

Turfgrass



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MANAGEMENT JOURNAL

2016 Emirates Australian Open

Royal's race against time

Architect insight

Gil Hanse on RSGC masterplan, superintendents and Rio

Capital improvement

New surface for Westpac Stadium

Future-proofing

How will your course look in 5, 10, 20 years' time?

'Scary beautiful'

Kingston Heath puts on world class show





While the cool spring did the turf surfaces few favours, it did mean the heathland bloomed later than normal and right on time for the tournament



Kingston Heath assistant Jarrod Castle and volunteer Jacob Burridge change holes on the 4th

Liam Small (left) and Paul Locke cut the practice green ahead of the opening round of the World Cup



when the mercury finally crept above 30. Add to that heavy spring rains (in total the five months to the end of October saw Kingston Heath record nearly 400mm) and Mead was wondering what he'd done to deserve such rotten luck.

"We just couldn't win with the couchgrass," reflects Mead. "It was one of the most difficult preparations I've had for a tournament. If we didn't have the tournament it would've been ideal – there was no heat stress on the bentgrass, no handwatering of greens needed or any of those sorts of pressures. Our biggest issues were the lack of control with the *Poa* and the cool spring which meant we never got the recovery on the fairways. It was very frustrating.

"You get sick of talking about it, but like a lot of other clubs we have been really struggling with *Poa* control on our warm-season surfaces in recent times. We've had a lot more success on the greens over the past 6-12 months and they're probably cleaner than the fairways! We've tried different things on the fairways but nothing seems to be working. Fortunately the club have been really supportive and we communicated to them right the way through the issues we were having. And they can see that it's not just us. They play at other clubs and see there are similar issues at those courses too.

"About 2-3 months out from the World Cup we had a lot of thin areas of couch due to wear

and tear over winter which we didn't do anything about because we expected them to grow over. But because it was so cool they never did. As a result we started pushing the couch harder and harder but we started getting some fertiliser burn on the lush new foliage coming through. It seemed that every time we put something on we were damaging the couch. It got to the stage where we just had to let them be and even a week and a half before the tournament we still had some visible burn marks which thankfully had gone by the time it started.

"The only additional thing we did that we hadn't planned on was an extra application of iron and dye to try and heat the leaf up and get it moving because we weren't getting any response from our granular. I'm not sure whether that really worked or not. But they came okay by the week of the tournament after a couple of warmer days. They were always going to be a good surface but we didn't quite have the density there that we would have liked. The ironic thing is that post-tournament those thin areas became the thickest areas!"

FEELING THE HEAT

The fun didn't end with the fairways and it was the turn of the greens in the days immediately leading up to the tournament to give Mead some further frustration. Up until the weekend before the tournament, Mead had the greens right where he wanted them. A thankfully dry November meant he had been able to fine-tune moisture levels and achieve the trademark firmness and bounce that Melbourne's sandbelt greens are renowned for.

But on the Saturday and Sunday, just as the first of the 28 two-man teams for the World Cup were arriving, so too did the heat. On Saturday it hit 34, with the hot, still conditions providing the first real litmus test for the bentgrass that season. That was followed by 38 and howling northerlies on Sunday and then, just to again prove that bad things happen in threes, that evening 11mm of rain fell across the course and temperatures plummeted to 18. As well as softening the greens, the rain and heat triggered a flush of growth which slowed them down and right the way until the opening round Mead was still chasing green speed.

"Again it was very frustrating," recalls Mead. "Up until that weekend we had the greens right where we wanted them, but the heat and the rain undid all that unfortunately. That Saturday was the first real heat we had had and I was very mindful of it damaging the bentgrass, so we had a lot of guys out handwatering. Then it got to 38 on Sunday! We didn't cut the greens at all that day and just nursed them through. They actually got through better that day than Saturday.

"But then we got the rain, a massive flush of growth and the speeds dropped down to 10. We didn't want to over-react and pull them back up to 12 straight away so we just slowly brought them back up. We had planned to just single cut at 3mm in the

morning and roll in the afternoon but that ended up changing a bit and some days we double cut in the morning and cut select greens in the afternoon.

"Overall, we were very happy with the way the course looked when the tournament started, but we weren't quite happy with the way it was playing. The greens were pretty slow at the start but by the end of the tournament they were back to a level where we were happier with them."

FLICKING THE SWITCH

While not a lot went right for Mead in the lead-up to the World Cup, there was one aspect of his preparations that did. Back in June, Kingston Heath made the headlines on social media when 1116SEN radio presenter and former professional golfer Mark Allen posted a photo on Twitter of an SGL (Stadium Grow Lighting) artificial light rig stationed on Kingston Heath's famous 3rd green. The photo created quite a stir and prompted a flurry of discussion throughout the industry with Mead fielding a number of calls from his fellow superintendents to see what he was up to.

Artificial light rigs have become commonplace at many major sporting arenas around the world in recent years. Melbourne's Etihad Stadium was among the first in Australia to adopt the technology, with the Melbourne Cricket Ground (MCG) and ANZ Stadium quickly following suit. Their use on golf courses, however, is almost unheard of (with the exception of Augusta National), but with one problematic green in particular Mead decided to get innovative.

Kingston Heath's 3rd green, which played as the 4th during the World Cup, has always been a problem child, with Mead and his crew constantly having to micromanage it compared to the others. The smallest green on course, due to its undulations there are only three pinable areas. As a result there is a lot of wear and tear, especially on the back right section of the green. In addition, because it's a short par four, most second shots hit the green hard and leave a lot of pitch marks. Despite being taken out of play regularly during winter as part of the club's rotation policy (Kingston Heath has 19 holes), it has remained a battle to get a consistent surface.

According to Mead over the past 20 years the 3rd green has been re-turfed four times and with the prospect of a fifth looming, after the winter of 2015 the decision was made to look at alternate methods. The club investigated a number of options – everything from SubAir units, fans and underground heating – before deciding to look further into growth lights. Mead subsequently spent time with MCG arenas operations manager Tony Gordon learning about the benefits they provide and armed with that information went to the Kingston Heath committee which approved the purchase of 12-metre long SGL rig and generator. All up they cost \$50,000.

Mead officially flicked the switch on the rig in the first week of June and between then and a month



Kingston Heath's iconic 15th. The A1 bentgrass greens were kept at 3mm for the World Cup

out from the tournament rotated its usage around the green, with priority on the pin locations. The rig covers an area of 50m² and ran between 8-10 hours per day (primarily overnight – the generator is hooked up to a timer) and also during the day when the hole was out of play. Mead says employing the rig was very much trial and error, but the end result vindicated the decision to go down a path that no other golf club in Australia has before.

"We saw a massive difference with the surface on that green through the winter," explains Mead. "As Tony (Gordon) told me when we were doing research into them, the light rigs don't grow grass, they maintain what you've already got. That's the biggest thing we saw – the surface didn't go backwards at all over winter and the turf jumped out of winter a lot quicker than in the past. We also used it on the new clubhouse putting green to assist with wear and tear."

Volunteers (from left) Jason Whelan, Mal Grundy and Kiwis Matt Ellis and Jared Mcpadden



WORLD CUP OF GOLF – KINGSTON HEATH

Superintendent: Hayden Mead.

Assistant superintendent: Jarrod Castle.

Turf technician: John Angliss.

Turf: **Greens:** Penn A1 creeping bentgrass (HOC 3mm); **Surrounds:** Santa Ana couchgrass (7mm); **Fairways:** Santa Ana and Wintergreen couchgrass (9mm); **Tees:** Wintergreen and Santa Ana couchgrass (5mm); **Roughs:** Mix of couchgrass varieties (50mm).

Preparations: After the flush of growth due to the heat and rain, green speeds were down to 10 on Tuesday. With the Pro-Am on Wednesday, greens were given a morning single cut and afternoon roll. Ahead of the first round, the greens were double cut and then single cut in the afternoon, with the 1st, 8th, 9th, 10th and 11th also rolled. For the remaining rounds greens were single cut and stimped between 12-12.5.

Tournament crew: 33. A total of 14 volunteers joined the Kingston Heath maintenance crew for the World Cup, among them course superintendents

Mal Grundy (Murray Bridge GC, SA), **Ben Tilley** (Headland Golf Club, Qld) and **Paul Locke** (Freeway GC, Vic), as well as assistant superintendents **Aaron Dale** (Tocumwal Golf Club, NSW), **Adam Fry** (Kooyonga GC, SA), **Jacob BurrIDGE** (Peninsula Kingswood CGC), **Jason Whelan** (Barnbogle Lost Farm) and **Matt Ellis** (Royal Auckland, NZ).

Bunker rakers: In addition to the course volunteers, Mead also arranged for senior greenkeeping staff from other Victorian clubs to act as bunker rakers. Not wanting rakes out on the course during the tournament, the club sought approval from World Cup organisers to have a bunker raker walk with each group. Among those to rake bunkers were superintendents **Adam Lamb** (Barwon Heads GC) VGCSA president **Mat Poultney** (Green Acres GC), **David Warnaar** (Warrnambool GC), **Matt McLeod** (Cobram-Barooga GC), **Chris Allen** (Keysborough GC), **Ryan Irwin** (Waterford Valley) and **Steve Hewitt** (13th Beach)

Far right: Scottish seasonal greenkeeper Gareth Braid cuts the 18th green surround with the fairway crew looming large in the background

Right: Volunteer Bentley Conn attacks Kingston Heath's bunkers



"We also trialled the rig on some of our championship tees to help bring the couchgrass out of dormancy a little quicker, but didn't really get a great result. People have the idea that the rigs actually heat up the ground, but it's the additional light which is the main benefit. So, we've definitely seen a huge advantage and will be using it again this year from about April onwards. It does take a few man hours throughout winter to move around and set up, but from the results we have had to date it is well worth the extra effort."



by the PGA of Australia's Andrew Langford-Jones and World Cup of Golf executive director Matt Kamienski. Langford-Jones, a member of Kingston Heath said: "I'm pretty lucky in that I get to travel from tournament to tournament and see some great courses, but can I just say the course here this week is simply world class. All the players are telling us that and you should all be immensely proud of what you have achieved."



Aaron Dale (Tocumwal GC) was one of 14 course volunteers at the World Cup of Golf

'SCARY BEAUTIFUL'

Regardless of all the challenges faced by Mead and his crew, by the time Danes Thorbjorn Olesen and Soren Kjeldsen had lifted the rather cumbersome World Cup of Golf trophy aloft on the 18th green on Sunday, it was unanimous that Kingston Heath had turned on a show befitting the world stage. Players, officials, spectators and commentators alike all marvelled at Kingston Heath's presentation, both in terms of the playing surfaces and the incredible landscape which was on full display.

Olesen, after his Friday round, stated: "It's one of the best courses I've ever played, no question about it. We've been talking about it all week; you could play this course for the rest of your life every day. It's a pleasure to be here." Ian Baker-Finch, who is always one to make special mention of the efforts of the course superintendent and their crew during his commentary, even sent a text message to Mead early on in the tournament congratulating him on how good the course looked.

At the end of their final round presentations Mead and his tournament crew gathered in the sheds for one final breakfast before being addressed

Kamienski echoed those sentiments and also teased a little regarding the impending announcement of the Presidents Cup which returns to Melbourne in 2019: "I take my hat off to you guys. You are the hardest workers out there and what you've put out there this week for the best players in the world is phenomenal. Kingston Heath has made a presentation to host the Presidents Cup in 2019. We haven't made a decision yet on the venue, but I can tell you right now, before I came down here I would have said 99 per cent that we were going to Royal Melbourne. After this week it's definitely going to be a much harder decision and that's a testament to what you guys have done with this golf course."

However, it was Spain's Jon Rahm who would come up with the quote of the tournament. Rahm, who turned professional after finishing as the low amateur in the 2016 US Open and who went on to collect his first US PGA Tour win this January, encapsulated perfectly the feelings of most players: "Well, the golf course is absolutely beautiful. It's scary beautiful. I think the bunkering on this course is probably about as good as I've ever seen in my life." 🙌



Adam Fry came across from Adelaide's Kooyonga Golf Club to volunteer for the tournament



The Kingston Heath World Cup crew with tournament victors Thorbjorn Olesen (left) and Soren Kjeldsen from Denmark

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The right hand side of the 1st green at Kingston Heath is just one example of the successful regeneration works that the club is currently undertaking as part of a comprehensive vegetation masterplan

WORDS AND PHOTOS: PETER MURRAY AND HAYDEN MEAD, WITH BRETT ROBINSON



Botanic beauty

The course aside, what makes Kingston Heath truly one of the world's most unique golf establishments is its vegetation which was on full display when the World Cup of Golf visited last November.



Kingston Heath horticulturist Peter Murray

It's fair to say that Kingston Heath Golf Club horticulturist Peter Murray probably has a love-hate relationship when it comes to major golf tournaments. While on the one hand it's great to see the course presented at its immaculate best for the world's elite players, for the unique floral community which Murray helps to nurture and maintain it can be a very stressful time.

Murray has been responsible for Kingston Heath's vegetation since arriving at the club in 2010 and together with Jake Hartley (who is currently doing an apprenticeship in conservation land management) ensures that the club's prized vegetation is preserved, protected and enhanced. Murray is passionate about the club's landscape and plant community and rightly so as it houses some rare and beautiful species.

Kingston Heath's vegetation is renowned within the Melbourne sandbelt region and is classed as mainly 'sand heathland' to 'damp heathland'. These classes are becoming increasingly rare as urban sprawl encroaches on their habitat. Many of the plants that belong to the 'sand heathland' group can be found at Kingston Heath, among them *Epacris impressa* (common heath) which, not surprisingly, is represented on the club's emblem.

There are a few other species of 'heath' that also call Kingston Heath home. Although in small numbers, these species are currently being propagated and slowly reintroduced in selected areas across the 60 hectare site. The club works heavily with local indigenous plant nurseries Greenlink Sandbelt and Bayside Nursery to help

bring these species back and to date they have been used in over 10 revegetation sites on the course, mostly as part of works to tee carries and out of play areas.

Epacris impressa is not the easiest plant to propagate and has been one of the success stories for the club. This species was down to just a single individual in 2010, however, the plant is now in abundance with over 80 stands around the course. With further plantings planned this year the population will be well over 100.

There are many other plants growing at Kingston Heath that could be considered rare outside of the course. With initial low numbers of these plants, over the past six years they have been slowly reintroduced thanks to the efforts of Murray and the local nurseries. These include *Astroloma humifusum* (cranberry heath), *Acrotriche serrulata* (honey pots), *Leucopogon virgatus* (common beard heath), *Monotoca scorparia* (prickly broom heath) and *Hibbertia riparia* (erect guinea flower), as well as hakeas and many species of orchid.

Pultenaea dentata (clustered bush pea) is the only rare Australian plant at Kingston Heath and very rare in Melbourne with only a few colonies remaining. This plant has been propagated since 2012 and the club now has a large number in the nursery and in the ground, as well as a good seed bank. The *Pultenaea* re-appeared in 2011 after some soil disturbance during a revegetation project. Not knowing what the plant was, Murray installed a tree guard over the plant and waited for it to flower before getting it identified. It was taken to Greenlink

Sandbelt with manager Louise Door giving it the botanical 'thumbs up'. The *Pultenaea* is short-lived so it produces vast numbers of seeds, which explains why it is so rare.

When undertaking any revegetation works, planning starts about 18 months ahead of work to ensure the plants can be grown or ordered from nurseries. The preferred option is to use cuttings and seed that have been collected from the course so the providence of the plant is assured.

PROTECTION AND RESTORATION

Since 2014, Kingston Heath has implemented a vegetation master plan which has seen a vast amount of work completed around the course to enhance the landscape. The document covers all proposed revegetation works as well as the club's plan to increase areas of fine cut turf to reduce thick couchgrass roughs. All works have been approved by the club's General Committee and each year Murray and course superintendent Hayden Mead prioritise what works will be done (the plan will likely run through until 2019).

A key component of the master plan is the revegetation of selected areas and to date nine tee carries (on holes 4, 7, 8, 11, 12, 13, 16, 17 and 18) have been completed along with seven other areas around the course. Two of the most successful areas to be revegetated include the 7th tee carry, once a very wet and weed-infested part of the course, along



with an area around the greenside bunkers to the right of the 1st green.

Murray rates the latter as one of the most satisfying carried out as part of the plan to date. Completing the work in 2014, this area comprised the region's typical 'grey sand' soil types which can sometimes be compromised if removed or replaced. The sand heathland species only like the grey sands to grow in or else they struggle to survive. After planting of this area was completed, the area was watered well and with good follow up rains flourished. The area remains easy to manage as far



Above: *Pultenaea dentata* (clustered bush pea) is the only rare Australian plant at Kingston Heath

Above left: Many of the plants that belong to the 'sand heathland' group can be found at Kingston Heath, among them *Epacris impressa* (common heath). In 2010 this species was down to just a single individual but now is thriving

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The 17th tee carry is just one of nine such areas revegetated over the past two years as part of the club's landscape master plan



as weeds go as the grey sands are low in nutrient which means weeds struggle while the heathland plants thrive.

Given the amount of work that has gone into enhancing Kingston Heath's landscape over the past two years, when it was announced that the World Cup of Golf was to be played at the course, Murray set in place a plan to not only have the landscape at its best for the tournament but also to protect it. In addition to weeding out all the indigenous vegetation areas in the lead-up to the tournament, Murray also made the call to actually remove select plants from the course and place them in the onsite nursery. Murray explains:

"With the tournament in mind, we made the decision to remove between 20-30 plants that had the potential to be damaged by the spectator galleries," says Murray. "Most plants can handle being trampled or damaged, but some of the more difficult to grow species don't respond too well. The *Epacris impressa* and *Pultenaea dentata* for instance are both very sensitive. Those plants that we removed from the course before the World Cup were put into large pots and placed in the indigenous plant shade house and will be replanted in 2017 when the cooler months arrive.

"The protection of these plants was not difficult as we had planned well in the past as to the

direction of the gallery traffic and not to plant into any busy areas. These areas are generally roped off to members after a revegetation project to protect and essentially harden off the plants. Although these ropes are removed for a tournament, it's only the players and not the gallery who can walk through the vegetation. Understanding spectator movement for a tournament is paramount for the plants' survival and I consulted with Hayden regarding any specific areas we needed to protect or have roped off from the public.

"Thankfully the World Cup resulted in very few casualties. During the tournament Jake and I would monitor the rare plants to make sure they were not dry or struggling with the additional traffic. The plants that were damaged will not be replaced in the same area. But in saying that, the areas that were affected have started to regrow and it actually shows that damage can have a good effect, similar to burning the site or pruning the plants. These areas are now well on their way back following good rains and there has been a good flush of new growth."

AT ITS BEST

While Mead was lamenting Melbourne's cool spring which made it difficult to get his warm-season surfaces at their very best, for Murray it proved to be a blessing in disguise. The heathland flowered almost a month later than normal due to the mild conditions and helped to spectacularly frame the course right on cue for the tournament.

"The plants generally look their best in late October, but with the tournament being the last week of November the timing could not have been better and showed the vegetation at its best," says Murray. "The later flowering meant the appearance of the course was excellent with the indigenous vegetation being well framed by the fairways and coastal tea tree (*Leptospermum laevigatum*) in the background. The spear grass (*Austrostipa mollis*) was in full flower with the seed head giving a great show."

Looking ahead, 2017 will see a continuation of the vegetation master plan with the 19th hole, constructed back in 2005, currently being reviewed. If works do go ahead, the hole will likely be completely revegetated. Work will also continue with rebuilding tee carries and introducing more sand heathland plants back onto the property. 🌱

Epacris impressa (common heath, white flower) and *hibbertia riparia* (erect guinea flower, yellow)



Bossiaea cinerea (Showy bossiaea)



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The 2016 Emirates Australian Open last November was the 15th occasion that Royal Sydney Golf Club has hosted the country's national tournament. With the impending redevelopment, it will not likely host the Open again until the early 2020s. Pictured is the 9th

Royal Sydney Golf Club course superintendent Steve Marsden is normally a picture of resolute calm, but as ATM editor Brett Robinson writes even he was feeling the nerves somewhat in the build up to the 2016 Emirates Australian Open.

Royal Sydney course superintendent Steve Marsden



Royal's race against time



It was the first question each day, it was the last question each day and it was probably a question that Royal Sydney Golf Club superintendent Steve Marsden even dreamed about most nights in the lead up to last year's 2016 Emirates Australian Open – "How are the soil temperatures Steve?"

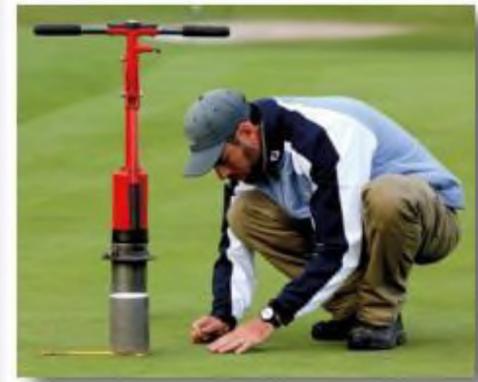
Ask Marsden, who has been at Royal Sydney since December 2012, what one of the most important aspects of his job as superintendent is and he'll tell you it's communication – communicating with his talented, well-drilled crew, communicating to management and the club's plethora of committees and subcommittees and communicating with the most important constituents of all – the members. As Marsden will also tell you, Royal Sydney members are passionate, extremely knowledgeable and like to be kept informed.

So with club getting ready to host the 2016 Emirates Australian Open last November, Marsden, as usual, went about providing his regular updates on how preparations were progressing, discussing everything from renovations and cultural practices to how they would be fine-tuning the playing surfaces for the tournament itself. As part of that Marsden

was also very open about the challenges he and the crew were facing and one particular aspect soon became quite the discussion point throughout the membership.

Just like his Kingston Heath counterpart Hayden Mead who was preparing his course for the World Cup of Golf a week after the Open (see article on page 6 for more), Marsden was pretty comfortable with where things were at heading into winter. Despite a few issues with couch mite and the level of wear and tear he knew the course would cop during the cooler months, the course had otherwise been put to bed in pretty good shape. A planned application of slow release fertiliser went out on all couchgrass surfaces in early September and it was only a matter of time until soil temperatures warmed up and triggered the new season's growth.

Come the end of October, however, that still hadn't happened. As a result, a second, unplanned granular fertiliser was hastily being applied to the fairways, surrounds and isolated areas of rough along with follow-up foliar feeds. A cooler than normal spring meant Royal Sydney's warm-season grasses weren't responding and with the nation's most



Foreman Steve Mallyon sets the pin on the 13th ahead of the third round

PHOTOS: BRETT ROBINSON

prestigious tournament a few weeks off, the mood around the turf care facility was understandably tense as everyone watched and waited.

"I'm sure we (the senior staff) all felt some pressure at different times and I know we all wondered whether we'd get there," admits Marsden. "It was a very tough spring and a real challenge to get the turf density that we needed off the back of winter. It was just one of those things. If we didn't have the tournament we wouldn't have been so concerned. It would've been, 'Well, that's just the spring we've got, it is what it is.' But when you have the Open just a few weeks out and you are struggling for density, suddenly those things become more pressing.

"Soil temperatures were low and we didn't see the increases that we would normally expect. We felt like we were doing all we could with extra applications to get the turf moving and get that density, but it felt like we were fighting it constantly. We really focussed on our plant nutrition, making sure the plant was healthy. We also got knocked around a little bit by couch mite which came off the back of last summer and the autumn months,

even though we carried our insecticide applications deeper into the cooler months to ensure we had good rough density.

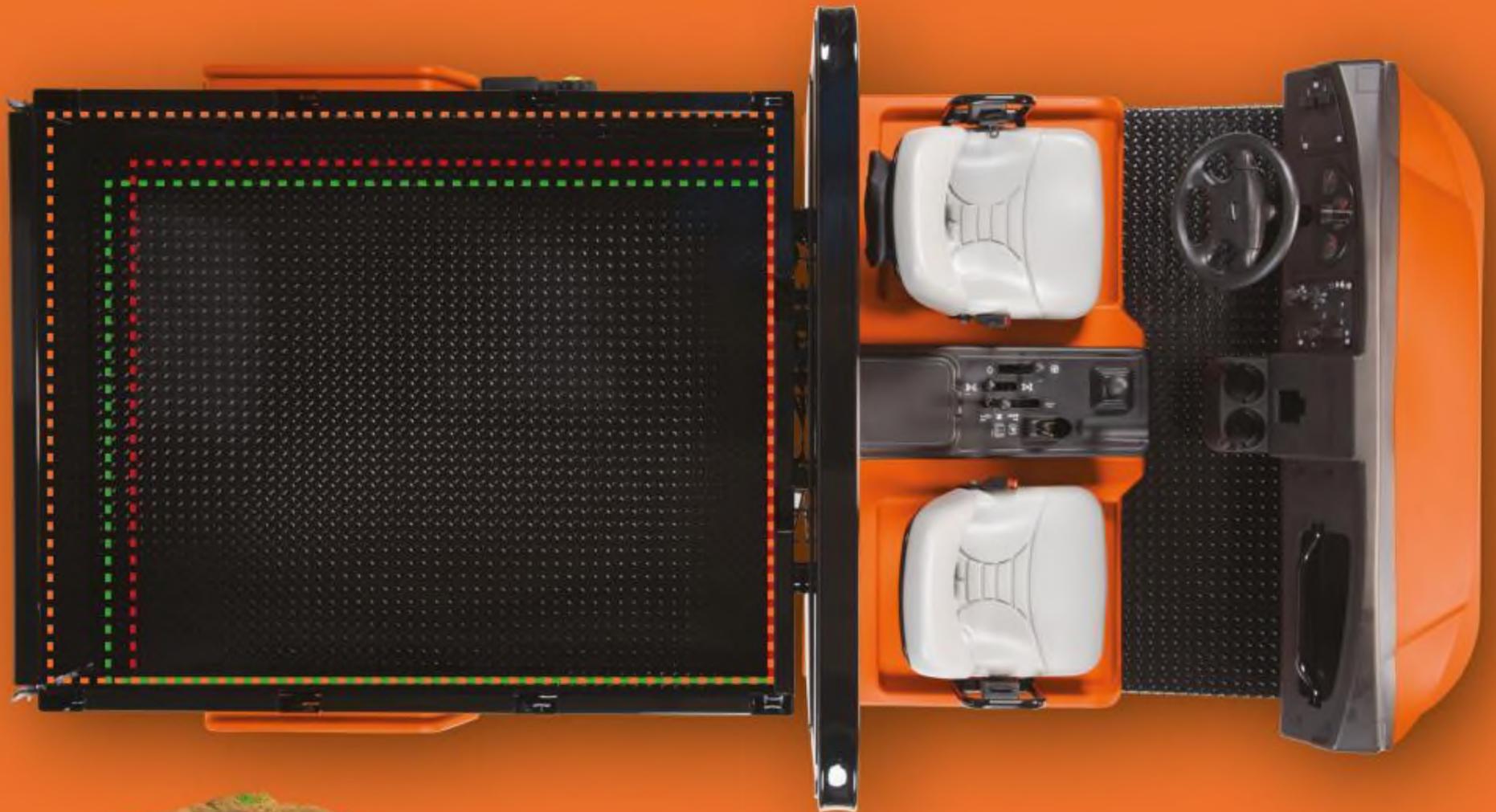
"But Royal Sydney is a busy club and the wear and tear, not just through golf but from our own maintenance activities, means the course does get

CONTINUED ON PAGE 19

Foreman Jon-Paul Wood hand waters the 18th green surround after a warm second round



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Take a bow – the 2016 Emirates Australian Open tournament crew

2016 EMIRATES AUSTRALIAN OPEN – ROYAL SYDNEY

Superintendent: Steve Marsden.

