97
Cu = D60/D10	1.53	1.88	2.35	2.06	1.62	2.2
Description**	U/F	MU/F	WG/F	WG/F	MU/F	WG/F
	450	223	25	869	296	1041
Infiltration rate (mm/hr	(68 – 825)	(150 – 330)	(217 – 266)	(750 – 1061)	(206 – 397)	(963 – 1147)

^{*}Sand gradings done by wet sieve analysis **U = uniform, MU = moderately uniform, F = fine

Consequently I have always erred on the side of having a slightly deeper profile, ensuring that it is likely to be drier rather than wetter.

The MRC is a useful tool when making a decision about finer sands or sands that do not comply with what we may describe as the industry standard. However, it is important to note that all laboratory tests are designed to be a repeatable method that gives us a good indication of what may occur in the field. There will always be a need to interpret the data and to put it in the context of the situation. This comes with knowledge and experience of working with different sands over many years.

In considering soil testing in general, it is a tool and not an absolute. However, it does give us an extremely important starting point. It is also essential to remember that the analysis results from the laboratory will have some inherent variability. We often see this when undertaking quality control testing on the same sand source with the same particle size distribution and there will be different results for parameters such as hydraulic conductivity and capillary porosity. This is the inherent errors that occur in all laboratories.

What is important is that the laboratory has quality control and sign-off procedures in place to ensure that these errors are kept to a minimum. It is also important to stay with the one laboratory as changing between laboratories will invariably create even more confusion. The variability of



testing results is explained in the USGA Green Section article 'Guidelines for Establishing Quality Control Tolerances' (http://www.usga.org/course care/articles/construction/greens/Guidelines-for-Establishing-Quality-Control-Tolerances/).

SAND TYPES AND THE INFLUENCE OF TURF

As a follow up to the research project on the influence of sand type on surface hardness (ATM 16.5), a trial has started to examine the effect of a turf cover on the hardness characteristics of two different sand types. The primary aims of this project

Following on from his sand research project, John Neylan has set up an additional trial examining the influence of vegetation cover on surface hardness and whether a sand type continues to have an influence on surface hardness once there is a mature turf cover



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TABLE 2. SURFACE HARDNESS

	17/8/14	17/9/14	16/10/14*
Grass effect		Hardne	ss (g)
Nil	134.8a**	139.5a	119a
Grass only	117.8b	118b	98b
Grass/dust	121.6ab	123.4ab	108ab
Sand effect			
FS1	121	122	102
MS2	129	132	115
	NS	(P<0.05)	(P<0.05)

*The assessment, using a Clegg Impact Soil Tester, was undertaken the day after 16mm of rain and showers on the day **Means with the same letter are not significantly different

TABLE 3. VOLUMETRIC WATER CONTENT

3311211				
	16/10/14			
Grass effect	VWC (%v/v)			
Nil	17.7a**			
Grass only	23.2b			
Grass/dust	17.9ab			
Sand effect				
FS1	22			
MS2	17			
	(P<0.05)			

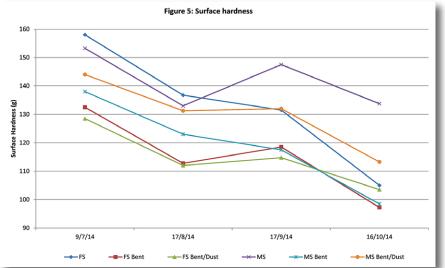
**Means with the same letter are not significantly different

are to examine the influence of the vegetation cover on surface hardness and whether the sand type continues to have an influence on surface hardness once there is a mature turf cover. It is important to note that this trial is examining the effects of soil type and grass cover and for obvious reasons cannot incorporate any other management techniques.

Based on the trial work examining eight different sand types, two were selected that represented a medium and a fine sand as well as sands that are readily available. Based on the previous work, FS1 and MS2 were selected and the characteristics are summarised in Table 1 (page 48).

Each sand type has three treatments – no grass (bare soil), grass only and grass with regular sand dustings. The pots were established with creeping bentgrass (*Agrostis stolonifera* var. *Tyee*) in April 2014 and maintained at a cutting height of about

Figure 5. Surface hardness



4mm. The dusting treatment is applied every two weeks at a rate of 0.05-0.1m³/100m² and at the time of writing there had been four dusting treatments.

The pots are tested monthly for hardness using the Clegg Impact Soil Tester with the 0.5kg weight and the flat head. When the surface hardness is measured the moisture content is measured using a FieldScout soil moisture probe. To date there has been limited data collected which has been analysed using a Two-Factor Anova. This allows the variables of grass type and sand type to be assessed independently as well as the interactions between them.

At this time the effects of the grass cover are most apparent and the bentgrass treatment without dusting is significantly softer than the bare sand (Figure 5 and Table 2). The bentgrass treatment with regular dusting is not significantly different to the sand alone or the bentgrass alone, however, the trend appears to be towards the bentgrass plus dusting being firmer than the bentgrass alone.

On two occasions there has been a significant difference in the hardness between the sands with the MS2 being firmer than FS1. This has been somewhat surprising, however, it is likely to be due to the relatively high moisture content where the MS2 sand is at its firmest when it is at a higher moisture content. The FS1 being higher in the <0.053mm fraction tends to be softer at the higher moisture content.

On the 16/10/14 assessment there was a significant difference in the volumetric water content (Table 3). The bare sand had a significantly lower volumetric water content compared to the bentgrass alone. The bentgrass plus dusting was not significantly different to the bare sand or the bentgrass alone but was trending to be drier than the bentgrass alone.

The data to date is limited and does not incorporate the normal management techniques usually employed on golf greens. However, it does confirm our field observations that the turf cover quickly has an influence on the firmness of the surface and that regular sand dustings are critical in attempting to mitigate the effect. Even with the limited data available the dustings could have commenced much earlier. An analysis of the data in relation to soil moisture content again confirms that soil moisture content is often an overriding factor affecting surface firmness and is sand specific.

Over the next few months the trial will examine the effects of drying down the profile and the increasing maturity of the turf cover. $\rlap/$ $\rlap/$

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If you have a specific area of turf management that you would like ATM columnist John Neylan to address or a particular problem at your course or facility that you would like some advice on, email your suggestions or questions to AGCSA editor Brett Robinson - brett@agcsa.com.au



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PESTS

Couchgrass damaged by mite activity exhibits shortened leaves and internodes producing rosetted and tufted growth, or 'witch's broom' effect



Syngenta technical manager Dr Mark Walker discusses the challenges of couchgrass mite management and how some new chemical options combined with new research might be able to assist superintendents and turf managers.

Ante-y challenge

ouchgrass mites are a common and at times difficult pest to manage in turf. Predominantly afflicting *Cynodon dactylon* cultivars and hybrids, they have a biology that truly lends itself to enduring resilience. There are a number of biology based factors contributing to their robust behaviour, but historically the three that have proven to be significant are:

- Breeding potential;
- Ability to respond to favourable conditions; and
- Difficulty in achieving physical contact between the mite and a chemical treatment due to their penchant for hiding amongst leaf sheaths.

From a biology perspective it is also worth noting mites are not insects. They come from a different evolutionary lineage and are more closely related to spiders. Right from the outset the message here is that expectations and information generally applicable to the majority of pests we deal with (e.g.

coleopteran and lepidopteran genera and species) often is not relevant.

Overlaid with this, and maybe it should be point four above, there has been some serious constraints in terms of genuine registered chemical control options. Some registered options have been removed from the market and, outside of this, biological controls have never really been a realistic option. As an additional complication, many of the cultural activities turf managers need to perform (or choose not to perform) to maintain a healthy turf sward can in turn actually enhance the breeding potential of couchgrass mites by making the localised environment even more suitable and supportive.

Until very recently, the future for mite management in turf continued to appear very challenging. The chemical tools available to frame an integrated approach looked as though they would remain limited and commentary from turf managers doing their best to use integrated programmes had persistent themes of correct pest identification but poor control.

Fortunately some new chemical options are now available which can now be combined with some new thinking. The option list is by no means generous and probably is better described as an incremental step as opposed to a revolution, but any advance is welcome and becomes a



'build'. A significant difference this time, is the new options are combined with a more informative use recommendation that is tailored to turf and based on better utilisation of established chemical characteristics.

PROFILE OF A PEST

To be thorough in our approach though it is appropriate that we step back and establish the facts we can depend on to form the fundamentals of future approaches. Here is what we know about couchgrass mites:

- Name: Aceria cynodoniensis SYN Eriophyes cynodoniensis. The genus to which the couchgrass mite is assigned was changed in recent times so literature you read may refer to either.
- Size: Generally not discernible to the naked eye. An eye lens or microscope is often needed to see the pest and is definitely needed for accurate identification. Roughly an adult is 0.2mm.
- Appearance: The mite appears worm-like with two sets of forward facing legs. Eggs and first nymphs are more translucent and about 1/3 size of adult; 2nd nymphs are a bit whiter and 2/3 size of adults; adults are whitish.
- Lifecycle: Can be rapid (especially under ideal conditions), moving from egg hatch to adult

- in 7-10 days, completing full lifecycle in 14 days. Adversely impacted by cool temperatures, accelerated with warming temperatures. Hindered by flooding and sometimes humidity.
- Location: Tend to hide between leaf sheath and blade or on underside of expanded leaves.