Senior staff: In between the 2013 and 2016 Opens, there were a number of changes to the RSGC senior staff. Marsden restructured the assistant superintendent role following the departure of Cameron Stuart and now has two assistants directly underneath him – **Adam Marchant** (who has been at the club 13 years) and **Jake Gibbs** (who joined from Wollongong GC in late 2015). Marsden also appointed new foremen in **Steve Mallyon** (ex-assistant at The Lakes) and Welshman **Jon-Paul Wood** whom the club sponsored from the UK. Says Marsden: "We've certainly hired some quality people in the likes of Jake, Steve and Jon-Paul. Having two assistants has given us more effective coverage of our operations and provides more support to the foremen and broader team." **Turf technicians:** Ian Widocks and Lance Hahn. **Irrigation technician:** Mark Young (Dog, as he is affectionately called by the crew, has been at the club for 37 years).

Tournament crew: As he did in 2013, Marsden again opened up the RSGC turf care facility to volunteers. A total tournament crew of 66 prepped the course, among them 24 volunteers who came from as far afield as Canada, Scotland and New Zealand. Among the volunteers were course superintendents **Dan Cook** (Elanora CC, NSW), **Mark Spraggs** (Club Taree, NSW), **Andrew Wright** (Gisborne GC, Vic) and **Brad Ronan** (Nambucca Heads GC, NSW). Comments Marsden: "I've been fortunate to be involved at other tournaments and the networking and camaraderie that are built over what is a really long week for everybody is such a great experience. I always remember my first major tournament – the 2003 US Open at Olympia Fields – and what an amazing time that was. It's nice to now be in a position to be able to share a major event with others in our industry."

The Turf: Greens: Penn G2 creeping bentgrass/*Poa annua* – 2.6mm. Green speeds were around 11.5 across the tournament. Greens were monitored religiously for speed and moisture content and

depending on those readings, along with where pin placements were, cutting regimes were adjusted on a green by green basis to achieve consistency across all greens. Some were single cut, some double cut and others cut and rolled. Turning boards were used, something that Marsden instituted in winter to take the pressure off the collars and edges of the greens (the practice is utilised across all turf areas at RSGC). **Surrounds:** Wintergreen couchgrass – 9mm; **Tees:** Santa Ana couchgrass – 7mm; **Fairways:** Wintergreen couchgrass – 9mm; **Roughs:** Mix of couchgrass varieties – 55mm.

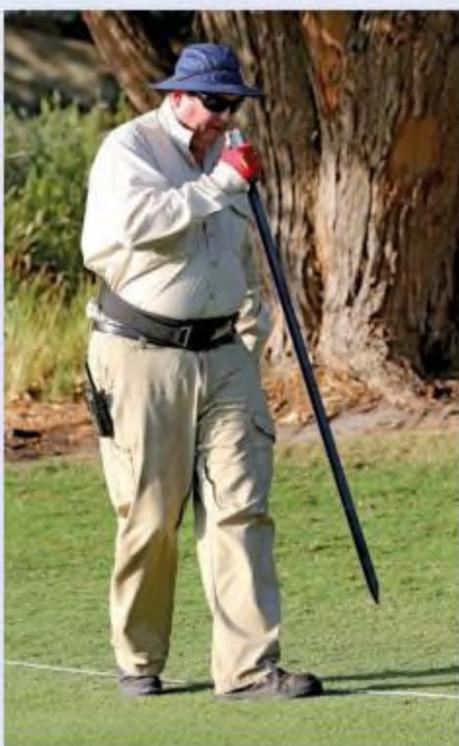
Preparations: A slow-release fertiliser was applied to all fairways, surrounds, tees and rough in early September after a scarifying and topdressing (500 tonnes of sand) of all fine cut couchgrass surfaces. Due to the cool spring conditions and resulting slow response of the Wintergreen, a second granular fertiliser application was made to the fairways, surrounds and isolated areas of rough in late October. An application of foliar fertiliser was also applied to fairways, surrounds and the step cut. Greens were aerified with ½" hollow tines, core holes washed out, topdressed and soil amendments applied at the end of August. Ongoing foliar nutrition programme on greens along with Primo after they had recovered from renovations and leading into the tournament. Intercept programme on greens to assist with controlling *Poa annua* seed head. Dusting of greens on a weekly basis from mid-October with a final dusting the week prior to the Open.

Out of left field: Just as the players teed off for their third round, RSGC arborists **Alyx Capper** and **Harrison Judd** were quickly called into action. In 2015 a major tree audit was conducted across the course which resulted in the removal of 60 large trees. As part of that, a number of other trees were placed on a monitoring list. It was during a routine inspection prior to the third round that one of those, an *Agonis flexuosa* on the 12th, had developed a large split. With spectator safety paramount, the call was made to fell the offending limb.



Royal Sydney assistants Jake Gibbs (left) and Adam Marchant take Clegg readings on the 18th ahead of the final round

The man, the legend... irrigation technician Mark 'Dog' Young, a 37-year RSGC veteran



CONTINUED FROM PAGE 17

knocked around. And with the cool spring it made the recovery of those areas very difficult despite our best efforts. We put a lot of rope out on the course to the point where I'm sure the members must have thought I had shares in a rope company.

"It wasn't until about three weeks out from the Open that we really started to see the turf respond. We were applying additional foliar to try and stimulate some recovery into the weaker areas and also did a lot of isolated topdressing. Having the tournament a week earlier also added a bit of pressure as we effectively lost a week's worth of growth at a crucial time. But once we increased our mowing frequencies and soil temperatures improved, it turned around pretty quick.

"We got there in the end and I could not have asked for more from the team. We were really happy with the surfaces that presented and the members were particularly happy too. I knew a few of them were a little concerned with where we were at during the lead-in because they knew the challenges we were having. We made sure we kept everyone informed right the way through to the point where every day the members would come up to me and ask what the soil temperatures were!"

WINNING THE WAR

If they weren't quizzing their superintendent about soil temperatures in the lead-up to the Open, then



chances are the rest of the time Royal Sydney members were catching a glimpse of Marsden's posterior. The battle against *Poa annua* at Royal Sydney has been a long and, in the words of Marsden, "brutal" one and just like most of his colleagues around the country fighting the fight, the fight is getting harder. Armed with a weeding fork, it's not uncommon to see Marsden bent over digging clumps of it out of his warm-season surfaces and throwing them in the back of his golf cart.

In between the 2013 and 2016 Opens, Marsden had his sights set on a crusade against turf's most ubiquitous weed, with the greens the primary focus. However, it quickly became apparent that

The Penn G2 greens, pictured is the 16th, were maintained at 2.6mm for the Open. Pictured is RSGC crew member Craig Geeve

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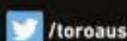
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The fairway crew (from left) Mark Spraggs, Patrick Haydon, Matthew Foenander and Nathan Lindsay tend to the par five 7th

their intensive efforts were doing more harm than good and the decision was made to back off. As Marsden quips they may have lost the battle for the time being, but they'll win the war eventually by ripping the greens up as part of the impending redevelopment (see more on this below).

"The challenge for us here has always been *Poa annua*," admits Marsden. "I think all of us around the country are finding controlling *Poa annua* very difficult at the moment and we are no different. After the last Open we went pretty hard and we had some fairly lofty ambitions to try and get some sort of control on the greens. But it's very difficult and I think we ended up putting ourselves under more pressure striving to get that purity and uniformity in the greens. We certainly weakened the plant but as a consequence the club agreed that we would focus on delivering a surface first and foremost.

"Where we are at now is working hard on the broad acre side so that hopefully when we do upgrade the golf course we have got some better strategies in place with our pre- and post-emergents. We are struggling with post-emergent control on our couch surfaces, as are a lot of others. There are some new chemistries coming out which we are excited about, but until then we have had to resort to a huge amount of handweeding – fairways,



Just a few of RSGC's 121 bunkers

Volunteer Brad Ronan (superintendent Nambucca Heads GC, NSW) stimps while Matthew Broad cuts the 6th green



roughs and a little bit in surrounds – but as fast as we've pulled it out it germinates behind us. We've gone back into some areas 2-3 times!"

SPECIAL GUEST

Come the tournament though and all the challenges of the weather and *Poa* control were but a distant memory. Royal Sydney was again in sparkling condition and provided the perfect stage for one of the most dramatic finishes in the event's history.

Jordan Spieth, the 2014 champion and 2015 runner-up, was seemingly out of the running midway through his final round. However, the World No.2 held his nerve and holed some clutch putts in his closing three regulation holes to force a playoff with Cameron Smith and Ashley Hall. He needed only one playoff hole to close it out, hitting a nine iron to within four metres on the 18th and then clinically draining the birdie putt to etch his name onto the Stonehaven Cup for a second time.

It was a memorable end to a rewarding week for Marsden, who as well as having the tournament to focus on also had the pleasant distraction of having the club's recently appointed architect Gil Hanse present for the week. Hanse flew in on the Tuesday of Open week to present his first concept plans for the impending redevelopment of the Championship course which forms a principal component of the club's 'Royal Sydney 2030' strategic plan.

It was Hanse's third visit to the club inside six months and it provided a first opportunity for him to see Royal Sydney in tournament mode (see ATM's interview with Hanse on pages 24-27). It also gave him and Marsden another opportunity to discuss a vast array of agronomic and design-related considerations that will be keystones of the redevelopment.

While the 'Royal Sydney 2030' strategic plan is a whole of club document, for Marsden the primary focus will be on the redevelopment of the Championship course and nine-hole Centenary course, improving the practice facilities and construction of a bigger and better maintenance facility. Works won't likely begin, at the earliest, until 2019/2020 and given the extent of the changes, there will be plenty of protocol to go through with the members and council before the excavators roll in.

Since Hanse's appointment, Marsden has formed an excellent working relationship with the Rio Olympic course architect and as well as literally seeing eye to eye with each other – both gentlemen are 6'6" – they also share a lot of the same ideas regarding design, aesthetics, agronomics and vegetation. Like Hanse, Marsden has some very definite ideas as to what he thinks will be best for the future of Royal Sydney's turf surfaces and not surprisingly he had just one simple request of Hanse when considering his final design.

"No shade!" states Marsden with a smile. "While we are certainly not the worst affected course when it comes to shade, the impact it has on the turf is

now significant and needs addressing. Combined with the amount of golf we have, we just can't keep the surfaces at the expected condition for members year round. And it's not just the greens but the couchgrass that suffers too. Due to the parkland nature of the course we have areas that only get a bit of midday sun. When you factor in 55-60,000 rounds going across those areas, it makes it difficult.

"Agronomically we want to provide a much better growing environment for the turf so I think opening the course up and getting the sun back on it is without doubt a very important consideration for us. We will also take the opportunity to upgrade some of the infrastructure underground like the irrigation system – for instance we'll look at putting back-to-back irrigation around the greens – and also incorporating dedicated maintenance paths. A lot of wear and tear out on the course comes from our own maintenance traffic because we don't have any paths, so that will form part of Gil's considerations as well.

"From a design perspective I think we'll see a move away from the parkland look and a more natural environment which incorporates more of the indigenous Eastern Suburbs Banksia Scrub back into our vegetation. Simplicity will be a key component I think – the greens surrounds will merge into tee complexes, there will be more short grass around the golf course and transitioning of areas to some of the wisper style grasses, not in any way to



Ross Robertson gives the 15th green an afternoon cut on Saturday

penalise the golfers or compromise playability, but to offer a more natural look.

"I think a lot of that inspiration will come from the Melbourne sandbelt. That was very much what Gil based the course on in Rio. He has a real connection and affinity with that unique part of Australian golf and I think he'd like to see some of those natural elements brought into Royal Sydney. As part of that, over the next couple of years we'll do some trial work with some different plant communities – native vegetation and different grasses as far as those naturalised areas go – so that we will be able to show the members what those areas could potentially look like."

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Greens were monitored religiously for moisture content (pictured is Peter Murphy checking the 13th) and areas topped up where required

TURF AND TURF CARE

As with any redevelopment, Marsden will also closely look at what turf varieties will provide the best surfaces going forward. Working in conjunction with agronomist John Neylan, a trial green will be constructed on the short practice range in 2017 where a couple of bentgrass varieties will be put through their paces.

Marsden says they won't be too trailblazing in what varieties will be trialled, with an A1/A4 blend likely to go in alongside Pure Distinction. The former is tried and trusted in Sydney's unique climate, while the success of the newer Pure Distinction variety at the likes of Royal Canberra Golf Club (ACT) and Peninsula-Kingswood Country Golf Club (Melbourne) has prompted Marsden to give it a try.

Already a small trial plot of Pure Distinction has been in the ground for 12 months and although not being maintained as a golf green has been monitored for disease susceptibility and drought tolerance. In addition to those trials, Marsden will also consider the installation of a SubAir system on the test green to see what benefits it can provide.

While the primary focus will be on the Championship course, the nine-hole Centenary course will also come in for significant alteration, as will the club's practice facilities which will increase in size. With the amount of traffic the Championship course receives, Marsden says that hopefully by improving the quality of the Centenary course layout it will attract more rounds, thus taking some of the strain off its bigger sibling.



Christian Pink rolls the 3rd green

Despite a cool spring, the Royal Sydney surfaces were dialled in come the Open, which was won for the second time in three years by Jordan Spieth



The courses aside, another key aspect of the strategic plan will be the revamp of the club's 'turf care' facility. Due to the diversity of the club – it has extensive tennis, bowls and croquet facilities, not to mention vast landscaped and garden areas – the maintenance team is split across two separate facilities and it's Marsden's hope to bring the entire crew (which numbers 42) together under one roof.

"First and foremost we want to increase the footprint of the turf care facility," explains Marsden. "We have grown substantially over the years and the original facility is well beyond its capacity. The location will be similar, but Gil's redesign will allow us to increase that footprint so that we can meet the needs of the club well into the future.

"We have seen a few and been talking to different clubs embarking on maintenance facility works – Peninsula-Kingswood, Royal Melbourne and The Australian – so we are certainly taking great interest in what others are doing. That's one of the great things about our industry is that people are willing to share information."

EXCITING TIMES

With his tournament reconnoitre completed and armed with a better understanding of the direction the club wants to take, Hanse is set to return in late February to present more detailed drawings. During that time he will hold a number of member forums to discuss his design intentions and conduct hole-by-hole walk-throughs. While under no illusion that the redevelopment will take time to fully come to fruition, it is nevertheless an exciting period coming up for Marsden and his team.

"It's a journey," says Marsden. "A lot of my time since coming here in 2012 has been spent educating and communicating to the club what the issues and deficiencies are, why we can't produce the best surfaces for members all year round and what we need to do to address that. Now having Gil on board we are further along that journey.

"Gil has been fantastic to work with. He is very easy to engage with and is very considered in his approach. He's worked with similar clubs in the US and has a great style about him. He comes across very well and I think the general committee and the green and match subcommittee have been very impressed with the thought, consideration and opportunities he has put forward to date.

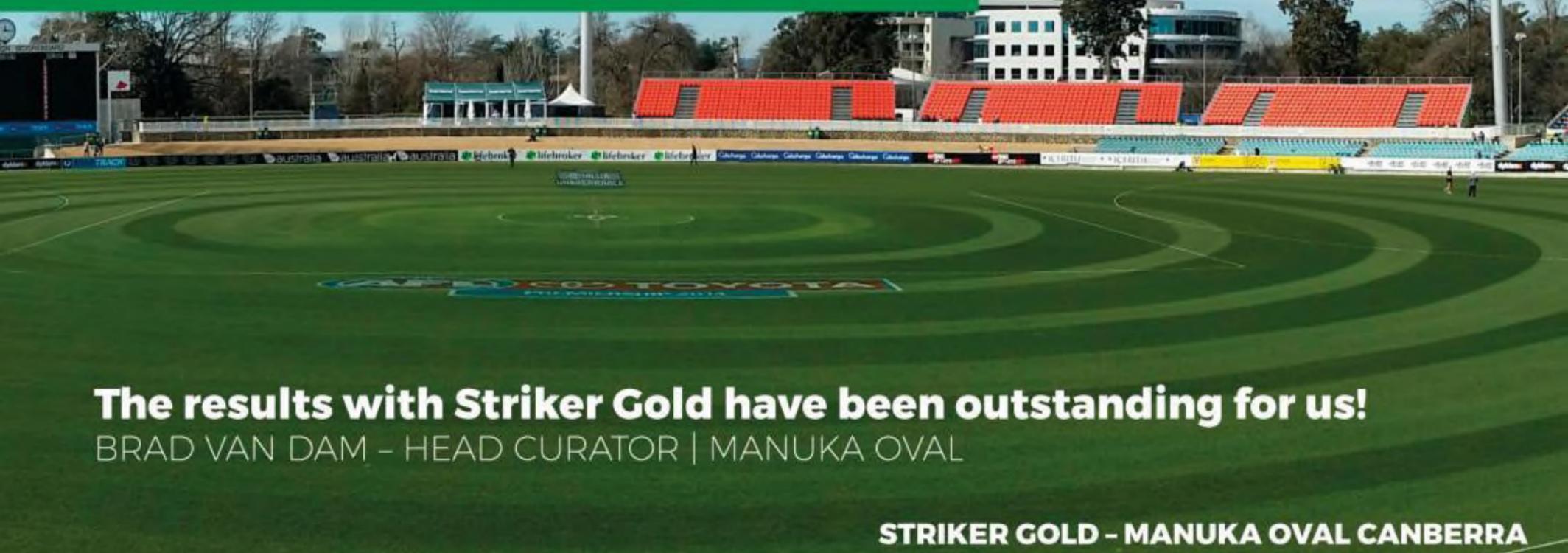
"He's coming in with a lot of respect for the club. While there will be a lot of change, he's not going to change it too dramatically; he's respectful of the club's history and tradition. The members know so much about the golf courses and Gil is the sort of person who will listen and welcome their involvement.

"We have a lot of work between now and when we break ground and we are fortunate because I think we are going to need it. But it's genuinely very exciting and it will be a very different Royal Sydney that will present when the Open returns." 🙌

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Royal, respect and Rio

PHOTOS: BRETT ROBINSON

One of the more interested spectators at the 2016 Emirates Australian Open was Gil Hanse. ATM editor Brett Robinson managed to sneak 10 minutes with the Olympic golf course architect to talk about the impending Royal Sydney redevelopment.

2016 was a hallmark year for Gil Hanse. Already well known and respected within the golf course industry over more than two decades, his name and company were thrust into the global spotlight with the design and construction of The Olympic Golf Course in Rio de Janeiro which was the stage for golf's return to the Olympics after 112 years last August.

The original design, heavily influenced by the Melbourne sandbelt of which Hanse is an unabashed devotee of, is just one in an impressive portfolio of work that Hanse has to his credit since forming Hanse Golf Course Design back in 1993. Other original designs include the much lauded Castle Stuart, host of the 2016 Scottish Open, Boston Golf Club in Massachusetts, which has been described as a modern day Pine Valley, and the Los Angeles Country Club South Course which he co-designed with Geoff Shackelford. He also designed the recently opened Trump International

Golf Club in Dubai and in the coming months the much-talked about Streamsong Resort Black Course in Florida will also open its gates.

In addition to his original design works, Hanse has made a significant name for himself restoring and renovating some of the game's most exalted courses. Included among them are the likes of Merion, Los Angeles Country Club (North Course), Winged Foot Golf Club and The Country Club (Brookline). More recently he can add Pinehurst to that list after being selected to restore the No.4 course in the coming years.

Based on such an extensive resume, and in the same week that the Rio course made its much-awaited debut, Royal Sydney Golf Club announced that it had appointed Hanse to oversee changes to its championship course as part of the 'Royal Sydney 2030' strategic plan. Royal Sydney is Hanse's first Australian appointment and since June last year he has made three visits Down Under, including spending a week during the 2016 Emirates Australian Open.

Hanse's presence certainly added an extra element to the tournament and during the week he presented concept plans to the club's general committee and spent time with course superintendent Steve Marsden and his team to get more of a feel for the course and their operations. Midway through the third round of the Open, Hanse took some time out to field a few questions from Australian Turfgrass Management Journal about the impending redevelopment, the Olympics and the importance of the working relationship between course architect and golf course superintendent.

Renowned course architect Gil Hanse (left) with Royal Sydney superintendent Steve Marsden





Hanse rates the topography on the perimeter of the course (the front nine holes – pictured left is the 8th and below the 6th green) as a definite strength at Royal Sydney



ATM: Thanks for taking the time to talk to ATM Gil. How has the week been so far?

Gil Hanse: "It's been very enjoyable. This is our third time here in six months after coming out originally in June for the interview and then again in September after being selected by the club. This is the first time I have seen the course in tournament condition and Steve and his team have done a great job. Prior to this time, the couchgrass wasn't growing and there was a lot of traffic out on the course, so this time it has been great to see the course 'in season'.

"That's been the highlight along with seeing the top golfers playing the golf course. It's important to understand how they play it, what is out there now that presents challenges for them and what we might retain that will be part of the new design. Obviously there's a lot of talk about the alterations we are going to make to the course, so it has been good to watch them play and try and visualise how certain holes might look like or how they will transition."

ATM: When you saw the course for the first time, what were your impressions?

Gil Hanse: "When we came out in June it was more a scoping exercise because at that point in time we weren't sure if we were going to be selected. It was really just about getting a feel for what I thought I could communicate to the committee were the positive attributes of the course.

"First and foremost is sand. Any time you have a golf course with sand underneath it you get excited about the possibilities not only from a design standpoint but the aesthetics, the appearance of it and long-term the maintenance of it. We love firm and fast conditioning and when we have sand we have that opportunity. There are obviously a lot of trees on the property and they present some

agronomic challenges for Steve and his team, so how can we help on that front but also look at improving the playability and character and interest of the golf course."

ATM: What do you see as some of the strengths and weaknesses of the property?

Gil Hanse: "The topography on the perimeter of the course (the front nine holes) is a definite strength. Then you get into the flatter stretches of the property on the back nine which I think are going to present the biggest challenges.

"So if we can figure out a way to maximise the topography and the character of those holes that have some nice undulation that will be a positive. Then it will be a matter of figuring out a way to create more space and perhaps a bit more interest on the flatter holes because I don't think there is any way to alter the contours – we won't have that much fill and do you really want to change the character of the site that much. So I think it's more what we can do with the features – bunker locations, tee angles, greens slope – that will make those flatter holes feel a little bit better."

ATM: How do you envisage the new Royal Sydney championship course looking?

Gil Hanse: "There are obviously a lot of steps to go through first – member approval, council approval – but from my standpoint I'd like to have a more sandbelt feel to the golf course. My understanding is that the indigenous vegetation is much more in tune with the heathland or scrubland style as opposed to the parkland nature which there is currently. So we are all going to have to have a serious conversation about what we want that identity to be, because for so long it has been a parkland golf course and these trees have been a big component of it.

Main photo opposite: In August 2016, Royal Sydney Golf Club announced that it had appointed Olympic golf course architect Gil Hanse to oversee changes to its championship course as part of the 'Royal Sydney 2030' strategic plan. Pictured is the par five 2nd during the 2016 Emirates Australian Open



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The challenge for Hanse will come with the flatter sections of the Royal Sydney property as well as determining whether to steer away from the current parkland feel the course has



Architecturally and agronomically we have an idea of where we would like to see it go, but will that match up with what the members want to see?"

ATM: With what you're about to undertake here at Royal Sydney, can you draw any parallels to other courses you've worked on?

GH: "It's difficult to make comparisons because generally speaking most of the work we do with existing courses is more history based. In most cases it's a great venue with a long history and significant architectural pedigree – a Tillinghast, a MacKenzie, a Ross. But here there's been so many different styles put into it so we are really not basing our design on an historic level, except for perhaps the presentation of the property and the look of it."

ATM: Now that you've seen Royal Sydney in tournament condition, has that changed your mindset in regards to the final design?

GH: "No, I think re-emphasised a few beliefs that we had. I think we've seen some of those points validated by watching how the players have approached the course. It's not an easy spectator golf course – it gets really tight and pinched in a

few areas so I think if we can find some spots where we can create some width and some better hole corridors that'll be a positive. We noticed that a lot of the penalty on this golf course is correlated to the width and how it's very tight."

ATM: Obviously as part of this week you've had meetings and discussions with course superintendent Steve Marsden about the redevelopment. What have you discussed and how important is your relationship?

GH: "You cannot over-estimate the importance of the relationship between a course superintendent and golf course architect. It's critical; there's no way around that. We can design and visualise a golf course to play a certain way, but without the superintendent and their abilities it means nothing."

"I've said this publically in the US a lot that golf course superintendents are, unfortunately, the most under-appreciated, under-valued people at most clubs, but it should be just the opposite. They should be the ones who get most of the credit because the role they play is so important."

"The relationship I have with Steve is great and this week we've talked about soil science, we've

Royal Sydney is Hanse's first Australian appointment and since June last year he has made three visits Down Under, including spending a week during the 2016 Emirates Australian Open



talked about turf, we've talked about trees. So from a planning standpoint I'm very comfortable knowing that Steve and I are on the same page as we approach all of these aspects."

ATM: Have you discussed likely turf varieties and is that something you take an interest in with such projects?

GH: "I do, but I also understand that I'm limited in my experience and knowledge of what grows best here and what can be maintained in Australian conditions. I think it's more along the lines of 'Okay, we'd like to see the surrounds a little more tighter so we can get players with a putter in their hand all year round, so what type of couchgrass is going to give us that opportunity?' And, is that the same couchgrass that's going to be on the fairways?"

As for the greens it's more like 'Okay, we're going to design greens that we'd like to see be rolling in this range, so what varieties of bentgrass are going to give us that?' So once we get an idea of where we'd like to see things go, we are then going to trust the professionals like Steve to give us the right type of grass."

ATM: You presented some initial drawings to the club this week. What was the feedback?

GH: "This week was more about presenting a concept and asking the club whether this path was acceptable for the membership and that if we start going down this path is that okay. So it was bigger picture stuff. As for the routing, we've identified some areas where we think we can create a little more width and better playing corridors that currently exist, but that's something we'll have to hear from the membership whether they're okay with that. We are coming back in late February where we will have a bigger forum with the members to try and get across some of the ideas we have."

ATM: The Olympic course in Rio has obviously been a big focus for you in recent times. How did you think the course presented?

GH: "That experience makes my name and my face more recognisable to people which is a good thing

when you're dealing with a club like Royal Sydney which has such a large and diverse membership. A few people here have said congratulations on the Rio course which is always nice.

"I was delighted with how the course performed. I don't think it could have got any better. Talking about the importance of the relationship between architect and superintendent, Rio was another example of that. Neil Cleverly was the superintendent there right from the start and we had two years to talk about how we'd like the golf course presented. He was able to, through some very trying circumstances, get the course to peak just at that right time.

"It was amazing to see – the men's winning score was 16-under, the women's winning score was 16-under, there were three men double digits under par and three women double digits under par! And you had six medallists from six different countries – you couldn't make that up if you tried!"

ATM: Much has been written and said about the Melbourne sandbelt influence in your final design of the Rio course. What is it about the Melbourne sandbelt that you like so much?

GH: "It's that natural aesthetic – the courses just feel like they belong there. The natural vegetation is in sync with the sand and the scale of those properties is just phenomenal. I think you'd be hard pressed to find a better collection of great golf courses in such a small geographic area anywhere else in the world. I really believe that and I think it's a testimony to the fact that Alister MacKenzie and Alex Russell spent time there, so you had all these great architectural minds married up with great sites. Then you also have the fact that the traditions of the game are very strong there, so there are a lot of members and committees who are interested in preserving and protecting that as opposed to altering that. It's just a very special place."

ATM: So will we see some of that Melbourne influence here at Royal Sydney?

GH: "I hope so. The current bunkering scheme makes reference to that look and feel and I think that's something we'd like to see." 🙌



The long-term maintenance of the course will be a key consideration in Hanse's design changes. Pictured during the Open are RSGC crew members Matthew Millenyi (above) and Clint McGrath (below)



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Capital improvement

Affectionately dubbed the 'Cake Tin' by the locals, Westpac Stadium in New Zealand's capital Wellington recently underwent a major surface upgrade for the first time since its opening in 2000. HG Sports Turf's Erik Kinlon looks back at the project and some of its unique challenges.

Westpac Stadium, or Wellington Regional Stadium, is a major sporting venue in Wellington, New Zealand which was officially opened in early 2000. Residing one kilometre north of the Wellington CBD on reclaimed railway land, it was constructed to replace Athletic Park, the city's long-standing rugby union venue.

Athletic Park held a unique place in the New Zealand sporting landscape. In addition to boasting one of the steepest grandstands in the country (the famed Millard Stand), it was the ground's exposure to the elements which gave it folklore status. Wellington is renowned for its gale force winds and it was something of a rite of passage to attend a rugby game atop of the Millard in the middle of winter with an Antarctica-fuelled southerly blowing in off nearby Cook Strait.

Athletic Park was the site of one of the All Blacks' most improbable Test wins over a touring France side in 1961. With winds gusting up to 140kph during the match, All Black 'super boot' Don Clarke managed to nail a sideline conversion to win the match 5-3. What made his conversion famous was that he effectively kicked the ball along what is now the 22m line and watched the wind swing it 90 degrees and through the uprights!

Despite such memorable moments, over the years Athletic Park gradually became more and more run down and was no longer considered

adequate to cater for international events due to its age and location. A new stadium was also needed to provide a larger-capacity venue for One Day International cricket matches, due to the city's Basin Reserve ground losing such matches to larger stadia in other parts of the country.

Now in existence for 16 years, the 34,000 capacity Westpac Stadium has become one of New Zealand's premier multi-purpose venues. It is the home of the Wellington Lions Mitre 10 Cup rugby team as well as the aptly named Hurricanes Super Rugby team.

The stadium also hosts the Wellington Sevens, one of the legs in the annual HSBC Rugby Sevens World Series, and regularly hosts All Blacks rugby matches. It is also home ground for A-League soccer team Wellington Phoenix FC, with the home fans dubbing the ground 'The Ring of Fire'. During the summer the stadium also hosts international and occasionally domestic limited overs cricket.

The stadium has also been used for rugby league matches, including national team fixtures and New Zealand Warriors away fixtures. In recent years, Melbourne-based AFL club St. Kilda played three 'home' games at the stadium against Sydney, Brisbane and Carlton as part of the Anzac Day round. Most recently it hosted matches during the 2011 Rugby World Cup and 2015 Cricket World Cup.



In December 2016 HG Sports Turf installed its Eclipse Stabilised Turf system at Westpac Stadium in Wellington. The new surface had its first outing on New Year's Day with an A-League clash between the Wellington Phoenix and Adelaide United

PHOTOS COURTESY OF HG SPORTS TURF AND WESTPAC STADIUM

In addition to sporting events, Westpac Stadium regularly hosts major events and concerts. Shortly after opening in 2000, it hosted the Edinburgh Military Tattoo, the first time the event was held outside of Edinburgh, Scotland, while in 2006 it hosted WWE's first ever New Zealand show in front of 23,875 spectators. It also played a bit part in the Lord of the Rings film trilogy after film director Peter Jackson recorded 30,000 fans during a 2002 Black Caps ODI against England chanting in 'Black Speech'. This was then used as the sound of 10,000 chanting Uruk-hai during the Battle of Helm's Deep in 'The Two Towers'.

CONTINUAL IMPROVEMENT

Over the years the Westpac Regional Stadium Trust (WRST), which oversees the management of the stadium, has made continual improvements to the venue to keep it up to a standard to rival New Zealand's other major venues. As part of that, in early 2016 it announced that it would be upgrading the playing surface for the first time since its opening.

The existing surface was natural ryegrass which over time had developed a significant *Poa annua* population along with high organic matter content which made management of the surface increasingly challenging. The stadium had not previously had any technology in terms of pitch

stabilisation or reinforcement. This combined with an ever-increasing events strategy, and the need for the stadium to be a multi-functional events space for sports and non-sports events, meant it needed a turf system that would be up to the challenge.

HG Sports Turf (HGST), which had previously undertaken major projects at other New Zealand stadiums such as Eden Park (Auckland), Waikato Stadium (Hamilton) and AMI Stadium (Christchurch), was one of three companies to tender for the job and was appointed in early 2016.

The first task was to source an appropriate site to grow the company's patented Eclipse Stabilised Turf system and it was ultimately decided to establish a purpose-built nursery in Auckland. Although some 650 kilometres and an 8.5 hour drive away, Auckland was chosen for its more favourable growing conditions during the winter months.

The nursery was planted in April 2016 with two varieties of ryegrass – Centurion and Colosseum. Both varieties were sourced from PGG Wrightson New Zealand and chosen by Westpac Stadium based on their agronomic performance and, in particular, winter activity for the local climate. HGST employed the services of an Auckland-based contractor to oversee the nursery, with guidance provided to ensure that all programming, maintenance, reporting and testing was conducted in accordance with the company's requirements.

The 12m x 1m turf rolls were installed within 12 hours of being harvested. The turf was grown at a purpose built nursery in Auckland and transported 8.5 hours to Wellington





The existing ryegrass surface was stripped and disposed of over a five day period starting 4 December 2016

Running concurrently with the removal of the old surface was the construction of a new ring road followed by the installation of an approved synthetic turf system and performance infill



SHAKEN BUT NOT STIRRED

With the nursery growing nicely and well on track, a few weeks out from the project start date there was an unexpected spanner thrown into the works. On 14 November a 7.8 magnitude earthquake struck near Kaikoura approximately 150km south east of Wellington. Due to its proximity to the epicentre, Wellington felt some significant effects of the earthquake, especially the city's port which suffered subsidence. That created a number of logistical issues with the mobilising of materials and equipment for the project, not to mention the ongoing concerns of the aftershocks, some of which measured 5.5.

Fortunately the stadium, which was specifically engineered to withstand such earthquakes, suffered no damage. However, to ensure that nothing was out of the ordinary, prior to the resurfacing starting HGST conducted an additional survey of the field.

HGST sent over a 12-strong crew to Wellington for the project which was headed by project manager Nathan Humphreys and assistant project manager Marty Cupples. A further crew of four was sent to the nursery in Auckland for the turf harvest which was overseen by sports turf production manager Brad Kidd. HGST engaged the services of local contractor TIC for assistance with the



earthworks and further support was offered by Westpac Stadium turf manager Hagen Faith and his crew who wanted to be a real part of the project delivery. Sports Engineering were engaged to assist with the design and production of all final as-built drawings.

On Sunday 4 December the resurfacing began in earnest with the existing surface stripped and disposed of over a five day period. Running concurrently with this was the construction of a new synthetic ring road around the perimeter of the playing surface, with the base construction taking seven days. An approved synthetic turf system and performance infill was then installed over the course of the following three days.

The profile of the main playing surface included 40mm of Eclipse Stabilised Turf above a further 250mm sand layer and 100mm gravel layer. Following removal of the old surface, further trimming of the sand surface layer was required to remove organic darkening of the sand. This was to ensure that infiltration rates were not affected and remove the potential for reduced agronomic performance of the new turf. In total, 240 tonnes of locally sourced compatible sand was tested, chosen, placed and consolidated.

Installation of the Eclipse Stabilised Turf started on 15 December and finished ahead of schedule on 21 December. With the nursery a substantial distance away, HGST engaged an Auckland-based logistics company to transport the turf from Auckland, with a total of 44 truckloads delivering 15,400m² of turf. The turf was on the ground in the stadium within 12 hours of harvest.

The turf rolls were 12m long x 1m wide laid in a longitudinal direction with WMI tracked big roll turf layers. Each roll was tightly abutted together and rolled and watered straight after installation before being handed back in sections to Faith and his team for ongoing maintenance.

As with any major projects, there are always challenges that present themselves and this one, earthquakes aside, was no different. The turf harvest process was a bit of a challenge due to conditions and the removal of the geotextile backing on the Eclipse due to the aggressive root development in the product. In the stadium itself, one of the biggest challenges was dealing with Wellington's strong winds. With winds reaching gale force at times, it meant that keeping the sand profile wet and consolidated was difficult. The winds would shift the sand around the ground to the point where HGST had to laser grade ahead of each full run of turf to ensure level tolerances were met.

HIGH PERFORMANCE

With the resurfacing completed in the days leading up to Christmas, it was then up to Faith and his team to prepare the surface for its first outing on

CONTINUED ON PAGE 32

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Around 240 tonnes of locally sourced sand was brought in to get the design levels required before more than 15,000m² of Eclipse Stabilised Turf was laid over a six day period



The resurfacing project was completed a day ahead of schedule on 21 December 2016

The new Westpac Stadium surface is a blend of Centurion and Colosseum ryegrasses

CONTINUED FROM PAGE 30

New Year's Day – an A-League clash between the Phoenix and Adelaide United. Since then it has hosted a number of sporting fixtures and events, with Faith saying the new surface has performed extremely well.

"Due to the fluid nature of our events schedule there was excellent understanding and a lot of consideration taken towards our requirements," says Faith, who has worked at the stadium since 2008 and took over as turf manager in July 2015. "The short turnaround of the surface was always going to be the biggest challenge and a feat not often, if at all, achieved in New Zealand.

"HG Sports Turf's team on the ground lead by Nathan, Marty and Brad ensured we were able to meet given timeframes while maintaining a high standard in quality control. The whole team did a great job and were brilliant to work with.



"We have had four A-League fixtures since with three of them played within eight days of each other. The biggest test so far was the Wellington leg of the HSBC Rugby Sevens World Series on 28-29 January. We hosted 45 matches on the field of play and 90 team warm-ups split across four designated zones over the two days. The damage sustained was minimal and only a quarter of what we experienced during the 2016 event.

"The feedback to date has been fantastic from players, coaches and controlling authorities on how the new surface has been presented and most importantly performed. The summer weather here hasn't been the best during a couple of the events, but the surface wasn't affected as a result and the Eclipse system has performed exactly as expected.

"We haven't had to make too many changes to our cultural practices, however with a cleaner, more free-draining sand profile and turf surface we will be closely monitoring and assessing moisture content and leaf tissue and soil sample results to ensure we maintain a pristine surface and keep everything in balance.

"One of the reasons why we went with the Eclipse system was to meet the multi-functional needs of the stadium going forward. Not long after the Sevens we hosted a Guns 'N' Roses concert and coming up we have a packed schedule of Super Rugby, ODI cricket and A-League soccer matches. In July we will also host an All Blacks Test against the touring British Lions as well as a quarter final of the 2017 Rugby League World Cup in mid-November."

HEADING WEST

With the dust hardly settled on the Westpac Stadium project, HGST quickly shifted its attention back across the Tasman and the resurfacing of AAMI Park in Melbourne which was happening as this edition of Australian Turfgrass Management was going to print in early February.

Following that HGST will head to WA for the construction and surfacing of the new 60,000-seat Perth Stadium, which will also use the Eclipse Stabilised Turf system. The Wintergreen couchgrass turf (which will eventually be oversown with ryegrass) is currently being grown at Greenacres Turf Farm in Serpentine, WA under the watchful eye of HGST's recent appointment Tony Hemming who is acting area manager. 🌱



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From Port Melbourne to Port Moresby



After working at some of Melbourne's elite turf facilities, Matthew Oliver took something of a departure last October and headed to Port Moresby in Papua New Guinea on a six month contract to look after the country's National Football Stadium.

Above: The National Football Stadium in Port Moresby is home to the PNG Rugby Football League and the national side, the Kumuls. Last November it was the principal venue as the country hosted the FIFA U20 Women's World Cup

My name is Matthew Oliver. I'm currently 29 and started out in the turf industry in 2006 when I was playing cricket as the overseas player at Altofts Cricket Club in England. The club curator there, a gentleman by the name of Clive, introduced me to wicket preparation and after playing on turf pitches for a few years I quickly gained an appreciation for the craft. I ended up assisting Clive for the remainder of the season and thoroughly enjoyed it.

When I returned from the UK, I began a greenkeeping apprenticeship at The Sandhurst Club in Melbourne where I learnt the ins and outs of turf management from Peter Jans and Tim Dellar. I did my schooling under the tutelage of John Shannon and the team at NMIT and in 2008 was awarded the NMIT Apprentice of the Year and nominated for the VGCSA Apprentice of the Year Award.

After completing my apprenticeship I was lucky enough to be offered a position at Etihad Stadium. Under the expert guidance of arena management director Gavin Darby, I was exposed to a completely different side to turf management. I learnt so much during my five years there and the science that goes into preparing a ryegrass sports field in an extremely challenging environment with numerous microclimates is incredible. Whether it was deploying the SGL lighting rigs, growth mats, weekly foliar feeding and regular renovations, it really was a unique venue in which to hone your skills.

In 2012, Etihad reconstructed the North Melbourne Football Club training field (Arden Street) and I was promoted to be the club's ground manager in conjunction with my arena assistant role at Etihad. This was a terrific experience, working with

the football club to coordinate weekly training times and community use all with the aim of providing the club with a pristine training surface.

During my time at Etihad I completed my Diploma in Sports Turf Management through NMIT and in September 2014 decided it was time to expand on my horizons by taking on the assistant grounds manager role at Melbourne Grammar School (MGS). I was initially in charge of the South Yarra campus, looking after the main oval and wickets, before eventually being charged with looking after the school's impressive Edwin Flack Park Sports Complex in Port Melbourne. This facility comprises a 1.8 hectare AFL/cricket field, a 1ha soccer/rugby/cricket field along with tennis and hockey courts and landscaped areas.

PNG BOUND

Despite thoroughly enjoying the role at MGS, it was a phone call from good friend Shane Biddle from the University of Queensland in mid-2016 that would trigger my next move. Shane put me on to Paul Lierse whose company Turfcare Solutions provided resources and advice to the National Football Stadium in Port Moresby, Papua New Guinea (PNG). Singapore-based company Mondiale, which had the maintenance contract for the ground, was looking for a turf manager and after contacting them I was duly appointed to the role for the remaining six months of the company's initial two-year maintenance contract.

It was certainly a departure going from Port Melbourne to Port Moresby, but I was attracted to it because of the challenge of managing a stadium in a tough location and with limited resources.



Matthew Oliver with the match referees ahead of the FIFA U20 Women's World Cup final

By no means was it a spur of the moment decision. Given my lack of experience managing turf in the tropics and with little knowledge of PNG as a country, I did a heap of research online and spoke to numerous people before putting my signature on the contract. I had some great conversations with Paul Sanson and Kenji Steele from Townsville's Tony Ireland Stadium, as well as Justin Groves from SACA about the pros and cons of PNG, turf management in a tropical environment and others regarding the logistics of the country.

There is so much negativity online regarding PNG but in reality if you prepare properly and use a bit of common sense it's a fantastic country and a brilliant place to work and explore. Port Moresby itself is quite nice, with some terrific cafes, bars restaurants and world-class hotels. Understandably, my wife Rheanna (we only married at the start of 2016) and family were particularly concerned, but

also very supportive at the same time. The dangers of personal safety are present no doubt, but I have not had any concerns or incidents. Again, it's just a matter of preparing properly and listening to people who live there.

The role encompasses the management of the stadium surface as well as the adjacent training field, a 3500m² turf nursery and landscaped areas within the stadium precinct. My contract is on a 'fly-in, fly-out' basis – three weeks on and one week off – and is due to conclude in March 2017.

The stadium is located in Boroko, a suburb of Port Moresby about 5km from the coast. The stadium has been around since the 1970s and was known as the Lloyd Robson Oval. Over the years it had become run down until oil and gas exploration and development company Oil Search re-developed the stadium in 2013 through the PNG Tax Credit Scheme.

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Oliver took up a six month contract as the stadium's grounds manager, leading a team of seven PNG nationals

It hasn't been all work for Oliver who has made sure he has enjoyed some of sights and enjoyed the local hospitality during his time in PNG



The stadium is now owned by the people of PNG and run by Oil Search. It is the home of the PNG Rugby Football League and is home ground for the national side the Kumuls and the PNG Hunters who play in the Queensland Intrust Super Cup competition. The venue also hosts international soccer and music concerts.

I lead a team of seven PNG nationals who come from a wide variety of backgrounds and cultures. Some speak hardly any English and come from over 800km away on the other side of the country in the highlands. Port Moresby is really the only place for Papuans to earn a decent wage in the country, so a lot of people moved to the area around 10 years ago at the height of the resources boom.

The stadium surface is Princess 77 seeded hybrid bermudagrass. There are no turf farms in PNG so the only way to establish grass is through seed. It is terrific for the PNG climate and thrives here with a judicious nutrition and irrigation programme.

CHALLENGES

As with any posting overseas you encounter many challenges no sooner than walking through the front gate. When I arrived the fields were in a stressed condition primarily due to poor management practices. The root structure was minimal and as a result the surface would divot extremely badly. The fields were also full of couch mite and black beetle and had poor irrigation uniformity.



The first change implemented was a reduction of the mowing height from almost 40mm to 24mm and increasing mowing frequency from twice a week to daily, before implementing a Primo Maxx programme. The irrigation programming was also overhauled and I brought in larger Rain Bird nozzles to cope with the extreme wind that Port Moresby experiences. The fields had never been aerated, scarified or topdressed so this made a huge difference once we got stuck into a solid programme. At present we are aerating and scarifying fortnightly and topdressing monthly. I also put together a spraying programme for disease, with pythium and rhizoctonia the two main diseases we encounter.

In addition to changing some of the cultural practices, we also purchased a Clegg impact soil tester, traction tester and soil moisture sensor. I bought the Clegg primarily due to concerns over pitch hardness last year. The first Clegg readings recorded prior to any aeration were off the charts, but since starting regular aeration we have noticed a significant reduction in hardness levels. I provide the stadium with weekly reports on hardness and traction alongside the schedule of works for the stadium and training fields.

PNG's hot and humid climate certainly takes some getting used to and dictates a lot of our cultural practices. The hottest part of the day seems to be from 6am-9am in the morning due to humidity. As mentioned, Port Moresby is extremely windy and almost every day it blows from lunchtime onwards, a lot like the Fremantle Doctor in WA, which does provide some welcome relief.

All spraying is done at night or early morning when there is no wind, while foliar feeding is carried out after sun down to avoid leaf burn. The stadium is watered nightly when no rain is forecast (as you can imagine the ET rates in Port Moresby are extreme).

Access to products can be problematic at times as there is literally nowhere in town to get anything turf related. All chemicals, fertilisers, seed, paints, tools and machinery I source primarily out of Queensland and sometimes Melbourne. Ordering must be done well in advance and I have deliberately ordered a few pallets of line marking paint and a container of dry fertilisers to have on hand.

GREAT GUYS

Perhaps the most rewarding aspect of my short time in PNG to date has been getting to know my crew

and helping them improve their turf management skills. My team had no practical turf experience before working at the stadium and certainly no qualifications. Two of my groundsman had previous bobcat use but that was it.

When I arrived, I put in place a training programme with the aim of getting as many of the team as possible trained up on as many machines and tasks quickly! With the FIFA tournament approaching (more on that below) it was imperative to get the essentials up to scratch. The biggest consideration was safety and ensuring the guys wore appropriate PPE, including footwear (not just the trusty 'PNG safety boots' aka thongs!).

After the first six weeks, I had a training record in place with all my guys able to mow the stadium and training field in patterns, line mark correctly, use hand mowers and whipper snippers, irrigate properly and drive a tractor. Only two of my guys have licenses so I acted as a driving instructor on the tractor as well! I also trained up the two senior staff on boom-spraying and granular fertilising.

Getting all seven of my guys to work on the same day can be a challenge at times. As mentioned only two have licenses and a few come from villages over an hour away by bus. Work isn't overly important to villagers as everyone is sort of self-sufficient and families help each other out. I am always trying my best to encourage the guys to be at work on time and to reward the team for that I put on a BBQ each Friday.

Seeing the guys advance their skill levels and enjoy the work they are doing has been fantastic. Papuans are typically shy people, so I get very excited when I get asked a question about a particular task. I really enjoy seeing the guys having a good time and working together as a team to present a world-class sports complex. When I finish up, I am confident the guys will continue to produce great sports surfaces for years to come.

ON THE BIG STAGE

Since taking up the contract at the National Football Stadium we have hosted some fantastic events which have been a real focal point for the country as a whole. Not long after arriving we hosted a couple of rugby league nines tournaments and then had a two week break before the FIFA U20 Women's World Cup which was held across a number of venues in Port Moresby. The tournament ran from 13 November to 3 December and we hosted 10 matches including the final.

Leading into the World Cup, we ramped up preparations with weekly scarifying and aerating and then two foliar applications of nitrogen and iron each week during the tournament. We were double cutting on training days and match days and double line marking. The most stressful time was before the tournament when the goals and sleeves turned up the day of our first training session. This was a major frustration as it meant we couldn't do any line marking until they went in.



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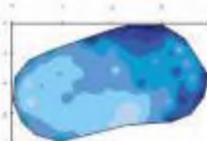
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Ben Tilley, Superintendent at Headland Golf Club, QLD



COVER

Kingston Heath: Tournament 8th (club 7th) at Kingston Heath which hosted the 2016 ISPS Handa World Cup of Golf last November. **Photo:** Brett Robinson, AGCSA



LEAD STORY: 'Scary beautiful' – World class Kingston Heath

6

Kingston Heath Golf Club again affirmed its status as one of the world's great golf courses when it successfully hosted the 2016 ISPS Handa World Cup of Golf in late November. ATM editor Brett Robinson looks back at the tournament, course superintendent Hayden Mead's preparations and the challenges of getting warm-season grasses up for a November tournament, as well as talks to some of the volunteers who assisted the Kingston Heath crew during a memorable two weeks. ATM also catches up with Kingston Heath's horticulturist Peter Murray who is responsible for managing the club's famed vegetation. The Kingston Heath landscape was at its finest for the tournament thanks to the efforts of Murray as well as a little timely help from Mother Nature.



FEATURES

Royal's race against time

16

Royal Sydney Golf Club superintendent Steve Marsden normally presents a picture of calm and collectedness but even he admits to feeling the nerves in the lead-up to last year's 2016 Emirates Australian Open. ATM editor Brett Robinson looks back at Royal's race against time to present the course for the Open and also touches base with golf course architect Gil Hanse who was in attendance. He talks about the impending Royal Sydney redevelopment and the importance of the relationship between architect and superintendent.



Capital improvement

28

Affectionately dubbed the 'Cake Tin' by the locals, Westpac Stadium in New Zealand's capital Wellington recently underwent a major surface upgrade for the first time since its opening in 2000. HG Sports Turf's Erik Kinlon looks back at the project which had a few unique hurdles to overcome.

From Port Melbourne to Port Moresby

34

Melbourne turf manager Matthew Oliver writes about his six month contract as grounds manager of Papua New Guinea's National Football Stadium in Port Moresby which hosted the final of the FIFA U20 Women's World Cup last December.



Future-proofing your course

48

As the golf industry evolves and course infrastructure deteriorates, golf facilities must be prepared to make the necessary changes to remain viable. USGA agronomists Elliott Dowling and Pat Gross discuss the importance of master planning.



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Far right: The stadium hosted 10 games during the FIFA U20 Women's World Cup, including the final

Right: One of the most rewarding aspects for Oliver has been seeing his crew advance their skill levels and enjoy the work they are doing



Since then we have hosted a couple of rugby league trial matches and starting in March the Hunters will start their Queensland Intrust Super Cup campaign. Later in the year the stadium will host three matches as part of the 2017 Rugby League World Cup which is being jointly hosted by PNG, Australia and New Zealand.

MEMORABLE MOMENTS

There have been numerous highlights during my time in PNG. Without a doubt the final of the World Cup was impressive with the stadium full to capacity (15,000) and the feedback from the players, coaches, media and officials very complimentary. It's been a big challenge, frustrating at times, but one I will look back on extremely fondly and proud of what we as a team were able to achieve – some of the best playing surfaces in the Pacific.

From a personal perspective it has been a tremendous experience. I know most people don't think of PNG as a tourist destination, but it is a beautiful, mostly untouched country with some of the most spectacular scenery I've come across. Each weekend I try to go and see something and have been to a few villages out of Port Moresby and gone fishing in some wild rivers down the coast.