Given the management of this pest has been greatly handicapped by a singular or narrow base of permitted chemistries, point four in this list ('Lifecycle') causes concern. It is a fact that in many instances we have combined a rapid reproducer with basically repeat applications of the same treatment.

Through need rather than choice, a selective pressure has been applied to (potentially) accelerate the phenomenon known as natural selection. How far advanced this situation currently is will vary between sites, however, it would be inconceivable to think it has not started.

Evidence produced in the development programmes Syngenta has run in recent years has suggested a shift has occurred – but it is only a shift. Therefore, as a further consideration for future approaches we should assume this is a characteristic in the system we are looking to manage – and plan a programme accordingly. This clearly implies an integrated approach of chemical, cultural and mechanical controls needing to contribute to the solution, but also suggests higher doses of pre-existing chemistries would be needed.

Cultural and mechanical controls have historically gone hand in hand for mite management. Cutting heights have been a lever that has been exploited – sometimes before and sometimes after the fact. Lowering cutting heights to remove or reduce the foliar canopy that hide and protect mites and/or the practice of cutting out the witches brooms (shortened leaves and internodes causing a clustered or tufted type growth) produced when mites damage the plant's growing points, has been quite normal. The problem here is that the right thing to do for mite management may well be the wrong thing to do for turf health at different seasonal times, hence the challenge to strike the right balance.

The cultural element refers to things like the use of nutrition to accelerate recovery or outgrow the damage, and at times refers to things like the type of nitrogen being used in an effort to limit luxuriant growth that forms an attractive food source for the mite.

Irrigation that causes humidification of otherwise dry turf is a further challenge as water is essential and can get the mites very uncomfortable when pushing up localised humidity, but can actually make the environment even better for disease if applied in the wrong manner or wrong time. Simple mechanical controls such as removal of clippings rather than returning them to the turf are another step often adopted to further restrict dissemination of active mites.

Mite problems can
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mites are so small they
can hide down in leaf
sheaths using them as a
physical barrier further
limiting impact. They are
clever and well evolved,
but so are we.



Although extremely small and invisible to the naked eye, couchgrass mites can quickly cause a big headache for superintendents and turf managers

When reflecting back on past efforts there are some real positives in historical non-chemical approaches (even the unsuccessful ones) that should be noted and further fostered into the future. Firstly, at the core of all good pest and disease management programmes is correct identification. It's one of the first thing turf managers are taught in vocational training courses. In this instance it can be said efforts have been made to get this right. However, an honest appraisal should acknowledge there have been genuine limitations in pre-existing knowledge around pest identity and there has been real confusion at times over scientific names.

The number and availability of trained taxonomists able to correctly identify mite species has been greatly limited and this crisis of identity has meant the transposability of foreign literature has to a great extent been unknown. Fortunately mites do generally have quite typical patterns of damage that can be relied upon for preliminary diagnostic purposes to get us rather close to where we need to be. Whilst not a perfect situation, we must accept this isn't going to change quickly.

Secondly, all turf managers should (and definitely do) lean on their skills built over time to know how to optimise growth rates, resilience, responsiveness and health of their turf. This remains a key part to successfully managing mites on turf into the future.

Finally, chemical controls are a component of a good programme – but should not be 'the programme', ever. The positive in past experience is we have had to learn how to get the most out of non-chemical measures. Now we have an opportunity to factor in improved chemical options so we can only be better placed into the future, with the clear caveat that rotation of chemistries is now more achievable and must be a core element of the broader approach at all times.

To take the step forward that is so sorely needed however it would seem essential we pull various elements together in a genuinely integrated approach that combines some new chemical tools with the best aspects of responsible efforts traditionally employed. What might this look like and what will it involve?

RESPONSIVENESS AND MONITORING

There are sites and circumstances whereby history clearly indicates a predictable start point to a mite population build. An example worth citing is some of the ultra-dwarf couch greens in northern climes where the renovation that stimulates new growth concurrently stimulates population growth. This circumstance is reported among superintendents and is perfectly understandable.

As a general comment, however, mite management across climes is traditionally more reactive, where early signs and symptoms such as a loss of colour, a loss of vigour, inexplicable look of dryness or bunching of new growth are noted, and these represent the point where chemical intervention is employed for treatment that is 'early curative'.

In reality, the limited chemical tools available to manage mites probably still renders truly preventative programmes inappropriate. An alternate view may be that expectations need be recalibrated to accept an element of suppression at times where pressures are reduced and cultural practices actually can compensate sufficiently. This is not something that can be covered in a catch-all recommendation. This would remain a case by case situation dealt with at the discretion of the turf manager.

In all situations though the limited chemical options definitely do mean we should be more judicious, targeted and limited in our applications, with clear strategies in place that optimise management and minimise resistance risk – with hope still remaining further options are developed.

THE MITE CHALLENGE

As highlighted earlier in this article, elements of the mite biology central to its existence make their management difficult. The number of offspring potentially produced by an adult means the chances of selecting resistant individuals is raised – the whole numbers game again – its evolution working with pure probability.

The rapid generational times mean incomplete control of any given generation leaves the door open for exponential growth in the next while concurrently exacerbating the timeframes to develop resistance. Hence we often see mite problems become very big very quickly with repeat applications working less well and because these mites are so small they can hide down in leaf sheaths using them as a physical barrier further limiting impact. They are clever and well evolved, but so are we.

The general lack of predictability in timing of attack, intensity of attack and overall population growth make deciding when to launch a full programme and when to moderate back to a part (or cultural) approach difficult. Turf managers rarely get the opportunity to retrospectively critique their actions. They either got it right or they didn't, so we must at all times respect the fact that rolling the dice holds little interest.

The rapid generational times of couchgrass mites mean incomplete control of any given generation leaves the door open for exponential growth in the next while concurrently exacerbating the timeframes to develop

resistance.

The seasonal and year on year variation seen in mite populations is to a large degree a function of the widely different environmental conditions that occur through spring and summer, not to mention the microclimatic differences that occur between and within turfed areas. Again, this is why a responsible programme that has an element of risk mitigation involved should be respected as necessary and seen as justifiable.

What does a risk minimised yet responsible approach look like? Based on current information and tools it is clear the best control programmes will be multifaceted, comprising cultural, nutritional, mechanical and chemical components. Since we have acknowledged the first three have really been limited by factors outside the control of turf managers, and equally done quite well to become a larger than desirable contributor to overall control, they don't need to be looked at in the same detail as the chemical component.

The registered chemical element of the approach is where some change has occurred so let's examine what this can now look like and what benefits or improvements can now potentially be conferred.

THE MAINSTAY – ABAMECTIN

Abamectin has been the registered active ingredient that has shouldered much of the mite management load in recent years. It was, and still is, an excellent miticide. It has excellent turf safety qualities and perfect chemical behaviours in terms

of its ability to move in a translaminar manner to sit below the leaf surface. Here it acts as a sublaminar reservoir of active ingredient, waiting for the mite to feed and draw a treatment dose.

This ability to move off the leaf surface and sit below also means it has an excellent profile against most non-targets. Beneficial bugs do not feed on the turf but may walk across. Post application, when the active is below the surface, it is out of harm's way and only those pests damaging the epidermis through feeding will be exposed. Abamectin still has a major role to play in the chemical approach but now has a complementary partner to share the load.

THE NEW ADDITION - DIAFENTHIURON

Diafenthiuron is the new kid on the block – for the registered part of the turf world at least. This is an active ingredient that has been a very strong miticide in broadacre cropping situations for a number of years and all the qualities that made it so good there have been shown to readily transfer into the turf situation.

Like abamectin, it moves in a translaminar manner post application to sit below the leaf surface, reducing risk to non-targets. It tends to take a few days post-application to 'transform' into the chemically active form (i.e.: the miticidal compound) but on the other end has a greater overall longevity.

Coming from an entirely different mode of action class to abamectin, and having a limited history of use in turf, resistance should be no issue in the short-term and responsible use will hopefully allow both to have an extensive usable life in mite management long-term.

For optimised control from both products it is imperative we combine a good understanding of how and when to use these chemistries, and give plenty of consideration to the inherent qualities of each to know in what order to use them and what expectations to place on them.

Through its research Syngenta proposes that abamectin be considered a knockdown tool, with expectations on the duration of effect kept to <14 days – but no more. This may seem short and possibly does have an element of conservatism to it, but importantly does remain consistent with present day experience (note we are trying to make recommendations here that reflect reality as

opposed to idealism) and is completely consistent with established behaviour of the molecule doing the work.