I have a lot of people to thank for their support in allowing me to take on this role, none more so than my wife. I owe her a lot and she has been incredibly supportive throughout the contract. I am very grateful for that as at times it has been hard being away from my home, family and friends (and my cricket club!). Thanks also to all my colleagues and associates; it's great to see just how willing people are in the industry to lend you a hand.

Editor's Note: If you are thinking about working overseas or visiting PNG, Matthew Oliver is happy to be contacted to talk more about his experiences. You can get in touch by email oliverturf@gmail.com, Twitter @MattTurfie or Facebook (MattyOliver87).

Leading into the World Cup, Oliver ramped up pitch preparations with weekly scarifying and aerating and then two foliar applications of nitrogen and iron each week during the tournament



After the U20 World Cup there was a short turnaround before hosting the Southern Regional Rugby League Nines tournament during which time the ground was scarified and aerated

After the World Cup, which was won by Korea DPR, there was little respite before hosting the Southern Regional Rugby League Nines tournament. The tournament comprised teams from all over southern PNG with many coming from remote areas who spoke in their own dialect. The tournament saw us host 108 matches on the stadium and 76 matches on the training field over a six day period – it was incredible to watch!

Given we had a very small gap in between these events, we ripped into the stadium surface the Monday after the World Cup final with a double scarify (diagonal direction) and double aerate (to eight inches), before installing the rugby goals, cutting the pitch and line marking.

Once the rugby league tournament was over, we aerated and scarified again, this time with an application of 50m³ of sand on each field, 300kg/ha of Dolomite and 200kg/ha of 15-3-8 NPK. We also applied a follow-up miticide (Thumper 2L/ha – three applications a week apart), insecticide (Acelepryn 1.5L/ha) and a preventative fungicide (Heritage Maxx 6L/ha – two applications) heading into the wet-season.

When Oliver arrived, the playing surface's root structure was poor. After altering a number of cultural practices the surface has flourished (the photo far right shows root growth after six weeks of the new programme)





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Spraying 101



Whether it's a hand sprayer, small pedestrian sprayer or a large boom sprayer, correct calibration of spray equipment is essential

AGCSATech senior agronomist Andrew Peart looks at some of the key considerations to ensure you get the best results from your spray applications.



Nozzle selection is critical to obtaining maximum spray efficacy

Despite great advances in pesticide formulations, gaining acceptable control of pests, or in this instance weeds, seems to be getting more difficult in recent times. The term resistance is seemingly becoming more and more common and with certain species such as *Poa annua* this may well be the case. However, as turf managers are we doing as much as possible to ensure we are getting the best result from our spraying applications?

There are many aspects that must be considered to gain successful weed control. Among them are correct identification, selecting the appropriate herbicide, the timing of application and ensuring the equipment used is operating at its optimum.

It all starts with the correct diagnosis of the weed. In turf situations this can be difficult, especially if it is a grass weed which may not produce a visible seed head due to mowing frequency. If this is the case, a plug should be taken of the suspect plant, potted up and then allowed to produce a seed head to make identification easier. Grasses can also be identified through the use of a taxonomic key which uses specific plant characteristics and parts (such as vernation, auricles, collars and ligules) to identify them. Broadleaf weeds generally are identifiable by their foliage characteristics and it is rarer that a flower is needed for identification.

Once correctly identified, selecting the appropriate turf-registered herbicide is crucial and where possible taking into account its chemical group to try and limit the possibility of resistance. With herbicides, the chemical groups (modes of actions) are represented by a capital letter. Any herbicide with the same letter has the same mode of action and their continual use should be avoided.

For example, the herbicides containing the active ingredients trifloxysulfuron (Monument®), rimsulfuron (Coliseum®), foramsulfuron (Tribute®) and iodosulfuron (Destiny®) are all Group B herbicides and rotating between these chemicals will not avoid resistance of the weed trying to be controlled.

The other crucial component of the chemical selection is the quality of water that it is to be mixed with. The pH level of the water is most critical and ideally should be between 5.5 and 7.5. The use of buffering agents should be incorporated into the water if it is outside this range. The use of dirty water, or that with a high percentage of suspended solids, should also be avoided particularly when using glyphosate as this can bind to the colloidal particles and be far less effective on killing the weeds.

The timing of chemical applications is also crucial. Many chemical labels, under the heading 'Direction of Use', state that the product should not be used on turf or weeds that are under stress. Others state not to be used on waterlogged soils. Some may even state that applications should not be made if heavy rainfall is forecast in the following 24 hours. Taking note of these directions is crucial in obtaining spraying efficacy.

Of most importance though is not spraying when plants are under stress. When a plant is under stress its stomata will be closed and not receptive to herbicide applications which are foliar absorbed.



EQUIPMENT AND CALIBRATION

Ensuring the chemical reaches the target effectively is the next main consideration. Whether it's a hand sprayer, small pedestrian sprayer or a large boom sprayer, correct calibration of equipment is essential. As most chemical labels state the amount of chemical that is required to be applied per hectare, knowing the correct water volume that that chemical must be mixed with is imperative. This can only be achieved through calibration.

Some spraying equipment will provide you with a water volume required based on the speed of travel, the spraying pressure and type of nozzle being used. However, what it won't tell you is how even your application is (i.e.: the exact amount of mixture coming out of each nozzle). Poor spraying results often occur due to poor spray application.

Blocked nozzles are an obvious issue, however, what may be less obvious is poor nozzle performance of partially blocked or under-performing nozzles that may be delivering less active ingredient than actually required to kill the target plant. The only way to completely ascertain the effectiveness of nozzles is to check the output from each nozzle. This will then also provide you the total amount of water and chemical that is required to spray a hectare of turf.

The best way to check nozzle performance is to place a bucket under each nozzle and run the sprayer at the desired pressure for a set period of time, say one minute. The volume collected from each bucket should then be measured and recorded. The total and an average output from each nozzle can then be calculated. Any nozzle that varies by more than five per cent from the average should be replaced and then the test re-run. The issue may be that if uniform wear has occurred in most spray nozzles, the newly replaced nozzle may also be outside the five per cent tolerance and as such all nozzles should be replaced.

Once the total spray volume is known for a set period of time at a certain pressure, calculating the amount of water applied over a hectare is relatively straight forward. The effective width of the boom is calculated by the number of nozzles present multiplied by the distance they are apart (usually 0.5m). Travelling speed is either known from a speedometer or on older machines knowing the time it takes to travel 100m in a certain gear and revs and calculating the speed in kph from that ($3.6 \times 100 / \text{time it took in seconds to travel 100m}$). The application rate (L/ha) then becomes $600 \times \text{spray output (result obtained in L/min from all nozzles) divided by speed (kph) x boom width (m)}$.

Knowing your actual application rate and knowing all your nozzles are within five per cent output still does not guarantee even distribution. Boom height above the ground is paramount as having the boom too close to the ground will deliver too much spray underneath each nozzle, while having it too high may mean the spray will not completely reach the target. The best way to

assess the correct boom height is to run the sprayer over a hot surface, ideally concrete, and watch the uniformity at which the water evaporates.

Nozzle selection can also be critical to obtaining maximum spray performance. It is very rare that ideal spraying conditions occur which minimise the impact of drift. The use of flat fan nozzles no doubt provides the greatest leaf coverage for broadleaf type applications, however, due to the amount of very fine droplets produced they are susceptible to excessive drift.

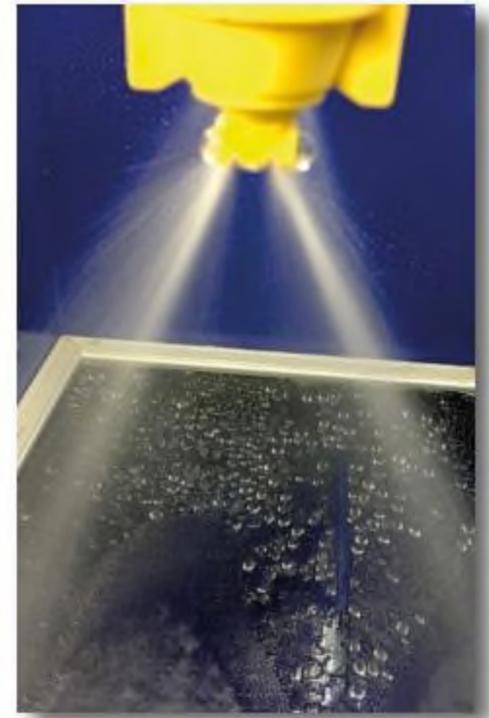
The use of air induction nozzles has dramatically reduced the impact of drift through the incorporation of much larger droplets in the spray spectrum. At 3 bars of pressure, a normal 110 degree flat fan nozzle produces 30 per cent of its spray volume with droplets smaller than 150 microns, whereas an air induction 110 degree nozzle has only 5-7 per cent smaller than 150 microns.

In recent times the introduction of the XC nozzle by Syngenta has better addressed the issue of reduced drift and also uniformity especially on sloping type ground where excellent distribution is still achieved when the boom height is reduced to only 30cm above the turf sward. Lastly, the rearward facing alignment of the nozzle has improved leaf coverage. The TeeJet air induction turbo twinjet is also another nozzle that has tried to address the issue of both drift reduction and leaf coverage with a bi-directional spray output to maximise leaf coverage.

CONCLUSION

The ability to maintain pest-free playing surfaces is paramount to the expectations of users of natural turf playing surfaces and these days that is generally only achievable with the use of pesticides. Ensuring these are applied correctly will ensure they have the best opportunity to achieve their desired result while minimising any potential pest resistance issues, harm to the operator or the environment.

Spraying equipment and water quality must be continually checked to ensure optimum performance, and the use of new technology embraced to ensure the best possible outcome. 🌱

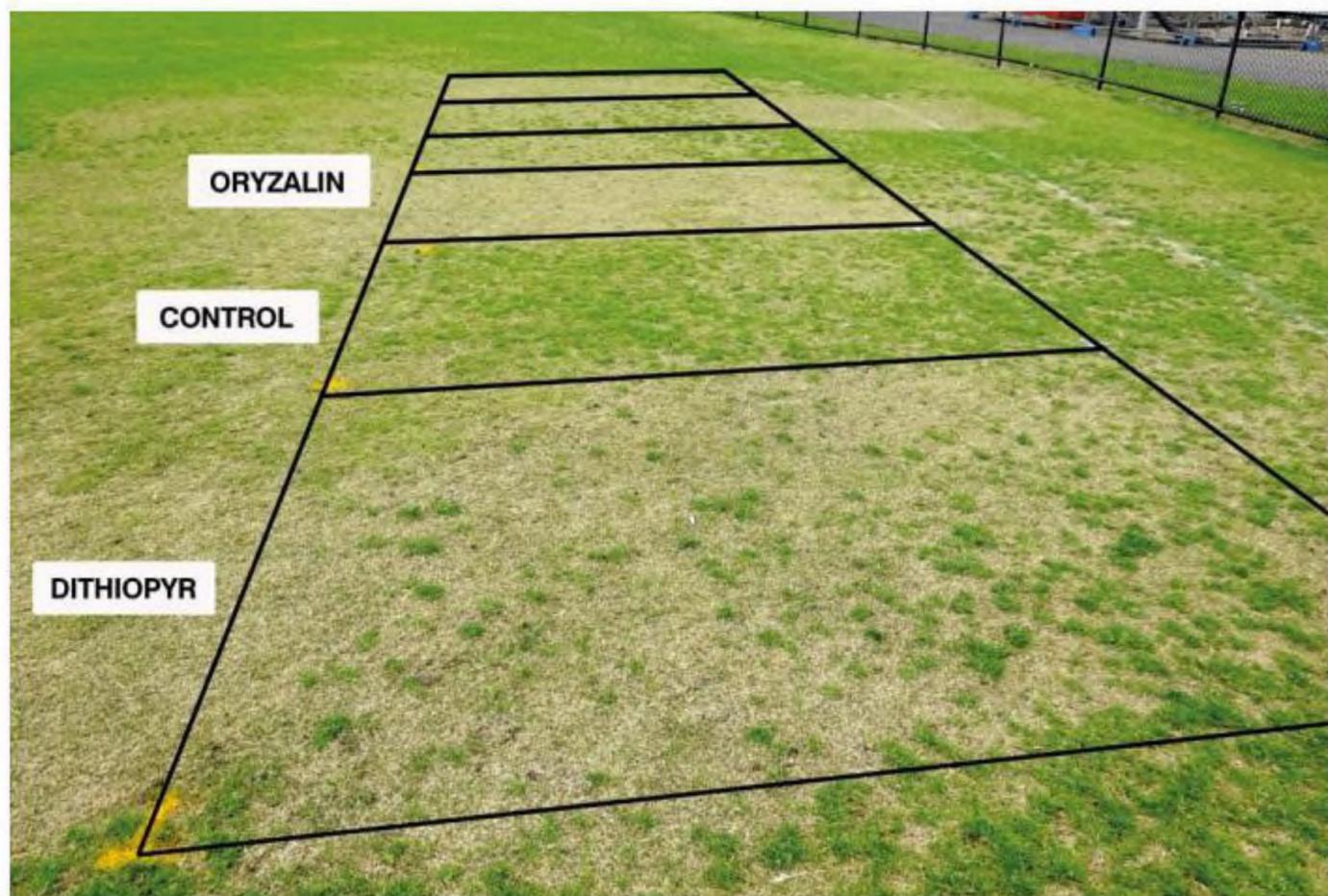


Example of a bi-directional nozzle which tries to address the issue of both spray drift reduction and leaf coverage

There are many aspects that must be considered to gain successful weed control. Among them are correct identification, selecting the appropriate herbicide, the timing of the application and ensuring the equipment used to deliver the active ingredient is appropriate and operating at its optimum



Effects of pre-emergent herbicides on a couch sportsfield at 18 weeks after treatment. All pre-emergent herbicides were very effective compared to the untreated control



Controlling the enemy



ATM columnist

John Neylan

presents the

findings of a recent

research project he and

David Nickson (Grand

Prix Turf) conducted with

funding from Sports Turf

Association (Victoria).

The project assessed

the efficacy of various

pre-emergent herbicides

to control *Poa annua* in

couchgrass and kikuyu.

In November 2016 a discussion was held among course superintendents regarding the challenges of controlling *Poa annua* in couch. This discussion arose at the same time that the results of the *Poa annua* in warm-season grasses survey was published (see previous column in ATM Volume 18.6, pages 42-46). The common theme has been the increasing difficulties in controlling *Poa annua* in warm-season grasses and the increasing reality that we are dealing with herbicide-tolerant and resistant *Poa annua* types.

Following these discussions I felt that it was timely to revisit some research work recently undertaken with the Sports Turf Association (Victoria). During 2014/15 a series of trials were undertaken to assess the efficacy of various pre- and post-emergent herbicides to control *Poa annua* in couch (*Cynodon* sp.) and kikuyu (*Pennisetum clandestinum*). One of the key reasons was to determine whether the herbicides met the level of expectation promoted

in the advertising literature. This article details the outcomes of the pre-emergent herbicide trials and the seed bank studies.

PRE-EMERGENT TRIAL

The pre-emergent trials were established on a couch field with a sandy rootzone and in an open position, while the kikuyu site had a loam-clay loam rootzone soil and was affected by shade. Both sites were in the southern suburbs of Melbourne (South Frankston and Seaford).

The herbicides were applied on 27/2/14 and the conditions were calm, warm (24°C) and dry. The soil temperature was 24°C and the plots were irrigated after the herbicides were applied. The herbicides used in the trial are detailed in Table 1.

Following the herbicide applications there was a significant rainfall event on the 1/3/15 (18mm), however, the rainfall totals were below the monthly averages for March, April, May and June. The low rainfall totals resulted in the late germination of *Poa annua* at both sites.

Within one week following the application of the herbicides there was a very slight discolouration of the kikuyu plots where oxadiazon had been applied. This did not occur on any of the couch plots.

TABLE 1: PRE-EMERGENT HERBICIDES

Treatment	Herbicides	Product	Application Rate (Product/Ha)	Expected Life (Approximate)*
T1	Oryzalin	Embargo™	5L/ha	About 100 days
T2	Pendimethalin	Stomp 330™	4.2L/ha	About 70 days
T3	Prodiamine	Barricade™	2L/ha	Up to 150 days ***
T4	Oxadiazon	Ronstar Turf and Ornamental Herbicide™	200kg/ha	About 70 days
T5	Dithiopyr	Dimension EW™	3.5L/ha	About 120 days **
T6	Untreated Control	-	-	-

* Information drawn from the label or other company documentation. Always check the label. ** Information drawn from general literature. *** In high infestations the label recommends repeat applications in 3-4 months.

TABLE 2: COUCH SITE –
AVERAGE NO. SQUARES WHERE *POA ANNUA* WAS PRESENT

Treatment	Product	15/4/15* (48 DAT)	15/5/15 (78 DAT)	17/6/15 (111 DAT)	14/7/15 (138 DAT)	13/8/15 (168 DAT)
T1	Oryzalin	0	0 ^a	0 ^a	0 ^a	0 ^a
T2	Pendimethalin	0	20.3 ^a	33.7 ^b	41.7 ^{ab}	100.0 ^b
T3	Prodiamine	0	0.3 ^a	10.3 ^{ab}	16.3 ^a	45.7 ^{ab}
T4	Oxadiazon	0	28.7 ^a	39.0 ^b	100.3 ^b	108.3 ^b
T5	Dithiopyr	0	18.0 ^a	39.0 ^b	67.3 ^{ab}	104.0 ^b
T6	UTC	0	99.3 ^b	163.0 ^c	194.3 ^c	208.3 ^c
LSD (P<0.05)		NS	36	29	75	90

Note: Where treatment means have the same letter there is no significant difference. * On this assessment date there were small *Poa annua* seedlings present but of insufficient size to identify and count.

The following assessments were undertaken;

- Poa annua count:** The amount of *Poa annua* was determined with the use of a 1 x 1 metre grid (50mm x 50mm squares) divided into 216 squares. The grid was placed in the centre of each plot and the number of squares containing *Poa annua* plants counted.
- Turf quality:** The treatments were visually assessed for turf quality using a 0 – 5 scale where 0 = very poor and 5 = excellent.
- Turf density:** The treatments were visually assessed for turf density using a 0 – 5 scale where 0 = no turf cover and 5 = very dense.
- Root depth:** On the pre-emergent trials, 100mm diameter core samples were taken in the spring to a depth of 200mm and the root depth measured.

POA ANNUA COUNTS

The trial sites were assessed prior to the application of the treatments and there was no *Poa annua* present at either site. The trials were assessed monthly and the results are detailed in Tables 2 (above) and 3 (page 44).

At the March and April 2015 assessments there was some minor *Poa annua* germination noted in the untreated control plots at the couch site with none at the kikuyu site. Detailed assessments were undertaken on five occasions when there was an obvious presence of *Poa annua*.

Couch Site: At the couch site there was a significant difference between the treatments. At the May 2015 assessment all herbicide treatments had significantly less *Poa annua* than the untreated control. At the June 2015 assessment the oryzalin treatment had significantly less *Poa annua* than all other treatments except for the prodiamine treatment. All of the remaining herbicide treatments had significantly less *Poa annua* than the untreated control.

At the July 2015 assessment the oryzalin and prodiamine treatments had significantly less *Poa annua* than the oxadiazon and the untreated control. At this time the oxadiazon was past its expected longevity and effectiveness. All of the remaining herbicide treatments had significantly less *Poa annua* than the untreated control.

At the August 2015 assessment the oryzalin treatment had significantly less *Poa annua* than all other treatments except for prodiamine. All of the remaining herbicide treatments had significantly less *Poa annua* than the untreated control.

Kikuyu Site: At the kikuyu site there was a significant difference between the treatments. In May 2015 there was no significant difference between the treatments and this tends to reflect the variability of the *Poa annua* distribution between the blocks, the small size of the *Poa annua* plants and the difficulty in counting the *Poa annua* among the green kikuyu shoots.

At the June 2015 assessment the oryzalin and prodiamine treatments had significantly less *Poa annua* than the oxadiazon and untreated control. All of the remaining herbicide treatments had significantly less *Poa annua* than the untreated control. At the July 2015 assessment the oryzalin treatment had significantly less *Poa annua* than all other treatments. The prodiamine had significantly less *Poa annua* than the oxadiazon, dithiopyr and untreated control plots.

In August 2015, the oryzalin treatment had significantly less *Poa annua* than all other treatments. The prodiamine treatment had less *Poa annua* than the oxadiazon and the untreated control.

Does *Poa annua* have a role on poorly drained soils in mid-winter? This photo of the kikuyu trial site shows the pre-emergent herbicide plot (right-hand side) is thin and lacks density compared to the untreated control *Poa/kikuyu* plot (left-hand side)



TABLE 3: KIKUYU SITE - NO. SQUARES WHERE *POA ANNUA* WAS PRESENT

Treatment	Product	15/4/15* (48 DAT)	15/5/15 (78 DAT)	17/6/15 (111 DAT)	14/7/15 (138 DAT)	13/8/15 (168 DAT)
T1	Oryzalin	0	22.0	49.0 ^a	50 ^a	100.0 ^a
T2	Pendimethalin	0	44.7	71.3 ^{abc}	133 ^{bc}	185.0 ^{bcd}
T3	Prodiamine	0	17.0	48.0 ^a	116 ^b	148.3 ^{bc}
T4	Oxadiazon	0	68.3	117.7 ^{bc}	164 ^c	187.7 ^{cd}
T5	Dithiopyr	0	21.0	62.3 ^{ac}	134 ^{bc}	179.0 ^{bcd}
T6	UTC	0	55.0	107.3 ^c	179 ^d	215.0 ^d
LSD (P<0.05)		NS	NS	54	37	37

Note: Where treatment means have the same letter there is no significant difference. *On this assessment date there were small *Poa annua* seedlings present but of insufficient size to identify and count.

TURFGRASS QUALITY AND DENSITY

Turfgrass quality and density were assessed on each occasion with no significant differences recorded at either site. Tables 4 and 5 below provide an example of the data collected.

It was noted that at the kikuyu site that as the soils became wetter there was greater turf deterioration in those plots that had little or no *Poa annua*. This result raises the question as to whether it is appropriate to use pre-emergent herbicides on all sites, particularly those that have poor drainage and high traffic.

In contrast, the couch site was on a sandy soil type and the surface remained dry throughout the winter months. Consequently the couch cover remained intact throughout.

TURFGRASS COVER

In the spring/early summer the % couch and kikuyu cover was assessed and the results are also detailed in Tables 4 and 5. The results at both sites indicate that a quicker recovery of the desired species can be achieved if kept free of *Poa annua*.

At the couch site during the October 2015

assessment, the oryzalin treatment had a significantly greater couch cover than all other treatments except for the prodiamine treatment.

The kikuyu site was wet and shaded and there was substantial damage to the turf where there was no *Poa annua* present. Consequently in the spring, the % kikuyu was quite low though the recovery was very strong. At the October 2015 assessment the oryzalin had a significantly greater kikuyu cover than all other treatments except for prodiamine and dithiopyr. By the December 2015 assessment there was no significant difference between the treatments.

ROOT DEPTH

In the spring of 2015 core samples were taken from each plot and the depth of the main root mass was measured (Table 6). The results show that there was no significant difference between the treatments when compared to the untreated control.

SEED BANK STUDY

The *Poa annua* seed bank is a key to the plant's survival and it was decided to study this particular aspect as well. At both pre-emergent trial sites 50mm diameter cores were taken to a depth of 5cm from the oryzalin plots and the untreated control. Four samples were taken from each plot with a total of 24 cores taken. Each core was separated into the thatch, 0 – 1cm, 1 – 2cm and 2 – 4cm layers. These segments were broken up and planted into trays and watered regularly.

The seedlings were identified and counted at two and four weeks after seeding with the data for four weeks after sowing detailed in Table 7 and Figures 1 and 2 (see bottom of page 46).

TABLE 4: COUCH SITE – TURFGRASS QUALITY AND DENSITY

Product	13/8/15		13/10/16		% Couch
	Quality*	Density**	Quality	Density	
Oryzalin	3.8	3.8	4.4	4.4	100 ^a
Pendimethalin	3.5	3.5	3.9	4.2	51 ^{bc}
Prodiamine	3.8	3.8	4.2	4.3	85 ^{ab}
Oxadiazon	3.8	3.8	3.8	4.1	52 ^{bc}
Dithiopyr	3.7	3.7	3.7	4.1	62 ^{bc}
UTC	3.8	4.0	3.5	4.1	28 ^c
LSD	NS	NS	NS	NS	37

*Turfgrass quality (0 = very poor, 5 = excellent) **Turfgrass density (0 = bare ground, 5 = very high turf density)

TABLE 5: KIKUYU SITE – TURFGRASS QUALITY AND DENSITY

Treatment	14/7/15		13/8/15		13/10/15			7/12/15		
	Quality*	Density**	Quality	Density	Quality	Density	% Kikuyu	Quality	Density	% Kikuyu
Oryzalin	3.3	2.8	1.7	1.7	3.3	3.4	63 ^a	4.1	4.1	81.7
Pendimethalin	3.7	3.5	3.2	3.0	3.5	3.6	37 ^{bc}	4.0	4.1	70.0
Prodiamine	3.8	3.5	2.3	2.2	3.4	3.4	57 ^{ab}	4.3	4.4	83.3
Oxadiazon	4.0	3.3	3.2	3.0	3.4	3.6	40 ^b	3.7	3.7	70.0
Dithiopyr	3.8	3.3	2.8	2.7	3.3	3.6	53 ^{ab}	4.2	4.3	81.7
UTC	3.8	3.7	3.3	3.3	3.2	3.7	20 ^c	3.3	3.3	58.3
LSD (P<0.05)	NS	NS	NS	NS	NS	NS	19	NS	NS	NS

*Turfgrass quality (0 = very poor, 5 = excellent) **Turfgrass density (0 = bare ground, 5 = very high turf density)

TABLE 6: DEPTH OF ROOT MASS AT PRE-EMERGENT SITES

Treatment	Product	Root Depth (cm)	
		Couch	Kikuyu
T1	Oryzalin	17.0	11.0
T2	Pendimethalin	19.0	11.3
T3	Prodamine	19.7	10.3
T4	Oxadiazon	20.0	10.8
T5	Dithiopyr	19.3	12.7
T6	UTC	18.7	11.7
LSD(P<0.05)		NS	NS

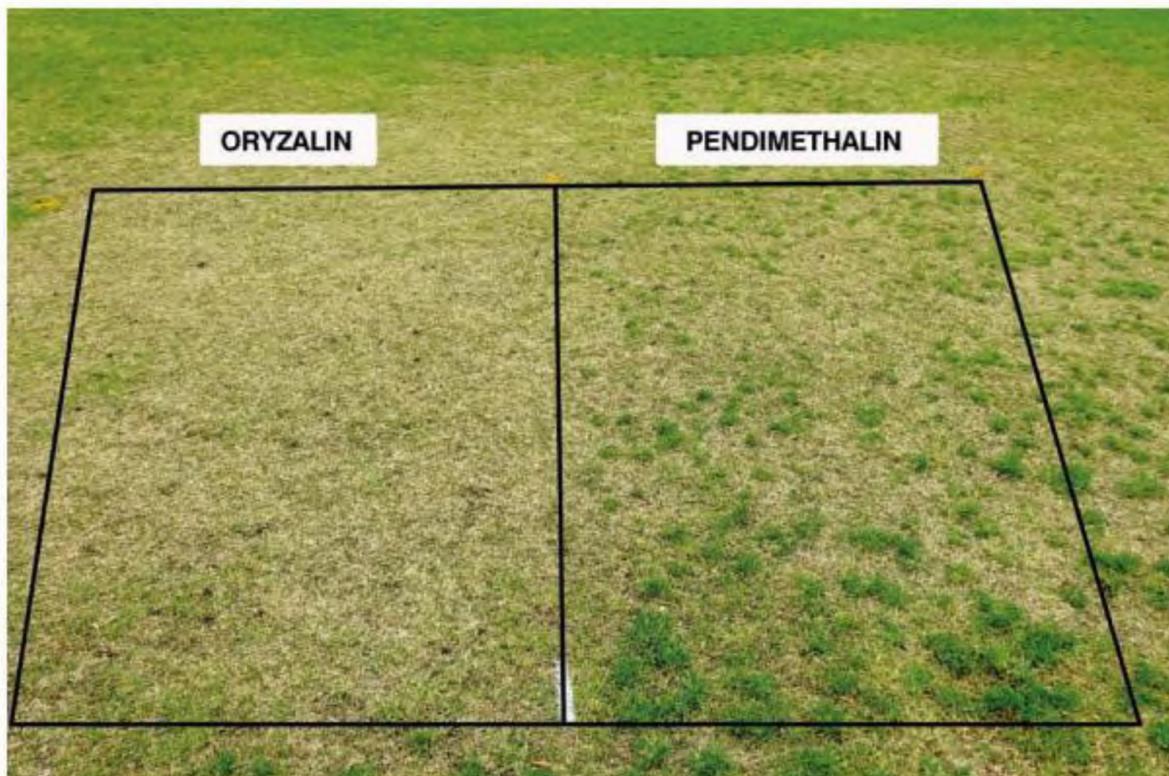
TABLE 7: SEEDLING NUMBERS/M²

Depth	Kikuyu Site	Couch Site
Thatch	8755 ^a	6055 ^a
0 - 1cm	949 ^b	2785 ^{ab}
1 - 2cm	527 ^b	1624 ^{ab}
2 - 4cm	443 ^b	549 ^{bc}
LSD (P<0.05)	3038	5316
Pre-emergent v Control		
Pre-emergent	2316	1646
Control	3038	3797
LSD (P<0.05)	NS	SIG

TABLE 8: AVERAGE PLANT HEIGHT AND TILLER NUMBER

Site	Plant height (cm)	Tiller No.
South Frankston	19.7	1.2
Seaford	8.8	3.2
t-test (P<0.05)	SIG	SIG

At both the couch and kikuyu sites the results indicated that there was a substantial seed bank present with most of the seeds residing in the thatch layer. The seed numbers at the kikuyu site were significantly greater in the thatch layer. In comparison, at the couch site there was no significant difference between the thatch layer, the 0 – 1cm layer and the 1 – 2cm layer.



While there was variation between the sites, these results demonstrate the ongoing regenerative potential of *Poa annua* and clearly not all seeds germinate in the same time period. This long-term seed reserve needs to be understood if a suitable management programme is to be implemented.

The results from the couch site demonstrated a significantly higher seed reserve in the untreated control compared to the pre-emergent treatment. The difference between the pre-emergent plots and the untreated control indicates that over time the use of pre-emergent herbicides could be expected to reduce the seed bank.

The oryzalin and pendimethalin plots at the couch trial site. Timing of applications in relation to the peak germination of *Poa annua* is critical for effective control

POA ANNUA CHARACTERISTICS

A total of 17 *Poa annua* plants from each trial site were taken from the seed bank trial and the plant height and tiller number determined (Table 8). There was a significant difference between the characteristics of the *Poa annua* plants between the two sites. At the kikuyu site the *Poa annua* plants were significantly

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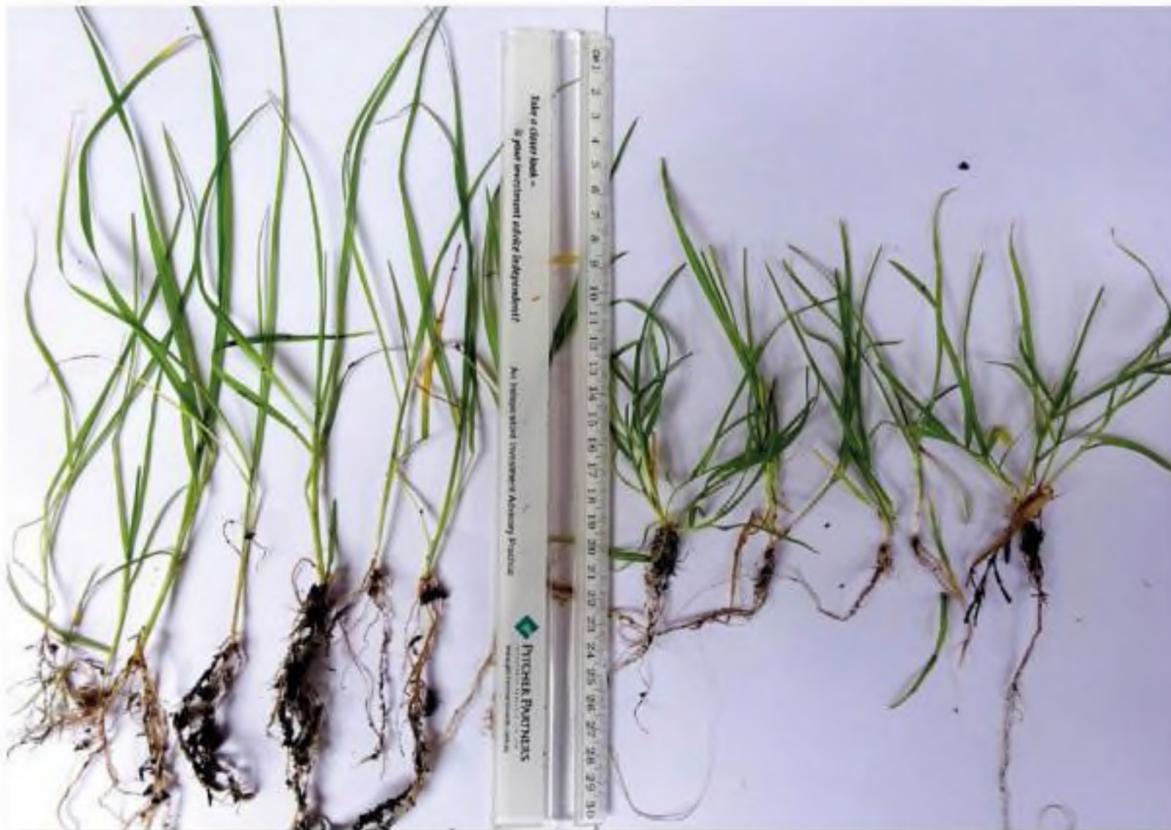
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There was a significant difference between the characteristics of the *Poa annua* plants between the couch and kikuyu sites. At the kikuyu site (left hand side) the *Poa annua* plants were significantly taller and had fewer tillers than the couch site (right hand side)

taller and had fewer tillers compared to the plants from the couch site (see photo above). The plants at the couch site were shorter and more compact with a greater number of tillers.

CONCLUSIONS

The results of the pre-emergent trials indicate the following;

- All the pre-emergent herbicides are effective in controlling or minimising the germination of *Poa annua*.
- The site conditions can have a significant effect on the efficacy of the herbicide treatments. High soil moisture content in particular appears to reduce the efficacy of the herbicides.
- Timing of applications in relation to the peak germination of *Poa annua* is critical for effective control.
- During this trial the prolonged dry conditions meant that the peak *Poa annua* germination period was late into the period after the herbicides were applied and some were close to the end of their effectiveness (e.g. oxadiazon) before there was significant germination.
- Repeat applications for some pre-emergent herbicides are required.

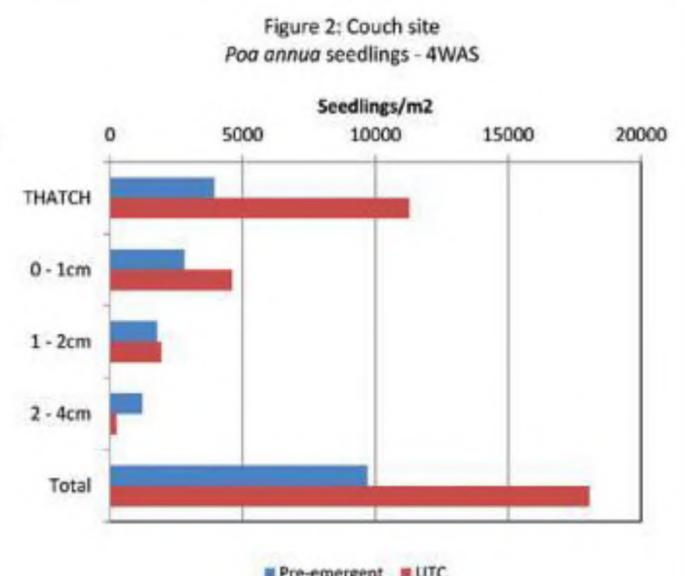
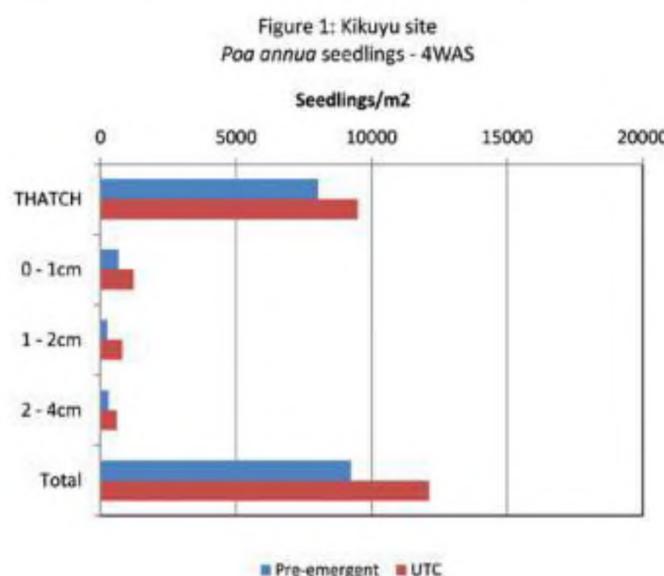
- The results should be viewed in terms of their expected activity and at 168 days after application all of the herbicides would be expected to be beyond their normal period of effectiveness.
 - Monitoring conditions is critical in understanding how to get the best out of a pre-emergent herbicide programme.
 - At the couch site where the conditions were drier, the pre-emergent treatments appeared to have been more effective.
 - The kikuyu site was relatively wet compared to the couch site and the conditions were more conducive to a higher population of *Poa annua*. It is also postulated that the high soil/thatch moisture content had reduced the efficacy of the herbicides.
 - The *Poa annua* characteristics between the sites were very different and this reinforces the diversity of the species.
 - There was some difference in the turfgrass quality and density in relation to the application of pre-emergent herbicides. However, at the kikuyu site there was an obvious deterioration in the plots where there was little or no *Poa annua* when compared to the untreated control. These observations would indicate that on poorly drained and wet soils that there is a case to be made to let the *Poa annua* develop over winter to provide some surface protection and then remove it in the spring/summer.
- In relation to the *Poa annua* seed bank study, the seedbank is large and provides long-term regenerative potential for this invasive weed species. The data collected indicates that over a prolonged period that the *Poa annua* population could be reduced through a targeted pre- and post-emergent herbicide programme.

ACKNOWLEDGEMENTS

John Neylan and David Nickson wish to gratefully acknowledge the financial support of the Sports Turf Association (Victoria). The full project report, released in May 2016, can be downloaded at www.vicsportsturf.asn.au.

Below right: Figures 1 and 2: Seedling data from the seedbank study (kikuyu site, left, and couch site right)

Below: The seedbank aspect of the study demonstrated that at both sites there was a substantial seedbank present. Pictured are the seedlings grown out from core samples taken – top left (thatch layer), top right (0-1cm), bottom left (1-2cm) and bottom right (2-4cm)



STRIKER QUALITY TURF SEED



STRIKER GOLD SHINES THROUGH CANBERRA'S COLD WINTERS

The winter playing surface of Manuka Oval has taken on a whole new lease of life, thanks largely to the installation of gravel and herring bone sub-soil drainage, along with the introduction of new continental ryegrass varieties about three years ago.

Head curator, Brad Van Dam, came to Manuka oval about nine years ago. He realised if Canberra's finest oval was to support big AFL games it would have to be in absolute first-rate condition. Manuka has a bermudagrass base, which does well over summer supporting important cricket matches, but struggles to grow over the very cold Canberra winters.

The oval had previously been over-sown with a mix of Mediterranean ryegrass varieties, but Brad has in more recent years turned to continental varieties. Three years ago, after a recommendation from Heritage Seeds Turf Portfolio Manager, Matt Merrick, Brad trialled Striker Gold. Striker Gold is an elite three-way blend of premium continental ryegrasses.

"The Striker Gold we get from Heritage Seeds / Nuturf is a really strong mix and each grass has its own characteristics and strengths. It does very well in our cold winters," Brad said.

"It's dense, holds darker colour and we get good growth, even in the middle of winter here.

"Striker Gold handles a lot more traffic than other grasses and I've been getting a lot of positive feedback from colleagues and the public on the presentation of the ground for televised AFL matches. "We found the Mediterranean ryegrasses don't handle the wear as well and the colour wasn't as great."

Brad said it is a requirement for all AFL premiership grounds to be over-sown with ryegrass to maintain colour and playability. He starts with a full autumn renovation to open-up the surface so he can start planting ryegrass seed.

"We run the couch outfield at about 10 mm high and when we start preparing the seedbed for the ryegrass, I scarify in a minimum of three directions to open it up and get rid of the mat and thatch.

"I go through with a core machine and punch 40mm holes into the surface about 5 cm apart. We remove all thatch and matting from the surface and the oval is prepared to maximise seed sand contact.

"Then we put the seed down in two directions with a speed seeder, which pushes holes into the ground and drops



Above: Frost thawing out after negative overnight temperatures. Manuka oval can experience anywhere from 50-100 frosts per year. The Continental ryegrasses have given outstanding performance in the cold climate.

the seed into the holes.

"I do that straight after coring and then rub it in with a drag mat and then water to make sure the seed stays moist and we have germination with Striker Gold within 5 days. I'll put fertiliser out after that and then wait two to three weeks and plant again."

"The results with Striker Gold have been outstanding for us!"

Brad said Manuka oval has 15,000 seat capacity and hosts three AFL Premiership fixtures each year, plus international cricket and other matches over summer.

Training package endorsed 56

Bruce Davies, chair of the National Turf Education Working Group, looks back at the recent review of the Sports Turf Management training package and national TAFE teachers' validation meeting.

GRASS-ROOTS WITH JOHN NEYLAN



Controlling the enemy 42

Following on from last edition's review of the *Poa annua* control in warm-season grasses survey, ATM columnist John Neylan looks at the results from an earlier research project he conducted with David Nickson on behalf of STA Victoria on pre-emergent control of *Poa annua* in couch and kikuyu.



Also in this edition...

Foreword Thinking	4
AGCSATech Update – Spraying	40
Regional Profile – Shepparton GC, Vic	58
Around the Trade	64
Association Reports	68

Contributors to Australian Turfgrass Management Journal Volume 19.1 (January-February 2017)

Col Caulfield (Caboolture GC); Shaun Cross (GCSAQ); Billy Daunt (Shepparton GC); Bruce Davies (NTEWG); Elliott Dowling (USGA); Hagen Faith (Westpac Stadium, NZ); Scott Fogg (STA ACT); Pat Gross (USGA); Mal Grundy (Murray Bridge GC); Tony Guy (STA WA); Gil Hanse (Hanse Golf Course Design); Steve Hodson (NZGCSA); Allison Jenkins (AGCSA); Mark Johnson (TGCSA); Erik Kinlon (HG Sports Turf); Steve Marsden (Royal Sydney GC); Hayden Mead (Kingston Heath GC); Peter Murray (Kingston Heath GC); John Neylan (Turfgrass Consulting and Research); Matthew Oliver (PNG National Football Stadium); Andrew Peart (AGCSATech); Mat Poultney (VGCSA); Phil Soegaard (Lakelands GC); Simone Staples (AGCSA); Richard Stephens (Turf Australia); Ben Tilley (Headland GC); Craig Wood (AGCSA); Garry Woolard (STA VIC).

Role model

We all know that Australian golf course superintendents punch well above their weight when it comes to the level of presentation they achieve at their clubs day in day out. Whether it's the venerable clubs of our major centres or the many gems tucked away in regional areas, you can be guaranteed that the course superintendent and their crew are continually striving to produce the best possible conditions with the resources available at their disposal.

For a number of years now Australian Turfgrass Management has carried a profile of a regional golf club in each edition of the journal. These profiles give the smaller clubs a chance for their 15 minutes of fame (if being included in ATM constitutes fame) by highlighting their course, their operations and some of the unique challenges they face. Over the years we've travelled the length and breadth of the country, stopping off at Gove in Arnhem Land, NT, Geraldton in north west WA, Murray Bridge in South Australia and Ulverstone on the Tasmanian northern coast. Ask anyone within the industry just how good some of our regional courses are and most will agree that we are blessed and they add to the wonderful diversity of golf courses that Australia boasts.

This edition's profiled club is Shepparton Golf Club, about two hours north of Melbourne in the heart of the Goulburn Valley. Shepparton Golf Club is home to long-serving course superintendent Bill Daunt who, like many of his regional superintendent counterparts, prefers to fly under the radar and stay out of the limelight.

Six hours after Bill had dutifully submitted the profile (before the prescribed deadline too it must be added), an email dropped into my inbox from Ron Wilkinson, the chairman of greens and course at Shepparton. As we all know, being a superintendent can be a thankless job at the best of times and recognition can be hard to come by, so it was therefore very refreshing to read the following:

Dear Brett,

"I write as chairman of the Shepparton Golf Club's Greens & Course with reference to your upcoming article regarding Bill Daunt. I feel obliged to add some of my own thoughts to his contribution as I know Bill is very humble and our club members are very proud of him. I would like to add the following [to the article] if at all possible:

"The Shepparton Golf Club is very fortunate to have such a wonderful superintendent. Bill Daunt exemplifies all the positive attributes of a dedicated, diligent and responsible employee. The presentation of the Shepparton Golf Club course is testimony to Bill's enthusiasm, expertise and dedication. He is a role model to his staff and is very popular and respected by all golf club members and knows nothing more than giving his best always."

Ron Wilkinson

Chairman Greens & Course.

Given some of the stories you hear of the treatment of some superintendents and the unrealistic expectations placed upon them by club management and committees, it is heartening to hear a club respecting and acknowledging the hard work and dedication of their superintendent. Thanks Ron for the email and well done to Bill and the Shepparton crew for their efforts which are obviously well appreciated. Enjoy the read...



Brett Robinson, Editor



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Future-proofing your course

As the golf industry evolves and course infrastructure deteriorates, golf facilities must be prepared to make the necessary changes to remain viable and sustainable write USGA agronomists Elliott Dowling and Pat Gross.

With a master plan on hand, golf courses will be better equipped to make needed improvements while using resources as wisely as possible

What will your golf facility look like in five, 10 or 20 years? While nobody has a crystal ball that can look into the future, successful businesses have long recognised that without making constant improvements and planning for the future they will fall behind.

In a rapidly changing industry like golf, facilities need to continually improve the playing experience and prepare for challenges like aging equipment and new governmental regulations. Long-range planning helps facilities identify opportunities and address issues before major problems occur.

Golf course committees tend to have frequent turnover and ideas tend to come and go as new decision makers take charge. With less time to get things done, the focus is usually on short-term solutions that can have a negative effect on long-term progress. Comprehensive master plans help facilities organise and prioritise projects to avoid wasting precious time and money. Master plans also help courses avoid spending money on projects that conflict with future plans or long-term goals.

The most successful master plans are comprehensive and address the following subjects which we will then look at in more detail:

- Water management;
- Irrigation system improvements;
- Drainage improvements;
- Equipment inventory and replacement schedule;
- Maintenance facility improvements;
- Tree management;

- Cart path improvements;
- Staffing and labour requirements; and
- Architectural and design improvements.

WATER MANAGEMENT PLAN

Water is taken for granted at many golf courses, and few facilities have a written plan regarding how water is managed. A written water management plan serves several purposes:

- Identifying how much water is actually needed to keep turf alive and playable in an average year;
- Establishing a method for measuring and managing water use;
- Setting forth contingency plans in the event of water shortages; and
- Providing a valuable document that can be shared with stakeholders, regulators, government officials and others that may have input on how water is used and managed in the community.

The three main elements of a written water management plan are a water budget, a list of best management practices (BMPs) for irrigation system operation and a drought emergency plan.

Water Budget: A water budget uses historical climate information and site data to estimate the amount of water a golf facility needs in an average year to keep turf healthy and playable. Developing a water budget for a particular golf course involves collecting data on:

- The size of the property;
- Obtaining reference evapotranspiration based on the climate and location of the golf course;
- The grass species being grown; and
- The historical average rainfall.

Irrigation BMPs: While irrigation is an intuitive part of the job for many superintendents, it is very important to have a written document that outlines the decision-making process for determining when irrigation is necessary, how much water should be applied and how the irrigation system controller is programmed. One way to determine what should be included in this document is considering what a new irrigation technician or assistant superintendent would need to know about how the golf course should be irrigated.

Irrigation BMP documents should list the steps that go into determining water needs and should provide answers to the following questions.

- How should staff use weather station data and visual assessments of turf health?
- How is soil moisture measured?
- What are the different microclimates on the course and how are they irrigated differently?

These examples are not a comprehensive list of the items that should be addressed in irrigation BMP documents, but they provide a baseline to help describe the irrigation process in full detail. A list of site-specific BMPs can be added to this document to further describe the many programmes that are employed to maximise water use efficiency.

Drought Emergency Plan: Periodic water shortages can occur, even in areas with relatively high rainfall. Developing a written drought emergency plan in advance of mandatory water cutbacks can guide rational decisions in the event of a drought.

Drought ordinances typically mandate that customers reduce their water usage depending on the severity of drought. The goal of a drought emergency plan is to determine in advance where and how to reduce irrigation to cope with various levels of water shortage or restriction. Such a plan involves measuring the size of golf course areas, gathering data on historical water use patterns and determining water use priorities.



IRRIGATION SYSTEM IMPROVEMENTS

An efficient irrigation system is critical to conserving water resources and producing quality turf. Irrigation systems are also one of the more costly parts of the golf course infrastructure to replace when things start falling apart. Sprinklers, pipes, fittings, valves and controllers all experience wear and eventually must be replaced. A master plan should include a section describing the decision-making process and timeline for making necessary irrigation system improvements.

The following items should be included in the irrigation system improvement plan:

- Documentation on the age of various irrigation system components and their expected life span;
- Provisions for irrigation system auditing at regular intervals to document efficiency and uniformity. This information will also provide an indication of the expected life span of components;
- Documentation on the current cost to operate and repair the irrigation system and purchase water;
- Provisions to upgrade and adjust the irrigation system as part of any architectural changes to the course; and
- Plans for upgrading to new technology as it becomes available.

The article 'Pulling the Trigger', which appeared in Australian Turfgrass Management Volume 17.6 (November-December 2015, pages 50-54), provides



Periodically checking sprinkler nozzles for wear and debris is a best management practice that should be outlined in water management plans. Replacing worn or ineffective nozzles is an easy way to improve the overall performance of an irrigation system

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Developing a written drought emergency plan in advance of mandatory water restrictions can guide rational decisions in the event of a drought

further details on many aspects of the irrigation system that need to be evaluated and addressed as part of a master plan.

DRAINAGE INFRASTRUCTURE IMPROVEMENTS

Few things are as important to turf health and playability as water management. The common misconception is that water, regardless of quantity, is good for turf. The reality is that too much water is detrimental to turf health and playability. Therefore, an efficient drainage system – i.e., a combination of surface and subsurface drainage – is essential to maintain high-quality turf that golfers demand.

Key elements of a successful drainage master plan include:

- A map of existing drain lines that identifies their age and performance;
- The locations of wet areas;
- The locations of surface collection areas;
- Notes identifying where seepage drains are needed;
- Pipe sizing and drainage design for any necessary improvements; and
- Labour and cost estimates for improving drainage.

The best approach to managing golf course drainage is to perform a thorough site analysis and install drainage before a problem occurs, especially in high-profile areas such as greens, fairway landing zones and high-traffic areas. Removing excess water from playing surfaces in a quick and effective

manner will improve turf health and allow play to quickly resume following rain events. Ultimately, successful drainage translates to fewer lost rounds because of saturated course conditions.

EQUIPMENT

Golfers expect a high level of turf conditioning, but many are unaware of everything it takes to deliver such conditions. An appropriate, properly maintained equipment fleet that is tuned to perform specific tasks is necessary to meet the requirements of today's demanding golf market.

An equipment replacement plan is critical for maintaining an efficient equipment fleet. Unfortunately, maintaining an aging equipment fleet has become an expensive reality for many superintendents and their equipment technicians. Courses using outdated equipment can spend tens of thousands of dollars per year on equipment maintenance and repair, which is significantly higher compared to courses with up-to-date equipment.

Furthermore, consider the impact on the maintenance operation each time a piece of equipment breaks down. Equipment being repaired obviously cannot be used for course maintenance. Breakdowns increase as equipment ages, which could lead to frustrated golfers over time if important tasks are not being accomplished as often as necessary.

If your facility receives negative comments regarding course conditioning, it may be time to develop a master plan for equipment replacement. The master plan should include a plan for each piece of equipment in the inventory, detailing when it was purchased, how much money has been spent on repairs, the useful life span of the equipment and the estimated replacement cost. The annual expenditure necessary to keep pace with equipment replacement can be estimated by dividing the total replacement cost by its useful life span.