If we accept this, we can then start to develop a broader understanding of sequence, timing and total duration. That is, as the knockdown, abamectin forms step one in a two-step process with the clear implication then that step two

then needs to occur somewhere before the end of the 14 days – probably a few days earlier to allow for the transformation phase of diafenthiuron.

be capitalised on, or undone, depending on attention to product placement during application. minar manner to sit then needs to occur s

All the planning, preparation and

good intention prior to the physical

application of a miticide can either

MITICIDE APPLICATION

All the planning, preparation and good intention prior to the physical application of a miticide can either be capitalised on, or undone, depending on attention to product placement during application.

So what is the desired placement? It's keeping the product a little higher and ensuring foliage is covered and small droplets roll to the leaf sheaths still wrapped around the stem. How is this best achieved? For fairways as an example, combine good nozzle selection with a slightly lower application volume than used for general foliar applications (e.g. around 350L/ha). Slightly higher volumes may be appropriate for roughs or fields with a greater height of cut.

Any product pushed to the soil will have little to no impact on the target unless directly contacting it on the way past. To keep the product a little higher and maintain the availability of doses, the inclusion of a non-ionic surfactant is essential.



New miticide diafenthiuron has recently been released onto the Australian market



Axedale Golf Club, vic

As if being a regional superintendent isn't a hard enough job, Axedale Golf Club's Glen Frewin has also had plenty of other life challenges thrown his way.

Superintendent: Glen Frewin (39).

Family: Wife Barbara, kids Riley (6) and Connor (4). Period as a superintendent: 4.5 years.

Association involvement: AGCSA (4.5 years), VGCSA.

Turf management career: Barwon Heads Golf Club (turf management apprenticeship, 1996-2000); Axedale Golf Club (casual 2003-2004, part-time assistant superintendent 2004-2009, full-time superintendent 2009-present).

Turf management qualifications: Turf Management Certificate (NMIT).

Where in Australia is Axedale Golf Club and what is the town famous/known for? Axedale Golf Club is located in a small country town 20 kilometres east of Bendigo, Victoria along the banks of the Campaspe River. The club is known for its short, yet challenging course which is set among some beautiful old River gum trees that are estimated to be 300 years old.

The course originally had sand scrape greens and over a two year period converted to grass greens which were opened in 1996. Many hours of voluntary labour were carried out by a group of willing members to implement the design plans of Kevin Hartley.

Tell us your background in turf management. How did you start out in the industry and how did you end up at Axedale GC? My career in turf management started when I gained an apprenticeship at Barwon Heads Golf Club working under my cousin and then superintendent Peter Frewin. Having an interest in golf and the outdoors, I couldn't knock back the opportunity.

Unfortunately after completing my apprenticeship I had to resign and head back to Bendigo to begin dialysis. After three years studying I picked up casual work at Axedale Golf Club two days a week. In 2003 I had a kidney transplant and 12 months later was promoted to assistant superintendent under Andrew Bowles. In 2009 Andrew moved on and I was fortunate to be given the full-time superintendent role which I have held to this day.

It sounds like you have had quite an 'eventful' life outside of turf management. As the saying goes, life wasn't meant to be easy and I have had many issues over my entire life. I am also hearing impaired which provides many challenges on its own. With my kidney problems since birth (I had one removed when I was just three months old), I have learnt to be patient and not to worry too much. I have remained positive and have tried to get involved in as many activities as possible and in turn I think this has helped to shape the person I am today.

I had a kidney transplant in June 2003 which I was grateful to receive from my neighbour Harry Long, a father of three who at that time was 50. Having been on home dialysis for 15 hours a week for three years (five hours, three times per week) the transplant certainly changed my life. I had a long

road to recovery with a long stay in hospital due to some early rejection issues, but with a change of medication, a positive attitude, massive family support, along with a very understanding employer, I have now reached 11 years with the transplant.

In 2005 I represented Australia in the World Transplant Games in Canada. It was an experience I will never forget, especially as having the chance to travel overseas was something I thought would never happen given my health issues. I represented Australia in golf (I was playing off an 11 handicap at the time) which was held at a course in London, Ontario. The Games are more to showcase to the world what a difference organ transplantation can make to people's lives. As for how well I played, I was going well for nine holes then fell off the leaderboard rapidly – I was more interested in the course presentation and turf!

How do your health issues impact your role as a superintendent? Are there any parts of the job that you can't do as a result? Some health issues still exist having had the transplant. I get tired easily and when I feel unwell I deal with it quickly to avoid it getting worse. Also, some of the medication I am on requires me to stay out of the sun. To combat this I wear long sleeves, slip slop slap and work flexible hours to avoid the heat of the day. I also need to take extra precautions when spraying chemicals.

Give us an overview of Axedale GC and some of its unique characteristics? The Axedale Golf Club is unique as it is divided by the Eppalock-Axedale Road, with 13 holes one side and five the other and a 30 metre elevation rise from the eastern river side to the western boundary. The golf course is situated on the Axedale Recreation Reserve and has a creek running through it which feeds into the Campaspe River. Being a short par 69 course with undulating fairways and tricky greens, it still provides a challenge for the golfer.

What are some of the unique features about Axedale GC from a turf management perspective? We maintain a two-grass policy on the fairways and tees – native couchgrass and *Poa annua*. We spray the *Poa* out in spring to promote the natural couch fairways/Santa Ana tees before leaving the *Poa* to do its thing in winter which has proven to provide the best playing surfaces for the golfers. Water management with the fairways is also challenging as we have two very different types of soil profile. Thirteen holes comprise a river loam while the remaining five are rocky clay soils. Both areas require different amounts of water and can prove to be testing at times to get the right balance.

Is it an easy/hard facility to manage and has that changed during the time you have been there? I wouldn't say it is a hard course to manage. Working alongside volunteers and getting them to



follow guidelines which have been made at greens committee meetings can be challenging. We are slowly working through this process to improve communication at all levels.

Take us through your turf management operations there (eg: cutting regimes, renos etc). What, if any, changes have you made during your time as superintendent. Greens are cut twice per week through winter months and rolled with a Smooth Roll once during the week to maintain a firm surface. During summer greens are cut three times per week and rolled as required. Tees and surrounds are cut once a week through winter and in summer this is increased to twice per week around tournament time/major events for presentation. Fairways get trimmed once per week in summer and as needed in winter. We rake bunkers twice per week.

What are some of the major challenges facing Axedale GC both from a turf management perspective and general club management perspective? As with all country clubs, falling memberships/green fees mean we are continually cutting back budgets. As for addressing these issues, the club is advertising to promote the game of golf in our region. The club is running junior programmes as well as social events to encourage new members. With Lake Eppalock back to near full capacity we are seeing an increase in green fee players over the warmer months due to the tourist influx.

As the only full-time member of the maintenance team at Axedale, Frewin (below) is assisted by casuals David Bravo (above left) and Chris Atkinson



Axedale golf course is situated on the Axedale Recreation Reserve and has a creek running through it which feeds into the Campaspe River. Its undulating fairways and tricky greens provide a stern challenge



Up until 1996 Axedale had sand scrape greens. It took course staff and volunteers two years to switch them across to bentgrass



Outline any major course improvement works recently completed and/or highlight any ongoing or future works that the club is undertaking. The club has undertaken many smaller projects to improve the course and its amenities including asphalting three cart paths, extending the machinery shed, levelling and returfing tees and irrigation extensions on fairways.

The major focus at the moment is a complete bunker refurbishment programme where we are upgrading drainage, reshaping where required, grassing bunker faces and adding new (white) bunker sand. This project will improve the visual appearance of the course and also the playability of the bunkers as they now drain quickly (the old bunkers would hold water for days following a rain event). Grassing the faces will improve the maintenance side of things as we don't have the staff to brush sand up the faces on a weekly basis. We have completed 15 bunkers with 11 to go.

Water is obviously a critical issue for any golf course. How is Axedale faring in the water management stakes? Axedale fares pretty well in terms of available water for the course. We have an 85 megalitre water right from Lake Eppalock when we receive a 100 per cent allocation. Also the club was lucky enough to strike a deal with Coliban Water to use 12ML of recycled water (Class B) from a small plant (on site) which treats the local township. Using Class B effluent water around natural creeks and rivers needs to be closely monitored and we also undertake regular water quality testing to make sure it meets our turf requirements.

The weather and climate is always a great leveller for a course superintendent. How has Mother Nature treated the Axedale course in recent seasons? Mother Nature has sure hit us during my time at Axedale. The severe drought in the mid-2000s meant we had no water available from the river and at its height we ended up using just 15ML of recycled water for the greens in one year.

At the other end of the spectrum we had significant flooding to the course in 2011 which required a massive clean-up effort by staff and volunteers. We also had a fire in the pump station one New Year's Eve which was caused after a falling branch brought power lines down. And then we had a lighting strike blow up a decoder which caused many irrigation faults throughout the course. We're awaiting the next act...

The one product I couldn't manage my course without is... wetting agent through the injection unit. As we are a small team we don't have time to spray the product out so injecting it is a massive benefit.

What are some pros and cons of being a regional-based superintendent? Pros include a great lifestyle and less stress than city based superintendents. Flexibility with hours which suits me with my health issues. As for the cons, lower staff numbers and lower budgets to work with means it takes longer to complete projects. Also being responsible for a small team you are always on call day and night.

Are expectations of course presentation and conditioning any less than that placed on your metropolitan counterparts? No, we prepare the course to the best of our ability with the number of staff and budgets that we operate within. I think we provide an excellent surface to play golf on.

Do you have to be more resourceful as a regional-based superintendent? You do have to be more resourceful and I have to rely on volunteers a lot more. You have to be very clear with instructions and don't assume anything. As for being resourceful with machinery, we try to purchase machinery that is capable of doing more than one task.

If you could change one thing about your job as a regional superintendent what would it be and why? I see it as a great job/lifestyle but the one thing

The Axedale layout is unique as it is divided by the Eppalock-Axedale Road (13 holes one side and five the other) with a 30 metre elevation rise from the course's eastern river side to the western boundary



I would change is being able to play golf with the members and not talk about all the jobs that need doing around the course – just enjoy the course and all the hard work we put into maintaining it.

How important are the relationships you have with other local course supers/trade reps? The industry is forever changing and finding better ways to manage turf, so passing on ideas and suggestions is always helpful. Being part of a small team makes it harder to get to trade days/seminars so relying on reps for information is important. Reading ATM is also a good source of information too!

What are some of the more unusual requests/ things you have had to do as a superintendent of a regional course? Perhaps the most unusual was having to monitor the machinery overnight when we were getting the shed extension done. The family came out and camped for the night – the kids thought it was a great fun!

What have you got in your shed? Toro 3250D greens mower, Toro 5610 fairway mower, Toro 3280 rough mower, Toro 4100 wide area rough mower, Toro Sand Pro bunker rake, John Deere 2500 and 2500A mowers, Smooth Roll roller, Multi Spike 1200, Toro Blower (3-point linkage), Cushman utility and another with spray unit, Hi Jet tipper truck and Kawasaki Mule.



What's your favourite piece of machinery and why? My favourite piece would have to be the Toro irrigation handheld unit which I rely on daily to operate the irrigation system. Working on my own and having access to two pump stations (river and effluent) plus over 400 sprinklers on the course I have control of the entire course wherever I am.

What will be your next major purchase (and why) and what's on the wish list? The club has just purchased a new John Deere 4105 front end loader as the old loader is worn out and not powerful enough to run some of our equipment. As for the wish list, where do I start – Tru-Turf roller, new rough mower, new tipper utility...

Do you have any interesting pieces of machinery which have been manufactured or old pieces of

Axedale maintains a two-grass policy on fairways – native couch in the summer and *Poa annua* in the winter



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Axedale Golf Club was hit hard by floods in 2011



equipment that you keep alive through necessity? The one piece of equipment which we have saved is an old Ransomes 3-gang mower (3-point linkage) which we converted into a scarifier. Works wonders thinning out fairways and pulling out stolons for sprigging bare areas.

Do you think regional/country superintendents have a better work-life balance than their metro counterparts? Country superintendents do have a better work-life balance but it does take time to get the balance right. Remembering that it is still a workplace and making sure you have a life away from the course is important.

Favourite spot on your course? I would have to say checking the pumps on the edge of the Campaspe River among the River gums watching the water pass by – very relaxing!

Most pleasing/rewarding moment during your time as Axedale course superintendent? The most pleasing thing as superintendent has been that every time I have gone to the club's committee for a piece of maintenance equipment to buy, they have honoured my request and purchased it. Hopefully this continues! Also comments from visiting golfers that the course is the best they have seen it which is a credit to the staff and volunteers that help out regularly.

Best advice you have received about being a course superintendent/greenkeeper and who gave it to you. It came from my cousin Peter Frewin during a conversation we were having about my new role as superintendent and the challenges of dealing with committees and the different views of people. His advice – 'Remember, it's not your golf course!'

AT A GLANCE - AXEDALE GOLF CLUB

Course specs: 18 holes, par 69, 5298 metres. Twenty hectares of maintained turf. Greens (bentgrass 0.6 hectares), tees (Santa Ana 0.4ha), surrounds (mix of native couch/*Poa annua* 1ha), fairways (native couch/*Poa annua* 7ha), rough (mix of native couch/kikuyu 11ha). Twenty-six bunkers.

Members: 280.

Annual rounds: 7000.

Major tournaments/events: Annual tournament (August, four days), autumn tournament (March, two days) and club championships (men's September, ladies June).

Course management budget: \$100,000 not including wages.

Staff structure: Glen Frewin (course superintendent), David Bravo (mechanic/greenkeeper – casual, three days per week) and Chris Atkinson (greenkeeper – casual, one day a week) plus volunteers.

Climate/annual rainfall: Average annual rainfall is 400mm. Hot, dry summers and cold winters with regular heavy frosts.

Soil types: Greens are constructed from Moama sand. Tees are a pushed up river loam/sand mix. Fairways on the east side of the course are a river loam, whereas soils on fairways 11-15 are rocky, hard clay.

Water sources: Campaspe River (85 megalitre water right) and 12ML effluent water. Irrigation system: Toro Site Pro 3-wire decoder system, hand-held radio. Greens/surrounds sprinklers – Toro 835s valve in head, back-to-back. Fairways – Toro 830 full circle sprinklers. Grundfos pump system.

Cutting heights: Greens 3.5mm, surrounds 12mm, tees 12mm, fairways 18mm, short rough 32mm, rough 51mm.

Renovations: One major renovation in October. Half inch hollow tine then topdress and broom sand into the holes. Verti-cut

two days later, turn sand over then mat in. Mini renovation undertaken in March/April which will comprise of a needle tine and light topdress or a double slice (with Multi Spike 1200) then light topdress. We also try to verticut greens during the warmer months and have a dusting programme in place as well.

Major disease pressures and how you combat them: Winter diseases are kept to a minimum with preventative fungicide applications. Low inputs of N, monthly applications of calcium and potassium, dew removal and slicing to improve drainage seems to help during the winter. During summer we get a lot of rhizoctonia and pythium in the greens. We apply a preventative application at the start of summer then treat as required. We try to implement cultural practices where possible but with low staff numbers and limited time this is hard to put into place.



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KUBOTA ENTERS AUST TURF MARKET AS BARONESS DISTRIBUTOR



The LM315 diesel-powered triplex mower, one of the many Baroness turf maintenance machines now available through Australian distributor Kubota

ubota Tractor Australia has entered the golf and sports turf equipment market as the new Australian distributor of Japan's premium turf equipment brand – Baroness. The new alignment will see Kubota able to offer a full range of fine turf maintenance machines to complement its existing range of front deck and zero turn mowers, walk mowers and brush-cutters, RTV utility vehicles and tractors.

Heading up Kubota's new Golf and Sports Turf Equipment business is Steve Burgin who has served for many years in the service and product support environments within the golf and grounds markets. Burgin believes the combined product offerings of Kubota and Baroness will challenge previously held alliances in the industry.

"Kubota equipment is known for its simplicity, reliability and performance, and Baroness very much fits that same Kubota pattern, being simple, yet performance and reliability driven," says Burgin. "So Kubota and Baroness is a perfect partnership to bring to the Australian turf industry."

The Baroness line-up starts with its walk-behind greens mowers (available in fixed head – LM56 and LM66 – and floating head – LM54 – models) that are well optioned and ruggedly constructed. All gear drive ensures smooth power flow to the reel,

groomer (which is reversible), rear roller brush, drive drum and transport wheels. An optional independent catcher system takes weight off the cutting head to maintain consistent height of cut.

Progressing to triplex greens mowers, Baroness has a range of petrol and diesel powered models with 2WD and 3WD options. All are essentially hybrid style machines with mechanical reel drive. Reel drive speed is variable and on-board backlapping is standard.

Several options in place of cutting heads are available including fixed and rotating brushes, vertimowers/de-thatchers and spikers/slicers. All these attachments feature 'tool-free' fitting and take about 15 seconds each. Cutting heads can be optioned with groomers, rear roller brushes and 7, 9 or 11-blade reels which make this model suitable for tees and surrounds when fitted with treaded tyres.

Baroness currently features two fairway models – the lightweight LM2400 (which is new to Baroness and currently a minimum spec machine as further development continues) and the midweight LM2700. Well established in the US, UK and European markets, the LM2700 can be optioned with 22" or 26" cutting heads, groomers, catchers, rear roller brushes or scrapers, a sunshade and protective net behind the operator to prevent golf ball strikes. The mower range is also complimented with a bunker rake (SP05 model) and two aerators (TDA1200 suited to greens and TDA1600 suited to fairways).

For more information about the Kubota Golf & Sports Turf Equipment range, contact Steve Burgin on 0418 300 790, email baroness@kubota.com.au or visit the website www.kubota.com.au.



SYNGENTA INSTIGATES NSW BEETLE AND WEEVIL MONITORING PROJECT

AGCSA Gold Partner Syngenta has embarked on an extensive beetle and weevil monitoring research project in Sydney this season. The survey is in response to an intense 2013/14 scarab beetle season which saw many parks and golf courses around NSW sustain serious damage to turf surfaces.