MAINTENANCE FACILITY

A safe, clean, organised and well-planned maintenance facility is essential for maintaining a golf course to today's high expectations. Developing a maintenance facility master plan will answer important questions regarding the effectiveness of your maintenance facility. Some key questions that all golf courses should answer are:

- Is all of the equipment kept inside?
- Is there adequate room to access frequently used items without moving other equipment?
- Is there adequate space for employees – i.e., lunchroom and locker room?
- Are chemicals stored in a clean, well-lit, organised and secured structure? Is that structure located away from high traffic areas in the maintenance facility where materials can be easily and safely handled?



CONTINUED ON PAGE 52

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An appropriate, properly maintained equipment fleet that is tuned to perform specific tasks is necessary to meet the requirements of today's demanding golf market

CONTINUED FROM PAGE 50

- Does the maintenance facility promote efficient workflow onto and off the golf course? Is a significant amount of travel time required to go from the maintenance facility to the golf course? and
- Does the maintenance facility promote efficient workflow between employee meeting rooms, breakrooms and equipment storage areas?

Maintenance facilities pose the greatest potential risk of environmental impact at a golf facility. Potentially hazardous materials such as fuels, fertilisers, pesticides and other chemicals are all stored at maintenance facilities. Therefore, maintenance facilities should be constructed and maintained with human and environmental safety in mind. All areas of a maintenance facility must meet local and federal environmental regulations.

For more information on fertiliser and chemical storage, as well as other maintenance facility considerations, please refer to the article 'Time to upgrade?' which appeared in Australian Turfgrass Management Journal Volume 16.3 (May-June 2014, pages 58-63).

Repair costs for aging equipment can stretch even the largest budgets. Replacing old equipment on a timely schedule maximises efficiency and reduces repair costs



It is often difficult to get support for making necessary improvements to a maintenance facility because golfers seldom visit the area. Employee morale, safety and workflow are also difficult to quantify but extremely important nevertheless. A maintenance facility master plan will help identify ways to improve an existing maintenance facility or possibly lead to the construction of a new facility. In either case, maintenance facility improvements can enhance safety and employee morale, reduce environmental risks and improve golf course conditioning.

TREE MANAGEMENT

One of the most emotional elements of golf course management is trees. Trees and turf can coexist, but an overabundance of trees – especially poor-quality trees – can increase maintenance costs and negatively affect turf quality. Additionally, tree populations are subject to rapid change due to numerous factors and new pest problems are constantly emerging.

Therefore, a tree management plan is an important document for all courses, regardless of the overall number of trees. A successful tree management plan should include:

- A maintenance and pruning programme;
- A tree planting plan; and
- A tree removal plan.

When developing a tree management plan, it is important to consider the golf course architect's original design. Too often golf courses overplant trees in an effort to create separation between holes, direct players around an obstacle or increase difficulty. Although well-meaning most of the time, in reality many 'in-house' plantings can significantly detract from the original architecture.

CART PATHS

Cart paths are an important tool for managing traffic at many golf facilities. Having a comprehensive plan is the best way to conserve resources and address the long-term functionality of cart paths.

Cart paths can fail for numerous reasons such as weather, tree roots, traffic, underlying soil conditions, age or improper construction. They may also be poorly designed or located in a way that prevents them from effectively handling traffic. Regular maintenance is necessary to ensure cart paths remain smooth, safe and appropriately positioned. Installing and maintaining cart paths is expensive. Fortunately, cart path improvements can be accomplished in phases so that costs can be spread out over time.

One common cart path mistake is installing paths that only accommodate cart traffic. Paths should also be designed to accommodate all pieces of maintenance equipment to reduce traffic stress on turf and allow the maintenance staff to rapidly and efficiently move equipment around the golf course in all types of weather.

STAFFING AND LABOUR REQUIREMENTS

To be successful, golf courses must recruit, train and retain quality employees. The easiest way to determine how many employees or labour hours are necessary at your facility is to have a written set of maintenance standards.

Once the maintenance standards are established, the superintendent can perform a labour analysis that outlines daily, weekly and periodic maintenance duties. Using labour analysis, superintendents can determine where additional labour hours are necessary or where labour can be reallocated to other areas. A labour analysis also is extremely helpful for budgeting purposes and can provide valuable support and guidance when contemplating new maintenance programmes.

ARCHITECTURAL AND DESIGN IMPROVEMENTS

An architectural master plan should be developed by a golf course architect. The impartial and well-trained eye of an architect is crucial for evaluating the strategy and playability of a golf course and recommending necessary changes.

An architectural master plan should include a hole-by-hole analysis of the strategy and playability of tees, fairways, bunkers, greens, trees, water features and other design elements. The plan should also include recommendations for improvement. A



good architectural master plan also incorporates the infrastructure elements previously discussed in this article including the irrigation system, drainage, cart paths, trees, equipment, maintenance facility and staffing requirements.

Combining both architectural and infrastructure components into a master plan makes it possible to properly forecast and budget for improvements while avoiding costly mistakes.

CONCLUSION

Constant improvement is the hallmark of all great golf facilities. Golfers and committees can easily develop an endless list of ideas to enhance a golf course, but improvements should have a specific goal and purpose. Improvements should be part of

A comprehensive tree management plan outlines a long-term vision for tree removal and planting, ensuring consistent tree management decisions. Without a plan, the risk of overplanting increases with changing decision makers

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In addition to golfer traffic, cart paths should also be designed to accommodate all pieces of maintenance equipment to reduce traffic stress on turf and allow the maintenance staff to rapidly and efficiently move equipment around the golf course

a comprehensive master plan and be coordinated with other projects to avoid the added expense of disrupting work that has already been completed.

An effective master plan is much more than a design document; it addresses all aspects of golf facility infrastructure including water management, the irrigation system, drainage, equipment, the maintenance facility, trees, cart paths, staffing requirements and architecture. A comprehensive master plan helps current and future decision makers prioritise and budget for needed improvements.

With a master plan on hand, golf courses will be better equipped to make needed improvements while using resources as wisely as possible. Furthermore, master plan documents can help golf facilities move toward a more economically and environmentally sustainable future.

ACKNOWLEDGEMENTS

This article has been reprinted with permission from the USGA Green Section Record. The original article appeared in GSR Vol. 54 (23), 2 December 2016. Elliott Dowling is an agronomist in the Northeast Region and Pat Gross is the regional director of the West Region.

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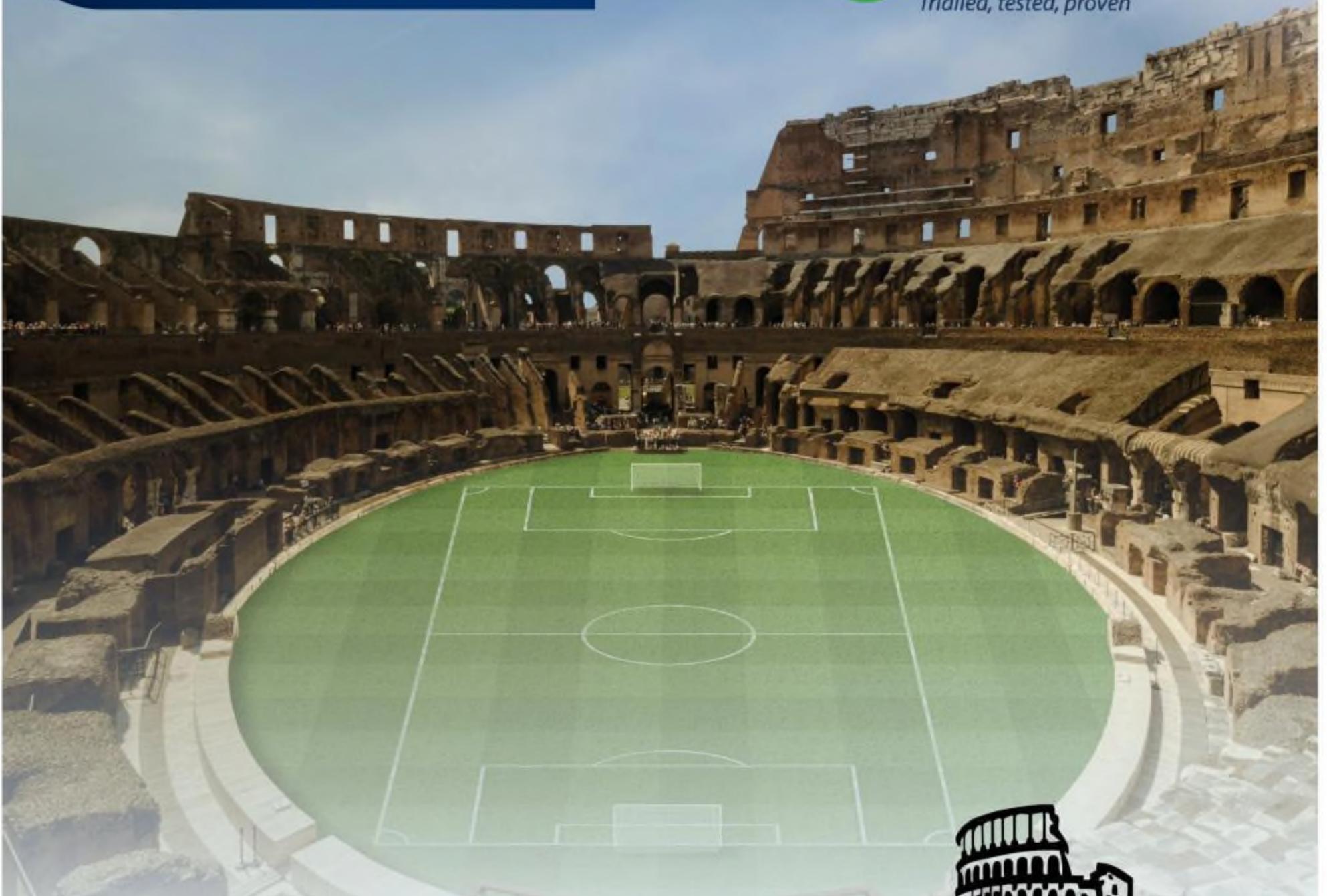
Below right: The impartial and well-trained eye of an architect is crucial for evaluating the strategy and playability of a golf course and recommending necessary changes

Below: To be successful, golf courses must recruit, train and retain quality employees



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Training package endorsed

Bruce Davies, chair of the National Turf Education Working Group, looks back at the recent review of the Sports Turf Management training package and national TAFE teachers' validation meeting held in the Hunter Valley last December.

After 12 months of review the new training package for Sports Turf Management education has been endorsed. The package will be delivered by TAFE colleges around the country from the beginning of 2017. As expected the new package has brought in some minor changes to the structure and content of the turf qualifications, with the most important changes as follows:

- **Certificate II:** The same number of electives with the unit 'Participate in environmentally sustainable work practices' being replaced by 'Assist with soil or growing media sampling and testing' as a core unit.
- **Certificate III (Trade Qualification):** A move to 16 units from 15 which will see some slight changes in the timetabling of the trade qualification in the colleges. There is an increase in the number of electives with an over representation of irrigation units. The core unit dropped is 'Apply environmentally sustainable work practices'.
- **Certificate IV:** Minimal change with a move from seven to eight electives as the unit 'Develop workplace policy and procedures for sustainability' becomes an elective.
- **Diploma:** Little to no change.

Though there are some refinements still needed in some of the units and qualifications, congratulations should go to those who helped in the process of writing and reviewing. The process on future improvements in the new training package will go through the new Industry Reference Committee (IRC), the make-up of which is still to be finalised.

HIGHER EDUCATION

There has been some positive development for turf management training at the Degree level. Melbourne

Polytechnic (formerly NMIT) is developing a degree programme for the turf industry in conjunction with La Trobe University.

A model already exists where Melbourne Polytechnic trains students in specialist areas of agricultural science (e.g. aquaculture and viticulture), so turf management would simply become another stream in that programme. It would be a full degree with 24 units – 16 general agronomy (e.g. soils, ecology, environmental science, plant physiology) plus eight specialist turf units.

Students could apply for exemptions for up to six units if certain Diploma units had been completed. Potentially, this would leave 18 units to complete, maybe four units per year (part-time) over four and a half years. This approach would allow and encourage life-long learning for turf students, from apprenticeship to Diploma to Degree (and even post-grad in the future), all the while maintaining their job and their income.

TURF EDUCATION CONFERENCE

Hunter TAFE recently hosted sports turf management educators from across the country as part of the annual two-day National Sports Turf Validation Meeting. Day one started with a tour of the fantastic sports turf facilities Hunter TAFE has to offer, before getting down to business where the assessment strategies were tabled ahead of the formal roll out of the new training package in 2017.

Day two saw a focus on the needs of industry. Newly appointed AGCSA chief executive Craig Wood spoke passionately about his visions for the association. Chris Chapman, president of Sports Turf Association Australia, outlined his proposal for increasing student numbers using TVET (TAFE-delivered vocational education and training) in schools. Sam Papisidero from Skills Impact spoke of the recent new and exciting opportunity our industry has to get members on the Industry Skills Council Review Committee. Sam participated in the proceedings for the two days giving some valuable guidance to the group on the process for improving our training package.

The following educational institutions were represented at the meeting:

- Hunter TAFE – Kurri Kurri, NSW;
- Canberra Institute of Technology, ACT;
- Holmesglen Institute – Waverley, Vic;
- Melbourne Polytechnic – Fairfield, Vic;
- North Coast TAFE, Wollongbar, NSW;
- North Sydney Institute – Ryde, NSW;
- South Metropolitan TAFE – Perth, WA;
- TAFE Illawarra – Yallah, NSW;
- TAFE North Queensland;
- TAFE Queensland – Brisbane, Qld;
- TAFE SA – Urrbrae, SA;
- The Gordon – Geelong, Vic; and
- Wodonga Institute of TAFE, Vic.

The National Turf Education Working Group (NTEWG) also held a meeting as a part of the

Above: Sam Papisidero from Skills Impact participated in the National Turf Validation Meeting last December and provided the group with some valuable guidance on the process for improving the sports turf management training package

conference and saw excellent representation from both the state and national associations. The meeting centred on building student numbers, reducing skills gaps, improving apprentice selection and the implementation of delivery and assessment standards.

Thanks to those industry associations (AGCSA and STA) as well as sponsors Bayer and Toro Australia for making this conference possible. Thanks also to Chris Booth, Mark Crawford, Albert Sherry and the team at Kurri TAFE who did a fantastic job of hosting the group.

TURF EDUCATION WORKING GROUP

The NTEWG met twice in 2016. The emphasis was on aligning the Delivery and Assessment Standards (formerly the Delivery and Assessment Guides) to the new training package. This new title aligns better with some of the language used in the new training package, but more importantly better emphasises their role as the standard for training expected by our industry.

The group next meets as part of the Australian Turfgrass Conference on the Sunshine Coast on Monday 26 June, 2017. As always it will be important to have strong representation from industry and educational representatives from the turf associations are encouraged to please put this date in your diary. This working group has been formed to serve the industry in educational matters

and if there are turf managers that would like to be involved please contact me via email bruce.davies@cit.edu.au.

QUALITY PROVIDERS

Whenever I get the chance to talk to industry about turf education, I am pushing the importance of quality in education. This importance has been highlighted in the last 12 months with a number of organisations taking money from students, only to fail in delivering them quality education. It is estimated this has cost the government and individuals up to \$2 billion dollars.

If you are unsure about an education provider, check that they teach according to the industry-endorsed 'Delivery and Assessment Standards' referred to above, or make enquires through your industry associations. The training organisations attending education meetings as listed earlier are all about providing quality education.

GRADUATE OF THE YEAR AWARDS

Finally, congratulations to those graduates that have been selected to represent the various state associations in the AGCSA and STA Graduate of the Year awards. As you go through both the presentation and interview process, I encourage you to prepare well and make the most of the opportunity to meet and speak with industry leaders. Enjoy the conference and good luck. 🍀



NTEWG chair Bruce Davies – pushing the importance of choosing and supporting 'quality' turf education providers

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Welcome to 2017 and may I wish all turf professionals a very prosperous New Year. Those of us in this demanding industry realise that while many of us enjoyed the festive season with family and friends, the Christmas period is often one of the most challenging times for a golf course superintendent or turf facility manager and their respective teams. High temperatures (or big rains), lots of traffic and less access to staff often means big hours and sleepless nights for these dedicated men and women. I hope you all got through with as little stress as possible and are moving purposefully into another year.

Prior to Christmas I attended two events alongside AGCSA events and education manager Simone Staples that gave me a strong awareness of some of the issues surrounding the education of both apprentices and turf professionals that are vitally important to our industry.

The first event was the meeting of the state golf course superintendent association presidents which was my first opportunity to catch up with all state leaders together to discuss these industry issues, warts and all. The second event was the meeting of the National Turf Education Working Group (NTEWG) which is comprised of the TAFE colleges and relevant industry bodies including Sports Turf Australia and the AGCSA.

First, can I make it clear that the commitment and dedication that the managers, instructors and lecturers within the TAFE system exhibit is exceptional. Mostly under-resourced and time poor, these people are doing their utmost to turn out high quality people to grow our industry with little government help. I urge you to do anything you can to assist them, including making your local MP's aware that our areas of expertise deserve

appropriate TAFE and university funding every bit as much as horticulture, agriculture and other trades. At both meetings, however, it was starkly apparent that some areas of education we are delivering as an industry need substantial improvement and reform.

In the first instance, the discrepancy in contact hours for apprentices from state to state is worryingly inconsistent. When I completed my turf apprenticeship (many) years ago, I was required

“Most importantly, don't take any shortcuts with apprentices. An apprenticeship is designed to set a young man or woman up with skills to see them employed through the rest of their life. We at least owe them that commitment”

to complete 1200 hours of schooling. This was not negotiable. I did the 1200 hours in the allotted three years at a very well-equipped TAFE college yet still felt there was so much more to learn!

Today, funding issues mean the hours of contact range from only 280 hours to 1200 dependent upon your state (and I'm told few are ever expected to do near that maximum.) It begs the question – Just what are the things the lack of hours and funding is forcing to be left out of the curriculum? Yes, we all understand you also learn on the job as well, but a strong understanding of the theory has a huge impact on the practical application of knowledge.



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For the past 15 years course superintendent Bill Daunt and the crew at Shepparton Golf Club have presented the course to a level which has drawn praise from across the membership. Pictured is the 7th green looking back up the fairway



Shepparton GC, VIC

Shepparton Golf Club has been home to course superintendent Billy Daunt for nearly 15 years. Here he gives ATM an insight into his course and maintenance operations.

Superintendent: Bill Daunt (48).

Nickname: Billy.

Family: Wife Robyn, children Tiana, Danica and Jemma.

Years as a superintendent: 16.

Association involvement: VGCSA and AGCSA 16 years.

Turf management career: Green Acres Golf Club (groundsman 1989), Peninsula Country Golf Club (groundsman and progressing to superintendent 1990-2001), SISTEMS Horticulture (site supervisor for grounds and garden maintenance at RAAF Williams Laverton and RAAF Point Cook 2001-2002), Shepparton Golf Club (superintendent 2002-present).

Qualifications: Associate Diploma in Horticulture, Associate Diploma in Turf Management.

Where in Australia is Shepparton Golf Club?

Shepparton is located alongside the Goulburn River two hours north of Melbourne in the heart of the Goulburn Valley. It is known nationally and internationally for its fruit growing and dairy industry. The town hosts many sporting events including tennis tournaments, Shepparton marathon, challenge triathlon, Victorian bowls championships and various horse events. The golf club is the home club of PGA professional Jarrod Lyle.

Tell us a bit about your background and how you came to be a superintendent. My family is from an agricultural background and I was interested in working with the land and soil but not necessarily in that field. I undertook work placement at the golf clubs in Mount Gambier as part of a horticultural course and enjoyed the experience. I then studied horticulture in Wagga Wagga and did volunteer work at Wagga Wagga and Wangaratta golf clubs.

Moving to Melbourne to gain employment on a golf course, Green Acres provided me with an opportunity, before moving to Peninsula Country Golf Club which was a great experience with the resources both financially and academically. Leaving Peninsula I then worked for a private contractor in the grounds maintenance industry before taking on the position at Shepparton.

Who were some of your early mentors and what did they teach you? David Nickson, the then superintendent at Peninsula, was an early mentor whose quest for knowledge highlighted the fact that there is so much to learn, there is always room for improvement, be prepared for change and don't take everything at face value.



The Shepparton crew (from left) Sam Davies, Shannon O'Brien, Rhiley Lau and superintendent Bill Daunt. Absent is David Wilkie

How did the job at Shepparton GC come about and what do you like most about being the superintendent there? I was in a position where having been a superintendent previously I was looking for that challenge again. The position at Shepparton was advertised and I was fortunate enough to be accepted. Shepparton is a town that is large enough to have the infrastructure needs for a growing family. Its location enables access to many areas including the rivers for fishing and camping, while Melbourne is only a couple of hours away.

Give us an overview of Shepparton GC and some of its unique characteristics. Shepparton GC is on its second site after moving from the centre of town in 1922. When first built on this site it was a nine hole course with sand scrape greens. Over the following years land was purchased to extend to 18 holes and in 1956 Sam Berriman was engaged to design an 18 hole grass greens course, which meant the relocation of the clubhouse from down near the river. The new course and clubhouse were officially opened in 1959. The clubhouse's new location on the highest point on the course meant that several holes could be seen while having a drink after walking the only hills in Shepparton!

The greens were rebuilt during the 1990s and sown with either Pennlinks, Penncross or the Dominate blend bentgrass. The course is tight with many trees coming into play. The course was originally heavily planted with *Pinus radiata* which has created many shading issues over the years. These are being replaced as they die with a mixture of natives and conifer species as the club has a desire to retain the pine theme on the course.

As we are near the river reserve, wildlife is abundant with wallabies, kangaroos, echidnas, the odd koala and various bird species calling the course home. In a wet winter it is necessary to ban carts on the front nine, however, they are still used on the back nine, which is of benefit as it gives members in carts an opportunity to still play.

What are some of the unique features about Shepparton GC from a turf management perspective? The changing soil types, particularly on the fairways, result in different irrigation, fertilising and cultural practices. The temperatures during summer present a challenge, especially the days over 38 degrees. We have nature's scarifying machines (aka cockatoos and corellas) during summer increasing aeration on the greens and fairways which can require extensive maintenance if they cause damage before we have time to move them on!

Is it an easy/hard facility to manage? What's the most challenging aspect? Every course is different and has its own challenging aspects. As we are working with nature, each season tends to throw up a new challenge just to keep us on our toes. The



improvements to the irrigation control system have certainly helped, however, the aging infrastructure does cause some headaches. The age of the greens and the various issues with them makes them a challenge at different times.

Take us through your turf management operations there. What changes have you implemented over the years? I have been fortunate enough to have the resources to implement a regular grooming and dusting programme along with regular needling tining of greens. Scarifying and tining is also occurring on tees. Shower grates have been installed in the majority of the bunkers to assist with drainage as the native soils create issues when subsurface drains are installed.

Other areas of focus have been the implementation of a tree replacement programme and ensuring that all staff are trained in all facets of the maintenance programme. Being a small crew, we need to be knowledgeable in all areas and to this end I'm hoping to continue to provide them with the training opportunities they need.

What are some of the major challenges facing Shepparton GC both from a turf and club management perspective? Like all clubs, golf is declining due to a number of factors and as such the management is continually assessing

Fire partially destroyed the Shepparton clubhouse in 2014. With a combination of insurance money, club funds and member donations, the renovated facility has become a major community asset. Pictured is the 9th

In 2011 the Shepparton Golf Club constructed a new maintenance facility to replace the rather cramped and confined old shed (below). This has created a far more efficient and productive workspace



CONTINUED ON PAGE 61



AT A GLANCE – SHEPPARTON GOLF CLUB, VIC



The 17th at Shepparton Golf Club

Course specs: The course is sited on 44 hectares of land. Course is 6306m (men) and 5301m (ladies). Greens are either Penncross, Pennlinks or SR1019/SR1020 blend bentgrasses and total 1ha in size. Tees are kikuyu, Legend couch or Santa Ana couch and also cover an area of 1ha. There are 10ha of fairways which are predominately kikuyu with couch and some cool-season grasses in the shaded areas.

Members/rounds: 700/31,000.

Annual course management budget: \$480,000 which includes, staff wages, course improvements and the capital replacement programme.

Staff structure: Bill Daunt (superintendent), Shannon O'Brien (foreman), David Wilkie (groundsman), Sam Davies (2nd year apprentice) and Rhiley Lau (1st year apprentice).

Climate/annual rainfall: On average, temperatures range from 32°C degrees in the summer and fall to 3.4°C in the winter. We receive weeks of high 30s and into the 40s in the summer, and the winters can go into the negatives as low as -4°C. Average annual rainfall is 451mm.

Soil types: The fairways closest to the river are a fine river sand type as a result of river deposits, while the holes on the northern side (four holes on the front nine) of the course are more clay based. The original owners mined sand from this area down to the clay layer to supply the building industry of Shepparton in the early 1900's. Greens and tees are built from the sand mined from the course.

Water sources: We have a water allocation of 248 megalitres (high reliability) from the Goulburn River. The amount of allocation received is determined by Goulburn Murray Water. During the drought years in the early 2000's this was as low as 29 per cent. There is also a bore with an allocation of 135ML. The bore is only used when the river allocation is less than 75 per cent as quality and yield are both poor. These two sources are mixed in the irrigation storage dam.

Irrigation system: The system was installed in 1986 with flexi sat controllers and Rainspray valves and sprinklers in a block design. This replaced the original asbestos pipe and bayoneted system. In 2004 the electrical components were upgraded with a Rain Bird Stratus II controller and decoders. There is a gradual process of replacing the Rainsprays with Rain Bird sprinklers and valves.

Cutting heights/regimes: Greens 3mm-3.5mm and are cut from once to six times a week depending upon the time of the year. Rolling occurs when time and conditions are favourable. Tees and green surrounds are cut once to twice a week at 10mm. Fairways are cut once to twice a week depending upon the growth at 12mm. Rough is at 50mm.

Renovations: Greens are only renovated once a year in the spring. They are scarified, 12mm hollow-tined and topdressed. They are needle-tined every four to six weeks from December to April and are groomed and dusted every four weeks. Tees are solid tined and scarified once a year. Fairways are scarified as budget conditions permit and selected areas are solid tined.

Major disease pressures: Our main disease pressures on the greens are fairy ring, pythium, rhizoctonia and take-all patch. A preventative programme is implemented in the summer months with winter being an as needed basis. Biological products are also being applied to determine if these have an effect in reducing outbreaks. A monthly programme is in place for reducing the effects of fairy ring.