A number of the neonicotinoid insecticides appeared to provide very little protection in the face of this severe pressure and as a result of this Syngenta has embarked on a scientific insect adult population survey across the greater Sydney region.

Syngenta has installed 10 light traps around the greater Sydney area with the principal aims of:

- Collecting data on insect adult population activity and peak times of flight throughout the vear:
- Building an up-to-date population distribution survey for all the relevant turf scarab (beetles), weevil (snout nosed beetles) and gryllotalpa (mole cricket) pests; and
- Developing a better understanding of insect life cycles and, therefore, better understanding of treatment timings.

The project was launched at Monash Country Club in Sydney's northern suburbs on Thursday 18 September with Dr Henk Smith outlining the aims of the project which will run for the upcoming spring/summer period.



UBIMET SYSTEMS NOW ON COURSE



Leading international private weather service provider Ubimet has launched two solutions into the Australian market to help benefit golf course maintenance crews and golfers. Ubimet's advanced Lightning Detection System (LDS), which has the capacity to detect lightning within a 150 metre accuracy, and 'Weather Cockpit' – are now both available to Australian superintendents and turf managers.

Using data from Ubimet's meteorologists, the LDS distributes text messages and emails to ground staff in the eventuality of a lightning event, which minimises risk to staff and, in turn, reassures patrons. For day-to-day course management, Ubimet provides golf courses with Weather Cockpit which allows clubs to access site-specific weather information unique to the topography of their course.

Timely alerts and warnings are also distributed direct to maintenance staff through text messages and emails, which helps ensure contingencies are activated in the event of adverse weather conditions. Additionally, the Weather Cockpit helps superintendents, turf managers and their staff to manage their day more effectively by giving them

confidence that the weather won't disrupt essential maintenance practices.

For more information about how your club can benefit from Ubimet's range of meteorological solutions, contact Paul de Boer on (03) 8488 7610 or visit www.ubimet.com.

SUPERINTENDENTS DRAW ON LINKSMAP INNOVATIONS

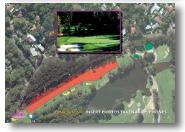
A number of course superintendents around Australia are taking advantage of On-Pin's LinksMap product, a web-based course management system with an interactive aerial map of their golf course.

As simple to operate as using an iPhone, one of the important benefits of LinksMap is the retention of golf course knowledge. "Effectively, the LinksMap programme allows golf clubs and superintendents to take maps and golf course information off the wall and load the data into the computer," says On-Pin's Craig Helmers.

LinksMap can be used in conjunction with online reports to manage the course's logistical requirements and succession planning. It also provides a live, constantly evolving, permanent online library of golf course knowledge.

The ability to put golf course mapping and imagery to use is what sets apart LinksMap from other mapping products. With the capacity to measure point to point and areas, the course superintendent has greater control over their course







The LinksMap web-based course management programme provides a live, constantly evolving, permanent online library of golf course knowledge

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Living Turt's new Turf Forensics initiative brings together the company's My-Climate and My-Results apps

The Toro GreensPro 1240 roller

and can produce accurate predictions of chemical and pesticide use, plan new features and cost out maintenance programmes.

LinksMap also enables superintendents to upload images of the course into the programme to keep a track of improvement works undertaken as well as the ability to add notes to give a permanent running history of maintenance, installation and upgrades. On-Pin can also take irrigation maps and files and reproduce them on LinksMap to give superintendents and turf managers a one-stop library of all course information.

For more information about On-Pin's LinksMap programme visit www.on-pin.com/linksmap.

TURF FORENSICS ON THE CASE



Living Turf has launched its Turf Forensics initiative, a turf risk management system that brings together the company's My-Climate and My-Results apps.

Having already established My-Results, an online turf pathology system for turf data management and analysis, Living Turf recently unveiled the complementary My-Climate app which together forms the basis of the company's online predictive turf management solution for turf managers. Available for download from Apple iTunes and Google Play stores, My-Climate is a climate analysis system that uses statistical leaning mathematics to determine the relationship between weather variables and disease/weed development.

My-Climate's 'Complete Climate' package includes the purchase of permanent and onsite Rainwise weather station and soil sensing equipment. Communication hardware is also included to screen data through proprietary algorithms, providing early warning on the risk of outbreaks of disease, weed and other useful climatic indicators via smartphone, tablet or computer.

The ultimate goal of My-Climate is to provide detailed information necessary to improve treatment decision making, to control cost, prevent waste and reduce pesticide use.

"Turf Forensics is a result of expert contributions from turf scientists, practitioners, academics, mathematicians, weather and communication experts, IT specialists and entrepreneurs," says Living Turf director Rob Cooper. "My goal is to keep building the functionality and accuracy of Turf Forensics in order to market it internationally and to broader markets including, but not limited to, agriculture and production horticulture."

For more information about Turf Forensics and the new My-Climate app, visit www.turf-forensics. com.au, email service@livingturf.com or call 1300 556 116.

TORO EXPANDS GREENSPRO LINE

Toro has upgraded its GreensPro greens roller range with the addition of the GreensPro 1240. The new model features a number of operator-friendly enhancements and improved mechanical components, making it simple to use and durable.

The GreensPro's independent, articulating smoothing heads follow undulations, preserving natural contours on the green while delivering a smooth putting surface. The smoothing heads overlap, providing consistent roll across the swath of the machine. The smoothing rollers are split so each end can rotate independently to avoid scuffing the turf while turning.

The GreensPro 1240 features dual-direction seat adjustment and tilt steering to fit almost any operator. The new transport system features a QuickLatch coupler, making transportation from green to green quick and simple.

For more information about the Toro GreensPro 1240, visit www.toro.com.au or contact your local Toro representative.

INDUSTRY APPOINTMENTS



NEUENDORF, WHATMAN BOLSTER LIVING TURF'S QUEENSLAND TEAM

Living Turf has continued its recruitment drive in recent months with the appointments of **Ashley Neuendorf** (pictured) and **Max Whatman** to the company's new

Queensland business unit. The appointments came shortly after those of former Windaroo Lakes course superintendent **Dave Morrison** and **Angus Mahoney**. Neuendorf can be contacted on 0407 100 505 or aneuendorf@livingturf.com. Whatman can be contacted on 0499 100 400 or mwhatman@livingturf.com.

TURFCARE SOLUTIONS SIGNS UP ECOTT

Gold Coast-based Turfcare Solutions has announced the appointment of new sales consultant **Mark Ecott**. Ecott joins the Turfcare team with many years' experience in the turf industry, having been involved with golf course construction and maintenance on warm- and cool-season turf varieties. Completing his greenkeeping apprenticeship at Windaroo Lakes, Ecott spent time at Indooroopilly

GC, Brookwater and The Glades before heading to the US through The Ohio Program. After a short stint back on home soil, he then worked on a number of courses in Singapore, Malaysia and Dubai before finding his way to Vietnam, where he was regional manager/agronomy consultant for Sport Turf Solutions. Ecott can be contacted on 0407 125 071 or mark.turfcaresolutions@gmail.com.

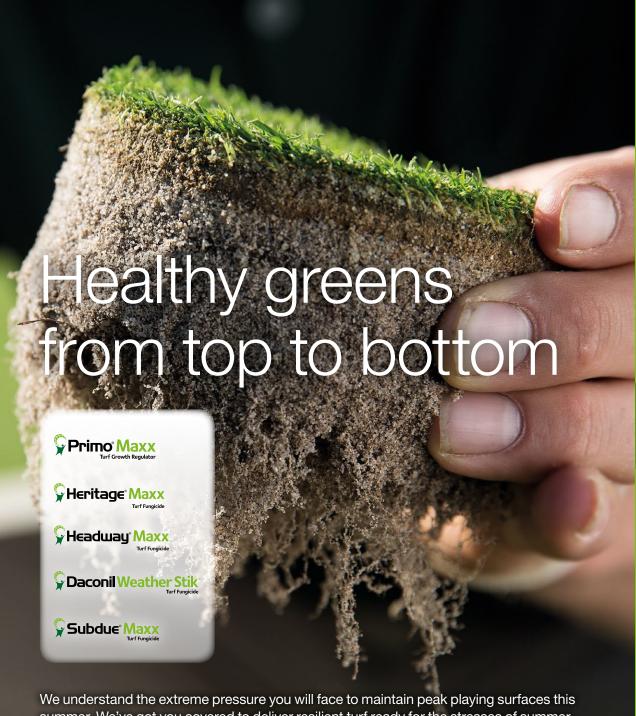


WRIGHT STUFF FOR ADVANCED SEED

Advanced Seed has appointed **Tim Wright** to the position of sales representative based in Melbourne. Wright joins Advanced Seed with a strong turf background including the role of senior greenkeeper

at Riversdale Golf Club under course superintendent Dave Mason in recent years.

Wright, who has completed Certificate III in Sports Turf Management and the Diploma of Horticulture, will be primarily focusing on Advanced Seeds' reseller and landscaping markets throughout Victoria. Wright can be contacted on 0408 995 279 or tim@adseed.com.au



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In early October the
Federal Government
announced the formation
of Horticulture Innovation
Australia Limited to replace
Horticulture Australia Ltd.
Turf Australia's business
and industry development
manager Richard Stephens
looks at the new entity and
what it will mean for the



turf industry.

www.turfaustralia.com.au

HAL becomes

n 7 October 2014 Federal Minister for Agriculture Barnaby Joyce announced the registration of Horticulture Innovation Australia Limited (HIAL) as the new research, development and marketing body to support Australia's \$9.5 billion horticulture industry.

The establishment of HIAL followed a recent independent report into the performance of Horticulture Australia Limited (HAL) which recommended a change to a new, grower-owned research and development company. It also followed the start of a Senate Inquiry into industry structures and systems governing the imposition of and disbursement of marketing and research and development levies in the agricultural sector.

HIAL will be led by five board members from the old HAL board plus four new board members appointed by the Federal Government. HIAL will be grower owned and will incorporate two research and development (R&D) investment pools:

- Pool 1 for industry specific levy funds, such as turf: and
- Pool 2 for strategic co-investments, comprising
 of a series of individual investments funds
 based around key medium- to long-term R&D
 programmes. A potential individual investment
 fund relevant to the turf and nursery industries
 could be 'Greener Cities'.

The current government matched funding for industry R&D levy funds, up to 0.5 per cent of the Gross Value of Product (GVP), will be maintained for each industry. Matched Voluntary Contribution (VC) funding will be replaced by 'strategic co-investments' where contributions from industry, government,

commercial and academia may be eligible for matched funding if they are invested in a nominated strategic fund from Pool 2.

HIAL will create new industry advisory mechanisms to replace the previous Industry Advisory Committee (IAC) structure. It is anticipated that the advisory mechanisms for Pool 1 will include a cross section of relevant industry stakeholders, including grower representative bodies, to advise on matters such as priorities, communications, investment strategies and the like. The Pool 2 strategic co-investments are likely to be guided by expert steering panels relevant to the individual funds.

As part of becoming a grower-owned organisation, HIAL will establish a membership register that will comprise growers and other parties that participate in Australia's horticulture sector. This is an important next step in developing a mechanism by which these members can (if eligible) activate their voting rights. It is anticipated that larger growers, who pay more levy, will have increased HIA voting rights.

In addition to developing a grower register, HIAL may also consider developing regionally based consultations that would be held across all key growing areas in all states and territories on a regular basis.

Despite the demise of HAL and the creation of HIAL, Turf Australia will continue to represent the interests of turf growers and the industry as a whole. Turf Australia will work with HIAL to clarify and develop effective strategies for national turf R&D and marketing strategies as well as ensuring appropriate governance and reporting arrangements.

The Turf Australia Board has already met with the Nursery and Garden Industry Australia Board and initiated a process of developing joint initiatives under the 'Living Green' banner. One area where we may be able to collaborate is in the development of best practice or accreditation that covers both the production of turf and nursery plants as well as their installation. Such a programme would also require significant collaboration with the landscape sector and would provide a professional image to the living green industries.

Another potential area for collaboration is gathering and compiling data on the many social and economic benefits of 'Living Green Space'. We all know the community receives many different benefits from the living green space that turf and nursery plants provide. However, in order to influence policy in regard to building and urban development, as well as insuring the new HIAL has a strong ornamental focus, we need real facts and figures on the social and economic value the community receives from the products we produce.

NEW HEAVY VEHICLE LEGISLATION

Legislative changes which transfer heavy vehicle regulations from state bodies to a new national body could be catching out heavy vehicle operators unaware of new regulations that are now being enforced. The Heavy Vehicle National Law and Regulations (HVNL) came into effect back in February and aims to have 'one rule book' for all heavy vehicles operating on Australian roads.

It sees many regulations and laws relating to heavy vehicles (over 4.5 tonnes gross vehicle mass), such as operating conditions, fatigue management and work diary requirements, now coming under this new law and framework which is overseen by a new authority, the National Heavy Vehicle Regulator (NHVR). The HVNL created one set of national fees, penalties and infringements that apply to drivers, operators and others in the supply chain, regardless of where they operate.

While touted as a national law, the regulations do not affect heavy vehicle operators in the Northern Territory or Western Australia. At this stage, both jurisdictions retain their own regulatory bodies as authorities for heavy vehicle operators. The aim of the HVNL is to provide a set standard for vehicles across most state and territory borders.

While previously vehicles may have been legal with their loads or modifications in one state, as soon as they crossed the border, they became illegally loaded and may have been penalised under the destination state's law. With the HVNL in place, the loading requirements for vehicles are being standardised to avoid this. Similarly, work diary requirements have been standardised and all drivers operating within 100km of their home base are now required to complete the diary as fatigue management rules have been standardised.

Some aspects of heavy vehicle operations, however, remain in state regulatory body hands. These include heavy vehicle registration, inspections, driver licensing and all matters related to the carriage of dangerous goods.

State and territory police, and authorised officers (such as RTA and VicRoads), will continue to enforce heavy vehicle offences, however, these



will be under the new national law rather than under the state in which the driver is pulled over/inspected.

The NHVR has created fact sheets to explain the requirements under the Heavy Vehicle (Mass, Dimension & Loading) National Regulation which covers bulk handing and load limits, an issue raised by some turf industry members. Heavy vehicle operators should visit https://www.nhvr.gov.au/mdl and download the fact sheets for more information. Growers and truck operators can consult the NHVR for clarification with loading limits, vehicle modifications and legal loading requirements by visiting www.nhvr.gov.au or calling 1300 696 487.

Turf growers need to be across the new Heavy Vehicle National Law and Regulations which came into force earlier this year

IMPROVING EFFICIENCIES AND EROSION CONTROL

t is pleasing to report that given the fine weather a considerable amount of construction is underway in Queensland requiring large amounts of quality natural turfgrass. This high level of sales is causing a shortage of turf due to the high amounts of DIY and project-based construction underway. As always it is important to select the correct species to suit the project and discussions with an 'Accredited Turf Producer' will assist in this regard.

Turf Queensland is currently installing and monitoring various productivity-improving equipment on three pilot farms in southeast Queensland as part of a State Government project targeting water, energy and fertiliser efficiency. Due to roll out in north Queensland mid-2015 as well, the project includes the use of Precision Agriculture equipment such as soil and crop mapping, irrigation scheduling, pump and irrigator assessments, rain loggers and moisture probes, fertigation as well as monitoring productivity improvement from base data of labour and waste reduction.

Erosion control remains high on Turf Queensland's agenda and we remain committed to a sustainable outcome for the benefit of all. Nutrient and sediment run-off along with riverbank erosion into our water catchments have been proven to be a major source of contamination on the Great Barrier Reef.

Qualified scientific investigations indicate that the main source of excess nutrients, sediment and pesticides from the Great Barrier Reef catchments is from agriculture, with an estimated 5.7 million times of suspended sediment washed into the Great Barrier Reef catchment annually as a result of human activity. On top of this, the annual estimated load of dissolved inorganic nitrogen of 5000 tonnes indicates that millions of dollars worth of fertiliser is being wasted.

It is obvious that we must do a lot more to reduce our nutrient sediment run-off and erosion control to improve water quality and help coral recovery. Natural turfgrass has shown it is highly efficient and effective in controlling erosion on coastal beach fronts and holding back and retaining nutrients and sediment on the property rather than into the catchments.

Most regional councils in Queensland, especially along the coast, have now picked up on this benefit by specifying and utilising the correct species of quality natural turf to assist in this regard. This ranges from salt tolerant, roadside verges, drains, residential properties, open space parklands and sporting facilities such as golf courses and sports stadiums. There are over 100 different warm-season turf species available (not all commercially) and there are a number of species to suit and assist in this regard.



JIM VAUGHAN CEO, TURF QUEENSLAND

STANZ STANZ Sports Furt Association NZ Inc.

Christchurch's Hagley Oval will host the opening game of the 2015 Cricket World Cup



s we approach the 2015 Cricket World Cup, New Zealand's host venues are very busy preparing their facilities. There is no better example of this than the development of Hagley Oval, an important anchor project in the Christchurch Central Recovery Plan. The park is now in stunning condition and is awaiting the honour of hosting the opening game of the tournament between New Zealand and Sri Lanka on 14 February.

The Northern Districts Cricket Association recently held a grounds seminar at Seddon Park with a range of speakers. Ian McKendry, general manager of grounds and facilities from NZ Cricket, discussed the state of New Zealand pitch conditions while Karl Johnson from Waikato Stadium gave a great presentation on his recent experiences managing turf in the heat of Dubai. This may not be such a leap for our Australian peers but was somewhat of a contrast for Karl from managing coolseason grasses in the temperate Waikato climate.