Nutrition management: The fertiliser programme for greens is based on results of soil tests. They receive applications of slow release fertilisers in spring and autumn. During the remainder of the year a mixture of liquid and soluble fertilisers are used along with organic and biological amendments. Fertilising is in conjunction with paclobutrazol and trinexapac applications. Fairways receive an upfront granular fertiliser and an application of gypsum in conjunction with scarification if the budget permits.

You have to be resourceful and innovative at a regional course. To assist with bunker drainage, Daunt installed empty 200L wetting agent drums with holes drilled in them below ground both in and outside select bunker to act as catching points



CONTINUED FROM PAGE 59

ways to encourage more memberships, whether through different introductory programmes, various children's and beginner clinics, to greater exposure in the local press. The continual need to derive other forms of income is a constant battle and this is done through holding various club functions and having the wider community use the course to promote their business. Recently the 10th fairway had marquees installed to hold a dinner as part of a promotion for a community-based fundraiser.

From a turf perspective, irrigation infrastructure replacement is the challenge. The aging pump station on the river, which transfers water to the irrigation dam, is in need of an overhaul. Identifying the options and budgeting for its replacement enables the club to be in a position to replace it when the need arises. Also, our staff numbers have been at four for the past two years due to health reasons of one of the staff. This provides its own challenges as staff numbers directly affect the amount of work that can be achieved and places more responsibility on the other staff. Volunteers are assisting with some of the minor tasks.

Outline any major course improvement works recently completed and/or highlight any ongoing or future works? In 2014 fire partially destroyed the clubhouse (another 10 minutes and it would have been a new clubhouse). As part of the rebuild, renovations were undertaken which were outside the insurance coverage. Through club funds and member donations a more modern interior has been developed. This has meant that it is possible to have three functions at once and provides a fresh new outlook for members and guests.

On the course, the maintenance facility underwent an upgrade in 2011. It has made general maintenance easier and provided a safer working environment. The completion of this facility with the finishing of the concrete flooring and staff amenities is on the priority list. As we have aging members the need for cart paths is increasing. There are several areas where grass tracks can be preserved with use of barriers, whilst other areas will need a designated path. Installing irrigation in the high traffic and play areas near the greens will remove the continual need for stand sprinklers in these areas. Several tees are also to be redeveloped.

The weather and climate is always a great leveller for a course superintendent. How has Mother Nature treated the course in recent times? In my early tenure the drought had a major impact with water restrictions occurring on fairways and tees. It took a couple of years for some of the kikuyu fairways to fully recover from its impact. The floods in 2010 washed some of the irrigation dam wall away which then had to be reinstated and in 2011 a storm uprooted 38 trees and damaged many others, closing the course for four days.



The one product I couldn't manage my course without is... Wetting agents are a major part of our programme. Monthly applications occur on greens and are injected into the irrigation system. This has improved turf quality in several areas.

What are some pros and cons of being a regional-based superintendent? The pros are that the members take a great deal of pride in their club. There are a several volunteers who assist with machinery maintenance, rough cutting, greens renovations, tree watering and garden bed maintenance just to name a few. This saves a number of man hours and assists with the overall presentation of the course. Also, peak hour in Shepparton consists of five cars lined up at a roundabout!

The cons include waiting for reports (e.g.: disease) and products as it takes time to receive them. The delivery has improved greatly over the years from being 5-7 days to sometimes 48 hours. The travelling to various meetings can also be problematic as the distance doesn't always make it possible.

Do you have to be more resourceful as a regional-based superintendent? Whether it is metro or regional we all need to be more resourceful with what we have available. Identify the skill sets of your members and utilising them whenever possible is essential. This has included machinery maintenance and irrigation consultation.

Shepparton's greens were rebuilt during the 1990s and sown with either Pennlinks, Penncross or SR1019/SR1020 blend bentgrass. Pictured is the approach to the 8th green

Shepparton's 10 hectares of fairways are predominately kikuyu with couch and some cool-season grasses in the shaded areas. Pictured is the 6th





Nicknamed 'Arnie' from the Terminator films as it has a skull head on the blade handle and is hard to kill, Shepparton's 20-plus year CheTech bunker rake still keeps on keeping on

Shepparton's greens are renovated once a year in spring. They are scarified, cored with 12mm hollow tines and topdressed. Pictured is the 13th



On the course, to assist with bunker drainage we installed empty 200L wetting agent drums with holes drilled in them below ground both in and outside the bunker to act as catching points. These drums can be pumped out via a pipe connected in them to the surface.

If you could change one thing about your job as a regional superintendent what would it be and why? A place is what you make it. Enjoy where you live and the job comes along for the ride.

How important are the relationships you have with other course supers/trade reps? This is important as we all learn from each other. Through discussion a different perspective can be given on an issue and it also assists in keeping up with changes and new developments. Most people are willing to assist – all you need to do is ask.

What have you got in your shed? Toro Reelmaster 3250D (x2), Toro Reelmaster 3100D, Toro Reelmaster 6700D, Toro Groundsmaster 4000D, Toro Workman (x2), Toro Multipro 1250, CheTech bunker rake, Broomhill bunker rake, John Deere 1445, Kubota 3410 tractor, Ursus 3512 tractor, New Holland tractor mounded frontend loader, Smooth roll, Toro Proforce blower, Verti-Drain 7117 and Dakota 404.

The CheTech bunker rake is 20-plus years old and has been patched up many times as it still rakes well and the hydraulic set up is superior to the other rake. It is nicknamed 'Arnie' from the Terminator as it has a skull head on the blade handle and it's hard to kill!

What's your favourite piece of machinery and what's next on the wishlist? The Multipro 1250 has saved many man hours as it completes the tasks quicker than the tractor mounted spray tank or the spray tank with a hose and fishmouth nozzle. Next purchase will be a Toro 3250D to replace our old one which has clocked up in excess of 4000 hours.

Do you think regional/country superintendents have a better work-life balance? Ask my wife and she will say 'what is balance?' It all comes down to

what you want to achieve and the resources that are at your disposal. During the summer the balance is far from where I would like it as staff numbers and the weather all contribute to the imbalance. The trick is to balance this out at different times of the year.

Best advice you have received about being a course superintendent/greenkeeper and who gave it to you? It wasn't direct advice, rather it was interpreting the meaning behind it. They are:

- When you make a statement be prepared to back it up with facts and proof (David Nickson);
- If you feel communication channels have broken down between the committee and yourself, take steps to correct it because it probably isn't your imagination and it won't fix itself (Michael Picken); and
- Finally this gem from a chairman of greens: If you want to receive an unbiased opinion about the playability and condition of the course that will leave you warm and fuzzy inside, ask that day's winner.

What do you think is the most challenging aspect of a superintendent's role today? The retention of staff is an issue as there are more career choices today. The continual need to do more for less and identifying ways this can be achieved.

What have you worked on personally in recent years to improve your skills as a superintendent? Undertaking business management studies with a human resource component to improve my people management skills.

Most pleasing/rewarding moment during your time as Shepparton GC superintendent? There are many, particularly when positive feedback is received when all the preparation is completed for an event. The one I have pleasure in recollecting was the membership support shown after a major storm ripped through the course one Sunday afternoon in 2011. We had 38 trees of various sizes uprooted and debris everywhere.

It was a public holiday on the Monday and the staff were in early to clean up. At 7am a member walking his dog asked if we needed help to which I replied 'That would be great!' By 8am 15 people had shown up and by 9am there were 30 people with trailers and chainsaws. The course was completely cleared by the Thursday, with members even taking annual leave from their jobs to help each day. There would have been at least 50 members who helped out over those four days. It was very humbling to see the pride that these members have in their club.

The highlight was seeing 14 chainsaws attack a fallen 50-foot gum tree and only having the stump left after 30 minutes. It was a 'reward for effort' moment as one member said, "The members appreciate the effort of you and the staff and this is their way of showing their support". 🌱

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JACOBSEN EXPANDS TURF PORTFOLIO WITH RELEASE OF GA600 AERATOR



Jacobsen has expanded its turf equipment range with the launch of the GA600 aerator

A GCSA Gold Partner Jacobsen introduced its all new GA600 aerator at this year's BIGGA Turf Management Exhibition in Harrogate, UK in January. The GA600 aerator is Jacobsen's first unit in a range of brand-new aeration equipment from Jacobsen with the unit set to be available in Australia around April/May.

The GA600 deep tine aerator can work up to 3.4km/h at a working depth of 30cm and a width of 1.8m. If used with the available AerStrike™ 4 Tine attachment system, productivity is further enhanced, allowing deep and conventional aeration in a single pass. Unique spacing on the AerStrike™ system creates tight 7.5cm patterns and eliminates the need for a turf guard.

The patented PerfectStrike™ tine arm motion ensures perfect entry and exit of tines, while the geometry of the crankshaft and the tine arms allow for vertical entry of the tines into the ground. Coupled with cluster tine heads keeping tines at a distance to reduce tearing of the turf, the GA600 provides turf managers and golf course superintendents with another option for renovating greens, fairways and sports fields.

UK-based Jacobsen product manager Lee Kristensen says the company is confident that the new aeration range will be well received by the industry: "We are delighted to have introduced the first unit in our new line of aeration equipment at BTME," says Kristensen. "A lot of research and development has gone into creating the GA600 and this is evident in the unique feature of being able to achieve deep and shallow tine aeration in one pass."

According to Kristensen, Jacobsen's new aeration line has been designed to improve hole quality, boost productivity and enhance aeration performance over undulated surfaces, with the short roller to tine distance ensuring excellent contour following.

HR800 ADDED TO WIDE-AREA FLEET

Also showcased at BTME and currently available in Australia is Jacobsen's HR800 wide-area rotary mower. The HR800 is the 16-foot wide big brother to the HR700 (14-foot) which the company unveiled in 2016 and had on its stand at last year's 32nd Australian Turfgrass Conference Trade Exhibition in Melbourne.

The HR series is built on a common narrow platform with the HR800 almost two feet narrower than its direct competitor. Powered by a 74.3hp Kubota engine, the HR800 sets a new efficiency and power-to-weight ratio standard. That efficiency, combined with a cutting capacity of more than 20 acres per hour (8.1 hectares), makes the HR800 the ideal mower for customers who want to spend less time, labour and fuel maintaining large areas of grass.

"The HR800 has a 30 per cent greater power-to-weight-ratio than its direct competitor, which allows the machine to utilise power incredibly efficiently," says Richard Comely, director of international product for Jacobsen. "By utilising a compact chassis design and high-strength, high-performance steel, there is simply less mass to move around, thus requiring less fuel, hydraulic capacity and power."

The HR800's Tilt Sensor Technology (TST)™ automatically monitors and adjusts mower decks to prevent rollovers when working on slopes. It also comes with an optional cab (pictured), which is designed to integrate into the traction unit.

New SureStrength™ decks constructed with high-strength, high-performance steel deliver greater durability in a lighter, more robust design. Q AMP variable rate steering provides optimal response to operator input to mow effortlessly around obstacles, while a new AdaptiCut™ system automatically adjusts mow speed to ensure consistent cut performance.

Individual hydraulic deck motors with self-lubricating integral bearings deliver cutting power to each blade and do not require daily maintenance. In addition, the HR800 boasts nearly half the daily grease points of its direct competitor.

For more information about the GA600 aerator or the HR800 wide-area rotary mower, contact your Jacobsen distributor or visit the dedicated pages at www.jacobsen.com.



Powered by a 74.3hp Kubota engine, Jacobsen's HR800 16-foot wide-area rotary mower sets a new efficiency and power-to-weight ratio standard

NEW NSW & ACT DISTRIBUTOR FOR REDEXIM RANGE

JT Turf P/L has taken over the distribution and support of the Redexim BV portfolio of products, including the Verti-Drain range, for the New South Wales and ACT region. JT Turf replaces CTM which remains as the Redexim distributor in Victoria and Queensland.

Redexim BV's international sales director Hessel Rozema says the company's long established relationship with JT Turf's John Woodham and his company in New Zealand made the search for a new distributor easier. He added that the company's relationship with CTM and Murray Swindles continues to be strong and this is represented by the continuing distribution agreements.

The new distribution agreement began as of 1 December 2016 and Redexim asks that its NSW and ACT customers please contact JT Turf on (02) 9601 3359 for any enquiries.

DAVID GOLF SPRAYS WITH SMITH



AGCSA Bronze Partner David Golf is reinvigorating the fine sprayer market with exclusive distributorship of Smith Performance Sprayers from the USA. Smith sprayers are designed specifically for a variety of needs with David Golf offering a range that includes a 1.5L specialty handheld mister, 7.5L compression sprayer and a 15L backpack option.

"Smith sprayers offer optimum performance," says Casey Johnson, David Golf's national sales and marketing manager. "The backpack unit is the most durable and comfortable sprayer on the market, effortlessly carrying up to 15L of liquid on

your back for hours at a time. Built to perform over one million spray cycles without maintenance, Smith backpacks include a contoured tank, 'never leak' pump and premium shoulder padding.

"Smith sprayers are built to withstand harsh environments and even harsher chemicals. Each product is fitted with an ambidextrous design, pressure relief valve and the stainless steel wands come supplied with multiple nozzles and Viton rubber seals to provide maximum durability."

For more information on the Smith Performance Sprayers range now available through David Golf, visit www.davidgolf.com.au.

TURF CULTURE LAUNCHES IMPALA AND MONARCH

Turf Culture has recently launched two new products into the Australian turf market – Impala fungicide and Monarch insecticide.

Impala (APVMA Approval No. 80146) is a unique combination of azoxystrobin (96g/L) and triticonazole (194g/L) and is the only dual systemic turf fungicide that contains the latter. Available in 1L and 5L pack sizes, Impala provides broad spectrum control of over 10 major turf diseases including anthracnose, brown patch, helminthosporium, take-all patch, fusarium, pythium, spring dead spot and dollar spot.

Monarch (APVMA Approval No.: 66187) is a liquid fipronil (125g/L) for residual control of Argentine stem weevil, funnel ant and mole crickets in recreational, domestic and commercial turf. It is also available in 1L and 5L pack sizes.

Visit www.turfculture.com.au to download and view the Monarch and Impala labels, SDS and technical sheets.

TRIMAX SOARS WITH PEGASUS S4

Trimax Mowing Systems has unveiled the latest model of its popular Pegasus rotary mower – the S4. For the past 15 years Trimax's Pegasus has established itself as a benchmark in wide-area mowing for parks, golf courses, sports fields and turf farms with the S4 model the end result of an intensive 12 months of R&D and user feedback.



Smith Performance Sprayers are now available in Australia exclusively through David Golf. Among the range is a 15L backpack sprayer (pictured far left) and a 7.5L compression sprayer (above)



Turf Culture has released Monarch insecticide and Impala fungicide

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Backed by a three year warranty, the Pegasus S4 is Trimax's second-largest trailed mower and is available in 4.9m and 6.1m widths

While the S4 doesn't look much different to its predecessors from the outside, inside there has been a significant improvement in engineering and performance. By talking to suppliers, exploring emerging technologies and testing out innovative materials, Trimax has managed to cut the number of grease points by 15 per cent which saves significant time and money. The S4 also comes equipped with Trimax SteadFAST Sealed spindles which need no maintenance.

Backed by a three year warranty, the S4 is Trimax's second-largest trailed mower and is available in 4.9m and 6.1m widths. One of the S4's designers Keith Mabey says the S4 provides the ultimate in reliability, strength and controllability for turf managers.

"The S4 is an absolute animal," says Mabey. "Despite its large cut width, the deck articulation and full-width anti-scalp rollers enable easy contour following. It manoeuvres around obstacles and easily manages a zero turn."

"We've been listening to customers all the time to learn about their likes and frustrations. Before incorporating any new features into a product line, we test them rigorously in real-life field trials. So by the time any new design gets to market it's already fully proven".

For more information on the Pegasus S4 and/or to book a demo, visit <http://trimaxmowers.com.au> or call 1800 874 629.

GREENCAST WEBSITE UPGRADE

AGCSA Gold Partner Syngenta's Greencast website – www.greencast.com.au – has been updated to a web platform that is mobile responsive.

Smartphones, and to a lesser extent tablets, have become central as a means of accessing the Internet in recent times. According to the 2015 statistics from IAB Australia on smartphone and tablet ownership, Internet surfing trends, as well as total time spent on devices, consumption and usage of mobile devices both in Australia and overseas continues to increase rapidly. As a result Syngenta has moved with the times to give customers a better user experience while at the same time giving the website a fresh new look.

"Consumers expect websites to be mobile-friendly so late last year greencast.com.au was migrated to a web platform that is mobile responsive," says Syngenta's campaign management lead for Lawn & Garden, Nicole Tyzack. "The aim is that this will give our customers a better experience. We are also excited as the site is easier to update so we will keep the content relevant and interesting. We are continuously improving the site from a functionality and content perspective so all feedback is welcome."

The new-look Greencast website



INDUSTRY APPOINTMENTS



DE LUCA NEW SYNGENTA L&G TECHNICAL MANAGER

Following the appointment of new business manager for turf and landscape Paul Jackson, AGCSA Gold Partner Syngenta announced the arrival of **Michael De Luca** (pictured) as technical manager for its Lawn & Garden division in late 2016. De Luca will be coordinating product development activities and field trial programmes as well as preparing the final project summaries for the Lawn & Garden portfolios.

De Luca obtained a Bachelor Applied Science majoring in agronomy at the University of Queensland. His most recent roles include trial manager and turfgrass agronomist at Sports Turf Research Institute and previously agronomist with the NZ Sports Turf Institute based in Queensland. Prior to this he has held a range technical positions on turf facilities in Australia and internationally.

"We're excited to have Mike as part of the team," says Syngenta's head of the Lawn & Garden division **Dugald Spenceley**. "Mike brings over 10 years' experience in agronomy, research and turfgrass management working across Australia and within the APAC region." Added De Luca: "I'm looking forward to being part of the Syngenta team. There are some really exciting, novel and unique product development opportunities in this new role."

ADVANCED SEED APPOINTS STEPHENS

AGCSA Bronze Partner Advanced Seed has increased its sales team in Victoria with the appointment of **Tim Stephens** as a sales representative. Stephens has had 10 years' experience in the turf industry with roles such as cricket wicket preparation and landscaping. He will be based in Melbourne and his role will be to manage Advanced Seed's seed range as well as provide technical back-up and advice with the commercial market. He can be contacted on 0488 013 060 or email tstephens@adseed.com.au.



CARMAN BOLSTERS NUTURF'S SA RANKS

AGCSA Gold Partner Nuturf Australia appointed **Shane Carman** as South Australian territory manager in late 2016. Carman (pictured) arrived at Nuturf with a wealth of experience in the genetic seed production, broad acre and turf market production supply and sales.

His previous role of business manager for one of South Australia's leading irrigation companies saw him review and analyse market trends, conceptualise sales and grow the business in various market sectors such as golf, local government, open space and nurseries. Carman can be contacted on 0408 607 592 or email Shane.Carman@nuturf.com.au



PARTNER RECOGNITION PROGRAMME

Support those organisations who support your association

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



JOHN DEERE



And if you're not covering important topics at all, well...

After feedback from relevant bodies, the NTEWG agreed that a minimum of 750 hours would be implemented nationally over three years as soon as authorised by the regulators to ensure that all graduates are skilled and schooled to a minimum level. Simone and I are also now working with these bodies to formulate a virtual 'benchmark graduate'.

We will be working with the industry, golf club and facility managers, career advisors and educators to ensure that we are delivering competent, skilled people who can meet expectations from you as superintendent or facility manager, to the club manager and Board. There will be some additional assessment criteria added to confirm this level of performance is achieved.

As we progress we plan to expand this system to 'benchmarking' different level jobs via the AGCSA with industry input at all levels to ensure that we are equipping people with all necessary skills to better progress their career from apprentice to leading hand to assistant superintendent to superintendent.

Historically, our industry has been one of the lower paid fields. Expert and anecdotal evidence shows the only way to increase your worth to employers is to be better at your job and have qualifications and experience to aspire to that are respected by your employers and other stakeholders. Your association is committed to progressing this process.

As part of this reform we are also hopeful that a turf management-specific undergraduate degree may be introduced in the short to medium term to allow people to hone their education and skills to a level that will hopefully match anything Europe and the USA can offer, and equip Australians to work in senior roles in many different parts of the industry anywhere in the world.

Remember too, that this education of young men and women is also your responsibility. When you can, teach them something new at work and, better yet, allow them to do it often. Plan your schedule so that apprentices can always attend school. Ask them to explain what they did at school – who knows you may even learn something yourself! Call their lecturers occasionally to see if you can do things 'on the job' to cover any gaps the TAFE may be forced to miss.

Most importantly, don't take any shortcuts with apprentices (or any of your staff for that matter). An apprenticeship is designed to set a young man or woman up with skills to see them employed through the rest of their life. We at least owe them that commitment. 🙏



PREMIUM PARTNERS

The AGCSA is indebted to the support of the following premium partner companies



JOHN DEERE



The AGCSA encourages all members to support these companies who support your association





PHOTOS: BRETT ROBINSON

The GCSAQ 'Mow Off' day saw Toro, Jacobsen, John Deere and Kubota/Baroness display and demo a range of their turf maintenance machinery

The GCSAQ is always looking at innovative ways of running its association days and in late November we held the inaugural 'Mow-off' at Indooroopilly Golf Club. The 'Mow-off' saw four major turf machinery manufacturers – Toro, Jacobsen, John Deere and Kubota/Baroness – gather at the Brisbane-based club to display a range of machinery for GCSAQ members to inspect and demo.

Each manufacturer had various turf maintenance equipment on display, ranging from rough cutters, triplex greens and fairway mowers, fairway units, walk-behind greens mowers and turf utility vehicles. Attendees were split into four groups with around an hour spent with each manufacturer before moving to the next. The first 20 minutes saw representatives from each company talk about the various machines they had on display and their features, before attendees were encouraged to fire them up and try them out. Among the machinery on display included:

- **Toro:** Reelmaster 5010H, Reelmaster 3575D triplex fairway mower, Groundsmaster 4500-D rotary rough cutter, Greensmaster 3420 TriFlex hybrid, Greensmaster Flex 2100 walk-behind greens mower and Toro Workman GTX (two and four seater).



- **Jacobsen:** Eclipse 322 triplex and LF570 4WD fairway mower. Distributor KC Farm Equipment also demoed the Sisis Litamina 1200 sweeper and Sisis Veemo MK2 scarifier.
- **John Deere:** 9009a rough cutter, 7700A PrecisionCut fairway unit, 8000A E-Cut Hybrid and 2500B PrecisionCut triplex greens mower.
- **Kubota/Baroness:** GM2800B rough mower, LM2400 fairway unit, LM315GC triplex greens mower and walk-behind greens mower.

GCSAQ members from as far afield as the Sunshine Coast, Gold Coast and the Northern Rivers region of NSW converged on Indooroopilly for the day with breakfast provided beforehand by John Deere and lunch afterwards by Toro. While the turnout was modest, the day proved extremely valuable for those who attended and the committee hopes that the event will grow in the years to come.





It was a fantastic way for turf managers to get together in one spot and get hands on with some of the latest machinery in the market. The GCSAQ is really grateful that Toro, Jacobsen, John Deere and Kubota/Baroness got behind the concept and we thank them for their support and making the effort to attend. We are also indebted to host superintendent **Charlie Giffard** for enabling us to use his course to accommodate the day.

Here is some feedback from superintendents who attended the 'Mow-off'.

- **Col Caulfield (Caboolture Golf Club):** "For me best aspect was having the major suppliers all in the one place, along with the newcomers, that enabled all turf machinery budgets to be catered for. It was also great to be able to talk to other superintendents there that utilise different brands to provide some perspective which will help make any future decisions easier. It was also interesting to learn of the new environmental laws coming in regarding pollution output and downsizing of machinery horsepower to meet these new standards."
- **Phil Soegaard (Lakelands Golf Club):** "What a great day! To have the opportunity to drive/operate the latest machinery on the same day and compare was invaluable. This is a 'must attend' day for superintendents to bring along their managers, owners or committees to show the advancement in technology in our industry. Improved productivity and higher quality surfaces could get supers across the line when looking for that next purchase. A big thanks to the four suppliers and Charlie Giffard for their efforts on this successful day."
- **Shaun Cross (Byron Bay Golf Club):** "I really liked the concept of being able to try each supplier's piece of equipment on their dedicated turf surface as you moved from one station to the next. It gave you that instant comparison between the equipment from an operational point of view. Looking over and inspecting equipment at a trade show event is great, but to be able to operate all of the equipment onsite gives you a real hands-on feel for what may be suitable for your site. I took it as a preview to create a shortlist of equipment that could be arranged for demonstrating on your site to meet specific requirements."



Machinery ranged from greens, fairway and rough units to turf utility vehicles and renovation equipment

Coming up, the Queensland golf industry will gather again on the Gold Coast on 21 March for the Queensland Golf Industry Awards. The GCSAQ will be heavily involved handing out five awards – the Industry Recognition Award, Superintendent Achievement Award, Environmental Award, Assistant Superintendent Recognition Award and GCSAQ Apprentice of the Year. We are also hoping to host a turf trial plots inspection day with Matt Roche soon with more details forthcoming once a date has been finalised.

BEN TILLEY
PRESIDENT, GCSAQ





Around 90 members of the WA turf industry gathered in late November for the annual WA Turf Industry Awards to celebrate the achievements of the 2016 graduating turf students



Adrian Pitsikas (left) with 2016 Sports Turf Industry Person of the Year recipient Viny Kapur



Clint Betts (Baileys Fertilisers, left) with Jason Kirkwood who was named recipient of the CH Bailey & Sons Perpetual Shield for Best WA Sports Turf Graduate for 2016

Hartfield Country Club's function room was alive on the last Tuesday night of November 2016 when the Western Australian turf community came together to celebrate the achievements of the 2016 graduating turf students for the annual WA Turf Industry Awards night. This annual event, now in its 34th year, was proudly hosted by the Sports Turf Association (WA) in conjunction with the Golf Course Superintendents Association of WA and the Turf Growers Associations WA.

Close to 90 people were in attendance enjoying good food and good company as once again **Verity James**, acting as MC for the evening, warmed everyone's hearts with her welcoming charm and down to earth humour. Even with Verity's help it is without doubt the event would not have been such a success without the steadfast support and generosity of the many sponsoring businesses who donated their time and money to make it such a success.

The sponsors for the night included Beacon Equipment, Globe Australia, Greenacres Turf Group, MowMaster, Nuturf, Pro Core Turf Renovation, State Wide Turf Services, T-Quip, Turfcare WA, Village Green Kikuyu and Western Irrigation. The three major award sponsors were Baileys Fertilisers, Bayer and Lawn Doctor.

Joining us again for the evening was retired turf lecturer **Jim Clements** and his wife Joan. Jim was the inaugural winner of the CH Baileys Perpetual Shield award in 1982, who then went on to share the burden with the late Lin Hambleton in educating Perth's current majority of turf managers during the 1980s and 1990s. Jim proudly brought along his prized engraved pewter mug to toast a drink along with this year's winners.

Special guest speaker this year was **Vinaya (Viny) Kapur**, turf technician and grounds manager for the Botanical Gardens and Parks Authority (Kings Park). Viny spoke about how he came to work in the turf industry almost by chance at the age of 30. Coming from a hospitality background in the UK,

Viny migrated to Australia as a young man, working a range of jobs in hospitality and as a courier driver. Viny comically told the story how when starting out in the courier business as a newcomer, navigating the Perth metropolitan area was quite a challenge at times. However, he says it wasn't long before he was soon looking for something different.

Armed with some simple tractor usage from his younger years in the UK and no real experience in the field of grounds maintenance, he applied for and successfully secured a job with the City of Melville as a gang mower on their turf management team. He started at the bottom of the ladder and through pure persistence and gumption was able to join the council's maintenance team at Point Walter Golf Course.

It was there that he quickly developed a passion for turf management and doggedly questioned his peers and colleagues while undertaking turf studies at TAFE. Viny still carries the same passion and desire for quality turf surfaces today as he had when he worked his way up from this humble beginning in turf to become the well-respected turf manager who now looks after WA's premier parkland and public open space.

Viny has been at Kings Park for the past 15 years where he is responsible for the management and irrigation of approximately 33 hectares of turf areas spread out atop Mt Eliza's landscaped parkland. Set aside for public purposes in 1831 and originally named Perth Park as it overlooks Perth's CBD and the Swan River, it is an enviable workplace.

Viny leads five full-time staff and his team manages the clear majority of work in-house, with only about 10 per cent being outsourced to contractors. Notably, 6.5 million people visit Kings Park every year! This includes a constant flow of human traffic almost daily, concentrating each weekend and a calendar filled with public and private concerts and other entertainment events which host thousands of patrons each time. Also, as one of the most highly promoted sites for tourists visiting the city of Perth, there is always some sort of infrastructure redevelopment occurring throughout the park, which creates plenty of ongoing challenges for Viny and his team. Throughout these challenges, the kikuyu turf surfaces are applauded as some of the best in the state.

It was no surprise, therefore, to those who knew Viny that he was asked to attend this awards evening and provide an entertaining and informative chronology of his time in the turf industry and pass on a message to the new generation of graduating turf managers. However, it came as a complete surprise to Viny near the end of the evening when he was named the recipient of the WA Sports Turf Industry Person of the Year for 2016, which was presented to him by **Adrian Pitsakis**.

Congratulations Viny, you are appreciated for your mentoring of others in the industry and for working so hard to provide WA with an amazing public open space facility that is recognised among the top 10 best parks in the world.

The Turf Growers Association WA is particularly proud of the Kirkwood brothers from West Coast Turf. While elder son **Darren Kirkwood** is the association's current chairperson and managing director of the family turf farm at West Coast, his younger brother **Jason Kirkwood** was awarded the CH Bailey & Sons Perpetual Shield for Best WA Sports Turf Graduate, sponsored by Baileys Fertilisers. Jason achieved his certification through attending night classes after working long hours during the day at the turf farm. At home with a young family, Jason is a busy young man with a bright future in turf.

The other student award recipients on the night were:

Best Student in Certificate of Trade Studies in Turf Management (sponsored by Bayer)

- **Recipient:** Mark Dickinson (Mosman Park/Cottesloe Golf Club)
- **Presented by:** Danny Hambleton (Globe Australia)

Lecturer's Choice Award (sponsored by Lawn Doctor)

- **Recipient:** Ben Suckling (Capel Golf Club)
- **Presented by:** Terry Sellick (Lawn Doctor)

Murray James Memorial Trophy (sponsored by the STA WA)

- **Recipient:** Matthew Smith (Swan Bowling and Recreation Club)
- **Presented by:** Hugh Gardner (STA WA)

Concluding the night on a sombre yet respectful note, **John Forrest** from South Metropolitan TAFE took a few moments to speak on **Lin Hambleton** and his legacy towards the establishment and development of the turf management programme at TAFE colleges in Perth during the 1970s, 1980s and 1990s.



Sam Franco (left) with graduating 2016 night class students

Lin passed away on 22 June 2016, just four days short of his 74th birthday. During his career and into retirement Lin was a regular attendee and a passionate advocate of the awards night and its promotion of future graduates within the WA Turf Industry. His presence this year was sorely missed.

TONY GUY
PRESIDENT, STA WA



Bottom left: Danny Hambleton (Globe Australia, left) with Mark Dickinson, recipient of the Best Student in Certificate of Trade Studies in Turf Management Award

Middle: Terry Sellick (Lawn Doctor, left) with Lecturer's Choice Award recipient Ben Suckling

Below: Hugh Gardner (STA WA, left) with Swan Bowling and Recreation Club's Matthew Smith who won the Murray James Memorial Award



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NZGCSA president Steve Hodson

Hello to everyone on both sides of 'The Ditch' and all the best for 2017. New Zealand's weather has been extreme in recent times with some areas absolutely hanging out for rain while other areas have had more than their fair share. For some, summer has yet to arrive and for others it has never left from last season or the one before! And just to confuse the issue further, snow fell on the ranges in both the North and South Islands in mid-January!

With those extremes come the challenges of greenkeeping and dealing with the conditions that prevail in your own area. This is where the value of our great industry training comes into its own and also being able to ring neighbouring superintendents to share advice or simply looking for an ear to share a problem with. We are a relatively small industry and as such have to look after one self and also each other.

Since our last report in ATM (Volume 18.5 – September-October 2016), there has been a bit of change within the NZGCSA executive. In late October we had to sadly accept the resignation of **Martin Burger** (superintendent Whitford Park Golf Club) after just a few months as NZGCSA president. Sadly Marty left the industry to pursue other interests that came about a few years earlier than expected. We wish Marty well for the future and thank him for his time and effort spent on the NZGCSA board over the last few years.

I was duly elevated to the role of NZGCSA president having spent the past five years on the Board. By way of a brief introduction, I have been in this wonderful industry for the past 40 years and am currently the course superintendent at Westown Golf Club in New Plymouth (west coast of New Zealand's North Island). I am looking forward to working with you all over the next few years and wish to thank everyone for their support since taking over the reins.

Elsewhere, congratulations goes to **Mark Mills** of Hastings Golf Club who before Christmas took out the 2016 NZGCSA Graduate of the Year Award

sponsored by Power Turf NZ. Mark competed in the day-long competition alongside **George Flynn** (Pukekohe Golf Club) and **Matthew McClintock** (Waimairi Beach Golf Club). All would have been worthy recipients, but it was Mark that came through at the finish.

For his efforts Mark has embarked on the trip of a lifetime to spend two weeks in the US where he will attend the GIS in Orlando with staff from Power Turf NZ as well as visit the Jacobsen factory. Winning the award is a fantastic achievement and will go a long way to setting up what will hopefully be a long and rewarding career for Mark in this industry. Credit must also go to **Gordon Trembath**, superintendent at Hastings Golf Club and a man well respected within the industry, for his guidance through Mark's apprenticeship. The NZGCSA also sincerely thanks long-term partners Power Turf NZ and Jacobsen for their continued support of this important award.

A reminder to all of you of the Fine Turf Seminar to be held in the deep south of Dunedin in August administered by the Southern Turf Managers Association, which will be celebrating its 50th anniversary. These two-day format seminars have proven to be highly successful over past years and this one will be no different. It is a great opportunity to enhance one's knowledge and also to rub shoulders with your peers for a couple of days.

The Fine Turf Seminar kicks off on Sunday 20 August with a golf tournament at the Otago Golf Club, the oldest golf club in the Southern Hemisphere, followed by dinner. The following two days will see the seminar hosted at Forsyth Barr Stadium. Keep an eye on the NZGCSA website – www.nzgcsa.org.nz – for more details.

Finally, the NZGCSA, on behalf of all members, extends its thoughts and best wishes to industry stalwart and life member of the NZGCSA and Auckland GCSA, **Richard Warren**, who is currently dealing with some health challenges.

STEVE HODSON
PRESIDENT, NZGCSA

ON THE MOVE

ANDREW ABBOTT: Departed as superintendent of Murray Downs Golf & Country Club, NSW for a position with the local council.

PATRICK CASEY: From superintendent Adelaide Shores, SA to superintendent Kalgoorlie Golf Club, WA.

ROWAN DAYMOND: From senior assistant superintendent The Grange Golf Club, SA to superintendent Murray Downs Golf & Country Club, NSW.

ALEX GORRIE: Appointed assistant superintendent Neangar Park Golf Club, Vic.

MAT GUY: Appointed assistant superintendent at Horizon's Golf Resort, NSW. Arrives at the club after spending six years at Cabot Cliffs in Canada.



NICK MARINO: From assistant superintendent Club Mandalay, Vic to superintendent Royal Park Golf Club, Vic.

PAUL ROBINSON: From superintendent Kyneton Golf Club, Vic after 13 years to superintendent Bacchus Marsh Golf Club, Vic.

GARY SMITH: From assistant superintendent

to superintendent, The Commercial Club, Albury, NSW.

GAVIN STONE: Appointed assistant superintendent Ocean Dunes Golf Course, King Island, Tas.

ANTHONY TOOGOOD: From superintendent The Commercial Club Albury, NSW after 14 years. Has returned to Tasmania for family reasons and has gained a position working on the crew at Barnbogle Dunes.

BRAD WINNELL: From Brighton Grammar, Vic to assistant superintendent Latrobe Golf Club, Vic.

2017 unfortunately got off to the worst possible start for the Tasmanian turf management community following the sad loss of Mowbray Golf Club course superintendent **Shane Knott**. 'Kirby', as he was affectionately known by everyone within the industry and at the club (although it still remains a mystery as to how he got that nickname), fell ill inside the maintenance facility shortly after lunchtime on Monday 16 January. He was due to turn 58 on 17 February 2017.

Kirby was a long-time TGCSA member, with Mowbray Golf Club in Launceston forming an integral part of his life. He started his turf management career at the club in 1979 and spent 14.5 years there before moving up the Tamar River to take on the role of course superintendent at Exeter Golf Club. From there he joined long-time TGCSA sponsor Pellows Saws and Mowers for a brief period before heading back into greenkeeping at Casino. In late 2007 he re-joined Mowbray Golf Club where he had been course superintendent up until his untimely passing.

Kirby's memorial service was held on 25 January with a large contingent of industry friends and colleagues in attendance, showing just how well respected he was within the golf and turf



management communities. As many fellow turfies commented in the days and weeks following Kirby's death, he will long be remembered as a real gentleman and one of the industry's great characters. He would always pop in for a chat to catch up and if you needed help he would be the first to put up his hand and drop everything to assist. He was a regular attendee at TGCSA field days and conferences and over the years had held various posts on the TGCSA committee.

In Launceston's Examiner newspaper, the Mowbray Golf Club paid tribute to Kirby: "The Staff, Committee and Members of the Mowbray Golf Club were shocked and saddened to learn of Shane's sudden death. 'Kirby' being the club's course superintendent for nine years will be greatly missed by all who have met and dealt with him over the journey. A long-term member, former director and twice employed by the club, Kirby has displayed immeasurable loyalty to Mowbray for which the club will be forever grateful. A true friend to all and sadly taken too soon." RIP Kirby, from all your mates at the TGCSA.

MARK JOHNSON
PRESIDENT, TGCSA

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PHOTOS COURTESY OF ROD TATT, YARRA YARRA GC

Yarra Yarra Golf Club co-hosted the 2017 Australian Amateur Championships in mid-January with Peninsula-Kingswood Country Golf Club. Pictured above is Yarra Yarra's the par three 15th and top right the 11th

With 2016 behind us and above average rainfall across most of the state, it has been refreshing to encounter some warm weather recently.

Back in December the VGCSA held its educational awards with **Joel Manson** from Anglesea Golf Club winning the VGCSA Apprentice of the Year, while over at 13th Beach Golf Links **David Johnston** was awarded the 2nd Year Diploma Scholarship for 2017. Congratulations to both gentlemen and we hope to see them rise through the turf management ranks in the years to come.

In the recent Summer edition of the VGCSA newsletter, we featured the 2015/16 trial work report on 'Golf green soil microbiology and biological stimulants'. Two further trials will be conducted this year with the help of Turfgrass Consulting and Research's **John Neylan**, reiterating our commitment to relevant turf management issues in Victoria. A copy of the report can be accessed from the VGCSA website www.vgcsa.com.au.

Events for 2017 are all organised with the first meeting on Monday 6 March to be our popular walk and talk dual club education meeting at Commonwealth and Woodlands golf clubs. I'm sure both host superintendents **Mark Prosser** (Commonwealth) and **John Mann** (Woodlands) will have interesting works and topics to be discussed on the walk. A meeting flyer will be distributed in early February with all the relevant details.

Congratulations to **Rod Tatt** (Yarra Yarra Golf Club) and **Glenn Stuart** (Peninsula-Kingswood Country Golf Club) for the successful hosting of the 2017 Australian Amateur Championships in mid-January. Both Yarra Yarra and Peninsula's Kingswood course were in superb condition for the event which continues to attract some of the best amateur talent from around the world. It is the first time the championship was held at Yarra Yarra while the Kingswood course played co-host for the second consecutive year.

Players from 19 countries – Australia, Canada, England, Finland, France, Germany, Indonesia, Ireland, Italy, Japan, Malaysia, New Zealand, Saudi Arabia, Scotland, Singapore, South Korea, Taiwan, USA and Wales – descended on both courses with a total of 120 international players making the journey to the Melbourne sandbelt. Among them were the reigning title-holders of the US boys' amateur, US girls' amateur, US women's amateur, British Amateur and European Amateur championships. The stroke play component of the championship was held across both courses, with the top 64 men and 32 women advancing to the match play phase from Thursday to Sunday at Yarra Yarra.

Rod and his 17-strong crew had Yarra Yarra's *Poa annua*/bentgrass greens clipped at 2.5mm and running at 11 feet as stipulated by Golf Australia. The greens received a single cut in the morning and a single brush cut or groom in the evenings. In addition to tremendous support from the club, committee and general manager **Peter Vlahandreas**, Rod was also very grateful for the support received from fellow superintendents **Ian Todd** (Victoria Golf Club) and **Hayden Mead** (Kingston Heath Golf Club) who sent staff across to assist with preparations each morning.

Across at Kingswood, **Marcus Harber** (Dingley site course manager) and assistant **Rhys Whitting** marshalled the troops to present the course in superb condition for its Tuesday and Wednesday rounds. Marcus's normal crew of eight swelled to 22 with staff coming across from the club's Frankston site (Peninsula courses). Kingswood's greens were hand cut at 3mm and rolled each day in the lead up to the qualifying rounds and during the two days of strokeplay the greens were given just a single cut to match the 11 foot speeds across at Yarra Yarra.

Both courses received excellent feedback from players and tournament organisers. A huge amount of lead-in work was undertaken at both courses to get them tournament ready and the end result again showed the passion and dedication each crew had.

Finally, the association now has a new postal address which was distributed to members via email. If anyone has not received these new details, please contact Mary Napier by email adminvgcsa@bigpond.com.

**MAT POULTNEY
PRESIDENT, VGCSA**

The STA Victoria committee wish all in the industry good health and happiness for 2017.

The biggest project we have embarked on recently is to update the existing association constitution to bring it into line with modern standards and current regulations. The revised 'Articles of Association' will be available for review in the first quarter of 2017 and we believe you will agree it will open up opportunities for STA Victoria moving forward. All financials and current risks have been independently audited and given approval.

2017 will be the first time in many years we have all activities planned well in advance for members and sponsors. A simple idea, however as you will be aware a lot of work goes into this by the team to ensure we can provide quality events with informative presentations. A sneak peek of the calendar looks like this:

- **5 April 2017:** Safety & Education Forum;
- **19 July 2017:** AGM and Sports Turf Seminar at AAMI Park;
- **Aug/Sept 2017 (TBC):** Practical Field Day in conjunction with Cricket Victoria;
- **1 November 2017:** Irrigation for Sports Fields Forum; and
- **Late November (TBC):** Toro Regional Sports Field & Grounds Forum.

Further to this, the committee has been working with other industry partners to ensure we offer a wide range of topics and opportunities for all STA Victoria members. As always, we are happy to receive any feedback so please get in touch if required. Equally, if you have a great topic you would like presented at any of the above events in 2017, send us an email and we can work together to firm up the programmes.

We have announced an offer to partially fund a student sponsorship designed to encourage students to move from Certificate III in Sports Turf Management (apprenticeship) into Diploma studies. The sponsorship will comprise 50 per cent of the total fee of the course up to \$3000. Full details and

an application form can be found on the STA Victoria website www.vicsportsturf.asn.au or contact **Jan Fenton** vic@sportsturf.asn.au

After consultation with its membership, the STA Victoria is also looking for potential research service providers to undertake a research project titled – 'Compare possible hours of use for different sports field construction types and maintenance inputs'. This project will start 1 March 2017 and will run for 18 months to allow for seasonality. Tenders were due in by 25 January 2017 and a full brief of the project is available on the STA Victoria website. We look forward to bringing you milestone reports on the findings.

GARRY WOOLARD
COMMITTEE, STA VIC

STA ACT REGION

Our nation's capital has, like other locations around Australia, been smashed with hot weather over the summer. As of the middle of January there had been 26 days out of 47 over 30 degrees, with Friday 13 January the hottest (it reached 40 degrees at Federal Golf Club). Rain too has been absent from Canberra with most courses and sporting facilities recording under 60mm for December and only 5mm up to the middle of January.

As most will know, Royal Canberra Golf Club appointed a new course superintendent back in July last year. **Ben Grylewicz** has settled into his new role quite nicely and is enjoying the Canberra lifestyle as well as the relentless weather extremes that the capital is famous for.

Elsewhere, some fantastic news for Canberra Institute of Technology (CIT) after it was successful in securing a Federal

grant to help fund the 2017 Diploma in Sports Turf Management group's excursion to New Zealand. This year's trip will take in Wellington and Christchurch and will be a fantastic opportunity for all involved.

After two very successful days at Federal Golf Club, the STA ACT Golf Day will move across to Yowani Country Club on Monday 8 May. We thank Yowani superintendent **Justin Haslam** and assistant **Pete Dunn** for their assistance in helping us secure the venue. Sponsorship packages are available. Other events slated for 2017 include the annual STA ACT Seminar which is set again for 26 July at Vikings Town Centre Club, Tuggeranong. All are welcome to join us in our fine capital for these always memorable events.

SCOTT FOGG
PRESIDENT, STA ACT



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TURF AUSTRALIA

Right: Canberra-based CanTurf will host the 2017 NxGen Forum

Lock in Monday 5 to Wednesday 7 June 2017 for the Turf Australia Conference & Field Day to be held at The Sebel Kirkton Park in the Hunter Valley, NSW. It has been two years since the turf production industry has held a national conference and field day so we are looking forward to a strong turnout.

Presentations on precision farming and turf nutrition along with possibly the largest turf machinery field day ever held in Australia are being planned. Master of Ceremonies will be 'Tony the Turfman' and presenters include **John Keleher** (Australian Lawn Concepts) and **Dr Mick Battam** (AgEnviro Solutions).

The field day will be held at nearby **Buchanan Turf** in Bolwarra, NSW on Wednesday 7 June. Buchanan Turf is the home of Sir Walter Buffalo which was discovered growing in one of Buchanan's paddocks. The Sebel Kirkton Park is about one hour's drive from Newcastle Airport which has regular flights to and from major cities on the east coast of Australia. Alternatively, Sydney Airport is two-and-a-half hours' drive away.

If you have any machinery, products, information or services that could benefit turf growers, please contact Rachel Layt at Turf Australia on (02) 4588 5735 or email admin@turfaustralia.com.au for exhibitor and/or sponsorship information. The Hunter Valley has many attractions, some of which will be incorporated into the programme. We look forward to seeing you there!

NXGEN FORUM – CANBERRA 2017

CanTurf, ACT's innovative and progressive turf farm, will host the 2017 NxGen Forum from 30 April – 2 May 2017. Canberra is one of the few places in Australia that grows both cool- and warm-season grass types and the different production methods will be explored. In addition, Canberra has many local attractions and high calibre speakers that will ensure an enjoyable and informative forum.

If you are between 18 and 40 years old, please consider coming to the 6th annual Turf Australia NxGen Forum. These forums are widely recognised and highly regarded and the first one to be held in Canberra is not to be missed!

AUSTRALIAN STANDARD FOR USING TURF TO CONTROL EROSION

After considerable research and a lot of turf levy funded and in-kind effort, an Australian Standard for 'The use and installation of turf as an erosion, nutrient and sediment control measure' has been drafted and public comments were due to close on 6 February 2017.

This Australian Standard is an exciting opportunity that can develop new markets for turf in Australia. To be known as 'AS 5181:201X', the draft



Australian Standard contains information on:

- Planning principles;
- Turf selection;
- Ordering turf supplies and site preparation;
- Installation of turf;
- Monitoring performance and maintenance of turf; and
- Contractual sign-offs.

The draft standard also contains several appendices, including Appendix C which is a detailed 'Turf Selection Guide'. This guide provides a matrix of performance attributes of various turf species in relation to several different climate zones. This information, once finalised following the period of public comment, could be used for a variety of purposes as it indicates how favourable or tolerant particular turf species are in relation to 34 different characteristics.

The turf species covered in the Turf Selection Guide are: Blue couch, broadleaf carpet grass, buffalo grass, green couch, kikuyu, *zoysia japonica*, *zoysia matrella* and seashore paspalum along with the cool-season species of ryegrass, Kentucky bluegrass and tall fescue.

The characteristics for which each species is assessed against include soil type, soil pH, soil fertility, soil drainage, soil salinity, slope, temperature, rainfall, extreme cold, light level, special site conditions, plant growth, traffic and wear tolerance and management.

The objective of this Australian Standard is to provide land owners, developers, project personnel and contractors with requirements on how to select, install and maintain turf in order to prevent or control erosion, nutrient loss and sedimentation. This will minimise the adverse impacts of development works and change in land use on the surrounding and downstream environments.

Comments were invited on the technical content, wording and general arrangement of the draft standard. While these comments have now closed, a copy of the draft standard can still be found via the Standards Australia website – www.standards.org.au – or the Turf Australia website – www.turfaustralia.com.au.

**RICHARD STEPHENS
BUSINESS & INDUSTRY DEVELOPMENT
MANAGER, TURF AUSTRALIA**

Redlands Research Station in Queensland hosted a large scale erosion control site where the effectiveness of various erosion and sediment control options were assessed and compared. Turf was proven to be the most effective method to control erosion



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TORO

Players, officials, spectators and commentators alike all marvelled at Kingston Heath's presentation during the 2016 ISPS Handa World Cup of Golf last November. Pictured is the 11th with the 12th in the background

Kingston Heath Golf Club again proved it is one of the most unique and most loved courses in world golf when it hosted the 2016 ISPS Handa World Cup of Golf last November. However, as ATM Brett Robinson discovers, getting the course up for its time on the international stage presented more than a few challenges for superintendent Hayden Mead.

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- Morebank
- Moss Vale
- Muirfield
- Ocean Grove
- Ocean Shores
- Pacific Dunes
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- Richmond
- Ringwood
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- Settlers Run
- Shell Cove
- Shell Harbour
- Shoal Bay
- Shoalhaven Heads
- The Goowa
- Tirhatuan Park
- Trafalgar
- Tuggerah Lakes
- Virginia
- Wyong

New Zealand

- Akarana
- Auckland
- Cape Kidnappers
- Carrington
- Clarke's Beach
- Formosa
- Grange
- Hamilton
- Howick
- Huapai
- Jacks Point
- Kaitaia
- Karori
- Kauri Cliffs
- La Pointe
- Mangawhai
- Matarangi
- Muriwai
- Napier
- New Plymouth
- Omaha Beach
- Omokoroa
- Onewai
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DELIVERING PUMPING SOLUTIONS

Hayden Mead is no stranger when it comes to tournament preparations and overcoming the many challenges that can present themselves. Over his 12 years as a course superintendent (coming up to five years this May at Kingston Heath Golf Club and previously seven at Spring Valley Golf Club), Mead has racked up four Victorian Opens, the 2012 Talisker Masters as well as the 2013 International Qualifying Final for The Open Championship.

Almost invariably the challenges that have prevailed in each have come about because of Melbourne's fickle weather, so it was therefore no surprise that with the biggest tournament of his career about to land on his doorstep last November, Mead was dealt another testing hand.

Up until the winter of 2016, everything was well on track for the impending arrival of the 2016 ISPS Handa World Cup of Golf. After a long battle, Mead was finally getting somewhere with the control of *Poa annua* in the A1 bentgrass greens. The new clubhouse putting green had bedded in nicely after being opened in February, while out on the course a subtle change to the iconic par three 15th green and addition of a new fairway bunker between holes 1 and 6 had been successfully completed.

Winter, however, would be wet, very wet and combined with plenty of traffic out on the course meant there were lots of thin areas on the Santa Ana couchgrass fairways. With the tournament a few months off, however, Mead wasn't too concerned

and left those areas alone in the knowledge that they would cover over once the warmer weather kicked in. Or so he thought.

In addition to those thin areas, like many of his fellow superintendents Mead was also pulling his hair out trying to control *Poa annua* on the fairways. Despite trying a number of different tacts – different products and applications at different times – nothing was overly effective, so at the start of October Mead made the call to drop everything and got his crew to spot spray the fairways with knapsacks. All up some 180 man hours were spent on that exercise over a two week period.

As the saying goes 'bad things come in threes' and for Mead the kicker was to come in the form of one of Melbourne's coolest and wettest springs for a long time. The rule of thumb in Melbourne is that things generally start to turn around AFL Grand Final time (last weekend of September). In the lead-up to then there's the occasional day over 30, while in October you can normally guarantee a number of days well into the 30s to heat the soil up and get the warm-season grasses firing.

Not so the spring of 2016. According to the BOM station at Moorabbin Airport just a kilometre away from the course, only four days in September registered over 20 degrees, with the month's highest daily maximum just 22.9. That cool spell continued throughout October where there were only 11 days over 20 and a highest maximum daily of 26.6. In fact it would only be seven days out from the World Cup



It proved to be a challenging build-up to the World Cup of Golf for Kingston Heath course superintendent Hayden Mead