STANZ has recently partnered with the NZGCSA and NZ Sports Turf Institute (NZSTI) to sponsor an industry award for our outstanding turf management graduates. Those trainees that excel during their formal qualifications are shoulder-tapped to sit an additional exam and we would like to congratulate the following sports turf graduates and their respective training sites for achieving this high standard:

- Jason Venema (Wellington Regional Stadium Trust)
- Shaun Davies (Eden Park Trust Board)

Elsewhere, there appears to be a developing trend towards tighter agrichemical restrictions imposed by land owners or managers such as councils, sports clubs or school boards. While we appreciate the need for this environmental direction, there is a lot of variation between venues and in some cases a lack of logical policy.

To this end STANZ is currently asking for feedback from its members as to the restrictions they are working under. It will be interesting to see the extent of the variation and there may be an opportunity here to steer the decision makers towards some of the more logical agrichemical policies.

Finally, the executive committee of STANZ was recently refreshed at our recent AGM. Ian McKendry has stepped down from his role as chairman this year due to commitments with the impending Cricket World Cup, but has thankfully remained on the executive. The full committee is:

- Chair: Kellie Rose (PITO)
- Vice-chair: Darren Kalka (Auckland Council)
- Executive committee: Ian McKendry (NZ Cricket), Will Bowden (Sports Surface Design and Management), Alex Glasgow (NZSTI), Chris Todd (Parkland), Warwick Sisson (Recreational Services Ltd), Matt Creswell (Parks and Recreation Infrastructure Ltd), Jared Carter (Bay Oval Trust) and Russell Smith (Palmerston North City Council).

VISITING NZ ENTOMOLOGIST INVESTIGATES ASW

Late September saw a visit to Canberra and Sydney by Mark McNeill of AgResearch in New Zealand. McNeill (pictured below) is a pasture entomologist based at Lincoln Research Centre in Christchurch whose research and extension activities includes biological control and biosecurity of pasture insect pests in New Zealand. McNeill was in Australia to present a research paper on biological control of the Argentine stem weevil (*Listronotus bonariensis*) at the 50th Australian Entomological Society Conference held in Canberra.

While in Sydney, well known turf industry member Gary Beehag organised visits to several golf courses for McNeill to gain experience on golf course conditions typical of Sydney and to conduct monitoring and detection for Argentine stem weevil (ASW) adults. Beehag is conducting some private research and scientific literature reviews of ASW and has co-operated with McNeill previously

in collecting adult weevils from Sydney golf courses for detailed biochemical DNA investigations into ASW populations.

"Argentine stem weevil is a major insect pest of grass pastures throughout New Zealand and is now recognised as an insect pest of golf course putting greens," says McNeill. "Our recent investigations have examined several golf courses for weevil population studies and collection of adult weevil for more detailed studies into their biology and population relationships."



KELLIE ROSE CHAIR, STANZ

GCSAQ 🖎

ery dry' is the catchphrase of many Queensland superintendents at present with most in the state's south east having missed out altogether on their spring rains. The usually reliable thunderstorms haven't eventuated which has put significant pressure on water storages and the irrigation systems designed to maximise our most precious resource!

Here at Indooroopilly Golf Club (Brisbane) we are down 40 per cent on the rainfall received last year and the year before that! What makes matters worse is that the forecast doesn't hold much hope for the situation to change any time soon.

True to their nature, Queensland turf practitioners are a resilient bunch and despite these sorts of challenges they just get on with the job of managing around the problem, renovating their various places of work with the eternal optimism that all will turn out well in the end.

Climate change is an unknown entity and is proving very difficult to plan for. It is yet another variable that keeps us on our toes trying to present outstanding results in an ever-shifting playing field. From what I've seen and heard around the traps, the results certainly speak for themselves with our very professional members carrying out their craft with aplomb!

Speaking of ploughing on, **Brian Cox** from Murwillumbah Golf Club has been busy over the last six months fitting up a new irrigation system complete with pump station and even using a home grown EF for the poly pipe, again showing the initiative and 'can-do' attitude often found among our members. Likewise, **Shaun Cross** at Byron Bay Golf Club is continuing apace with his fairway conversion (from Queensland blue couch to Wintergreen), while we eagerly await news of the new appointment of a replacement for the irreplaceable **Andrew Smith** at Yamba!

On the committee front, the GCSAQ has been busy formulating a full calendar of events for 2015, with some innovative ideas forthcoming that should really peak our members' interest and hopefully result in well-attended days.

New GCSAQ committee man Shaun Cross is being proactive in the Northern Rivers area and in November is planning a course 'walk and talk' with Shane Heaney at Ocean Shores Country Club. This will be a great way to view the work Shane has done (and is planning to do) at Ocean Shores.

These types of days will aim to 'spitball' ideas with the attending supers, 2ICs and greenkeepers in the more informal setting of a course walk. It is hoped it will provide an opportunity for the host super to tap the ideas of other interested likeminded professionals.

Another similar type of day is planned later in November at RACV Royal Pines Resort for a close-



up look at the work being carried out by Graham Marsh Golf Design and superintendent Lincoln Coombes. Keeping in mind this venue will again host the fast approaching Australian PGA, we hope to enjoy Lincoln's hospitality and to gain an insight into the highs and lows of undertaking such a challenging course rebuild in between hosting a major golfing event.

Also being held in November is the Queensland Golf Industry Forum at Victoria Park Golf Club. The day-long forum includes a panel discussion on the future direction of golf and our role in the industry. This will be followed by individual breakout sessions with representatives from the GMA, PGA and AGCSA discussing further topics more in relation to each field. It should make for an informative and worthwhile day.

And finally, Brookwater Golf and Country Club superintendent **Ben Geeson** and his crew received a visit from royalty recently. Down Under for the Asia-Pacific Amateur Championships held at Royal Melbourne Golf Club in late October, St Andrews Links' director of greenkeeping **Gordon Moir** stopped by the Greg Norman-designed course.

Fresh from having recently overseen preparations on The Old Course for the European Tour's Alfred Dunhill Links Championships, Moir visited a number of courses en-route to Melbourne where he was one of a significant delegation from The R&A.

In what was his first trip to Australia, Moir met with Ben who was able to show him around the stunning layout and discuss the similarities and differences in regards to managing warmseason grasses, bunker construction, green size and irrigation. The Brookwater crew was also in the midst of course renovations which gave Moir the chance to see how renovation practices differed on Brookwater's couchgrass surfaces.

In closing I hope everyone manages to get some respite over the Christmas period (weatherwise that is) and recharge for what may again prove to be a challenging 2015.

> CHARLIE GIFFARD PRESIDENT, GCSAQ

St Andrews' director of greenkeeping Gordon Moir (centre) with Brookwater superintendent Ben Geeson and his crew during his visit to the course in October



STA GRADUATE AWARD WINNER SOAKS UP US EXPERIENCE

013 STA National Sports Turf Graduate of the Year Award winner Andrew Spicer recently returned from the United States where he visited a number of major sporting venues as well as the Toro Sports Fields and Grounds Forum.

The STA Turf Graduate of the Year award is sponsored by Toro Australia, which recognises outstanding graduates working within the turf industry. Spicer, who works for Wyong Shire Council where he helps to look after 36 sporting ovals, won the award at the 2013 Australian Turfgrass Conference on the Sunshine Coast. As part of the prize for winning the award he had the opportunity to attend the Toro Sports Fields and Grounds Forum which is conducted both in Australia as well as the United States.

Award winners are also given a mentor, who can assist them in their career development and who can offer advice on industry related topics and life in general. Michael Smith from Scotch College in Melbourne was chosen for this role and accompanied Spicer on the trip.

The Sports Fields and Grounds Forum took place at The Toro Company's headquarters in Bloomington, Minnesota and was attended by representatives from universities, councils, municipalities, sports stadiums and colleges from around the US. The programme included roundtable sessions and product testing/demonstrations of Toro commercial equipment and irrigation products (see photo top).

Both Australian attendees enjoyed the conference, the visit to Toro headquarters and the networking opportunities and discussions with other grounds managers from across the country. "I had never heard of the underground heating and cooling systems they use on a few stadiums over there to maintain a healthy soil temperature," reflects Spicer. "Many of the guys at the conference had baseball

fields so it was interesting to hear how much time and effort goes into maintaining a baseball field."

The Toro factory in Tomah also provided a great insight to see how the machines are made and how much planning and research and development is required. "Typically when we purchase a piece of machinery or a ride on mower, it is delivered to site, we complete an induction, grab the keys and away we go," says Smith. "I was astounded as to how much background work is required, from what starts out as an idea or concept to assembling every part piece by piece on the production line at the factory."

Spicer and Smith also went to Denver, Colorado to visit Sports Authority Field at Mile High, home of the Denver Broncos NFL team, and Coors Field, home of the Colorado Rockies Major League Baseball side (pictured below). They also dropped by Dick's Sporting Goods Park soccer stadium in Colorado, home of the Colorado Rapids.

"I never thought I would be standing in the middle of the Denver Broncos stadium," says Spicer. "And seeing the world-class baseball stadium for the Colorado Rockies was equally amazing. There wasn't a single blade of grass out of place."

Spicer says his experience as Sports Turf Graduate of the Year had been amazing and encouraged other apprentices to make the most of the opportunity if it came their way. "I got nominated for the STA NSW Graduate of the Year Award through Kurri Kurri TAFE where I did my studies," explains Smith. "My teachers Mark Crawford and Pete Upfold are great blokes. I didn't think I would be nominated let alone win, so when I did I was very surprised to say the least. The other nominees were smart greenkeepers and could easily have won."

After his nomination, Spicer had to prepare several presentations on his work and TAFE studies and present these to a selection panel for both the NSW and national awards. He says he learned a lot going through this process, especially in the area of public speaking at various conferences, council meetings and awards nights. His advice to future graduates is to talk to as many people as you can.

"Everyone experiences the same problems and has different ways of fixing them," reflects Spicer. "Greenkeepers are always up for a chat and graduates should take any opportunity that comes their way. You will learn so much from talking to other greenkeepers, more then you can learn in a classroom."







STANSW SIA

t is hard to believe that 2014 is nearly over, where has the year gone? It has been such a mixed bag of weather patterns this year which has certainly provided its challenges to all sports turf managers. We will be wrapping up the year with our annual Golf Day on 10 December at St Michael's Golf Club and we look forward to catching up with many people in the industry on the day. All the details are available on the website and everyone is welcome.

The STA SNW Annual General Meeting was held in mid-September and I am honoured to again take on the role of president for a further 12 months. I would like to thank the committee for their hard work over the past year. I would also like to welcome three new members to the committee – Rex Sullings, Terry Ahern and Murray Fraser.

Murray was on the committee several years ago and it is great to have him and his experience back on board. Both Rex and Terry are new to STA so we look forward to working with them and hopefully they can provide some new fresh ideas. I would also like to welcome **Keith McPhee** to the position of vice-president alongside **Graeme Logan**. Last year was Keith's first on the committee and his dedication has been rewarded with this position. The full committee for 2014/2015 is:

- President: Chris Chapman (Evergreen Turf)
- Vice-presidents: Graeme Logan (ANZ Stadium) and Keith McPhee (Maitland City Council)
- Treasurer: Julie-Anne Davey (Vermont Sands)
- Committee: Frank Dempsey (Chemcert), Nadeem Zreikat (Colin Campbell Chemicals), Dave McGlynn (Strathfield GC), Brad Reynolds (Mid-Western Regional Council), Grant Thomas (Sustainable Turf Renovations & Equipment), Terry Ahern (TC Advantage), Rex Sullings (Aqueduct Consultancy) and Murray Fraser (M. Collins & Sons)

REGIONAL SEMINAR

Career development, recycled water, weeds, budgets and the fast growing world of football were the topics in the STA NSW Regional Seminar held at the fantastic facilities of Hunter Region TAFE, Kurri Kurri on Tuesday 28 October.

The day started with **Grant Maule** sharing his story of working at Redstone Golf Resort, Rossland in Canada. He was involved in every aspect of the construction and faced many challenges during this position. As well as sharing some great photos and information on the project, Grant's message, particularly to younger turf managers, was to take a chance and look at opportunities that can develop your career both here in Australia and overseas.

Following on this same theme of career development, Michael Smith from Melbourne's Scotch College talked about the STA Sports Turf



Graduate Program, sponsored by Toro Australia. Michael was selected as the mentor for our 2012 STA NSW winner **Andrew Spicer** who went on to collect the national award. The two recently returned from an amazing trip to the US attending the exclusive Toro Sports Field and Grounds Forum (see page opposite for more on their trip).

The seminar continued with a very detailed and informative forum on recycled water on sports turf. It covered all aspects of setting up and using recycled water from personal health, turf and soil health and regulations. Steve Harris (The Vintage Golf Course) then gave detailed information on the processes that he has gone through to set up the system at his club. Following the forum we looked at the role weeds play in determining soil health and saw a great demonstration on a variety of weeds.

We were fortunate to have **Brett Campbell** from Football Federation Australia who gave a great presentation on the importance of a quality playing surface for football games. Brett acknowledged the vital role of the turf manager for the game's success. The final presentation came from **Jyri Kaapro** who discussed the importance of properly analysing problems to determine the most efficient and effective treatment.

The day wrapped up with some machinery demonstrations by Evergreen Turf, Ventrac and Supaturf and many thanks go to all attendees, sponsors and **Chris Booth** and the staff at Kurri Kurri TAFE.

Elsewhere, we are now planning our schedule for 2015 to ensure we can offer our members as many opportunities as possible to continue to learn and develop their skills and knowledge. The STA NSW Committee will work on developing options that will get education and resources to our members in different ways to ensure we access as many members as possible. We welcome feedback from all our members on what they would like to get out of their association.

CHRIS CHAPMAN PRESIDENT, STA NSW



The STA NSW recently held its Regional Seminar at Kurri Kurri which included machinery demonstrations from Evergreen (top) and Ventrac (above)

fter a cold, wet winter in South Australia, spring has been dry and warm. Most clubs are into full irrigation mode already with no forecast of rain on the radar which is a little concerning.

The South Australian Golf Industry Awards night was held recently with the SAGCSA handing out three awards. Trainee of the Year was awarded to Luke Merchant (The Vines of Reynella Golf Club) who represented the SAGCSA in the final of the AGCSA Graduate of the Year Award at the Gold Coast conference.

The Excellence in Turf Management Award was bestowed upon Tim Warren (Adelaide Shores Golf Complex) who has recently taken on the superintendent role at Links Lady Bay on the Fleurieu Peninsula. Finally, the Distinguished

Service Award was won by long-time Berri Golf Club superintendent Kym Traeger who recently retired from the club after some 35 years at the helm. The SAGCSA congratulations all three award winners.

In late October, The Grange Golf Club (superintendent Richard James) hosted a Supers Forum where about 15 superintendents came together to discuss relevant and important topics concerning our industry. Our last general meeting for the year will be in early December at Blackwood Golf Club (superintendent Stephen Pellatt). Hope everyone has a good spring and all the best for what should be another challenging summer.

> BARRY BRYANT PRESIDENT, SAGCSA



n August the STA Qld held its inaugural STAQ Open Day at John Paul College in Brisbane's south. With the possibility of showers looming, fortunately the Bureau got it wrong and it turned out to be a perfect Queensland winter day for an outdoor event.

This event was a change from our annual partner's day format. This year anyone involved in our trade, from all walks of greenkeeping life schools, councils and stadiums to football, hockey and golf clubs - were all invited along to see presentations and demonstrations from our current sponsors. This day was open to non-members.

In the marquee we had presentations from three of our partners. Matt Roche (ASTC) spoke about field benchmarking, Alisa Brvce (SESL) discussed

the results of soil tests taken from the college's main oval, while Des Warnock (Batphone/Plant of Health) discussed soil health. Meanwhile, out on the Greenlees Park ovals and their surrounds, our association partners set up displays and demonstrations.

The best thing about using a venue like John Paul College is that each of our partners can carry out live demonstrations. There were demos of topdressers, mowers, moisture sensors and sprinklers, while the chemical and sand companies applied their products a few weeks in advance of the Open Day and were able to show the results to the attendees.

The most recent STA Qld event, and last for 2014, was the annual bus trip held in October. The day kicked off with a visit to the newly constructed AFL complex at Burpengary. Albert Robinson, from Moreton Bay Regional Council, gave a talk about managing the project from the early consultancy stage through to construction and handover. He discussed some of the challenges faced and applauded ASTC for their input towards the end of the project in enforcing the specification and project hold points.

Next stop was Doomben Racecourse where Jim Roberts gave a talk on track maintenance and an overview of the upcoming redevelopment of the Eagle Farm racetrack. On our return to Golf Central, superintendent Ray Lawrence explained the construction and ongoing maintenance of the facility. A great lunch was provided and some of our members worked it off with a hit on the driving range.

MARTYN HEDLEY VICE-PRESIDENT, STA QLD

ON THE MOVE



Ethan Bell: From assistant superintendent to superintendent Wangaratta Golf Club, Vic.

Rob Biddle: From 3IC to assistant superintendent Avondale Golf Club, NSW.

Brenten Coulthard: From superintendent Growling Frog Golf Course, Vic to superintendent Mandalay Golf Club, Vic.

Gareth Hammond: From assistant superintendent Avondale Golf Club, NSW to assistant superintendent New South Wales Golf Club, NSW. **Brett** Hawkey: From superintendent Sanctuary Lakes Golf Club Vic, to turf team leader Geelong Grammar, Vic.

Mark Holmes: From groundstaff to assistant superintendent Patterson River Country Club, Vic, replacing Mark Harkness who has joined Victoria Golf Club.

Shaun O'Leary: Appointed superintendent at Pacific Golf Club, Old replacing Graham Sims who stepped down mid-2014 after 31 years.

Rod Tatt: From superintendent Woodlands Golf Club, Vic to superintendent Yarra Yarra Golf Club. Vic.

Tim Warren: From superintendent Adelaide Shores. SA to superintendent Links Lady Bay,



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