



As I drove towards The Carrick in glorious winter sunshine, little did I know I would soon experience the classic four seasons in one day – which is far from unusual in the West of Scotland.

The rainfall figures could be described as intimidating with last year's 1800mm proving a relative respite after 2200mm in 2011. So it's no surprise that the team at The Carrick (named after Doug Carrick, the Canadian architect who designed the course) are constantly challenged by drainage issues.

Jim Brown kick started a programme of improvements at The Carrick through his role as Group Golf Courses Manager for De Vere Hotels, before becoming Golf Course Manager at the heathland course. The first nine holes are played on open Lowlands while the second nine head into the Highlands close to the famous Loch before returning to the clubhouse.

Jim's regular meetings with Head Greenkeeper Paul McClearn identified various serious issues on the course – namely drainage and turf quality on the greens, regularly flooded fairways and collapsing bunkers. As we toured the course, we are in turns basking in glorious sunshine then hit with wind and rain – which seems to sum up the local climate perfectly.

Yorkshireman Jim says: "Obviously we can't control the rainfall but we can control how the golf course reacts and recovers to that rainfall. I began by inviting De Vere Hotels' CEO (and avid golfer) here to show him the problem areas, and convince him that we needed investment. It was pouring down at the time which was perfect to illustrate the issues! We needed various pieces of machinery such as a sand bander, a large enough tractor to power that sand bander and a big enough top dresser to start to top dress the fairways to improve the soil properties.

"We also needed significant annual investment to purchase sand – we applied 220 tons to the greens last year and we were looking to secure another 800 tons to apply to problem fairways and approaches. If he agreed it meant we wouldn't have to rely on contractors and could do the work when we wanted during conditions suitable for success – we were delighted when he accepted and supported our proposals."

Jim is crystal clear about the main challenge he faced on his arrival - the USGA greens with an excessive and increasing thatch

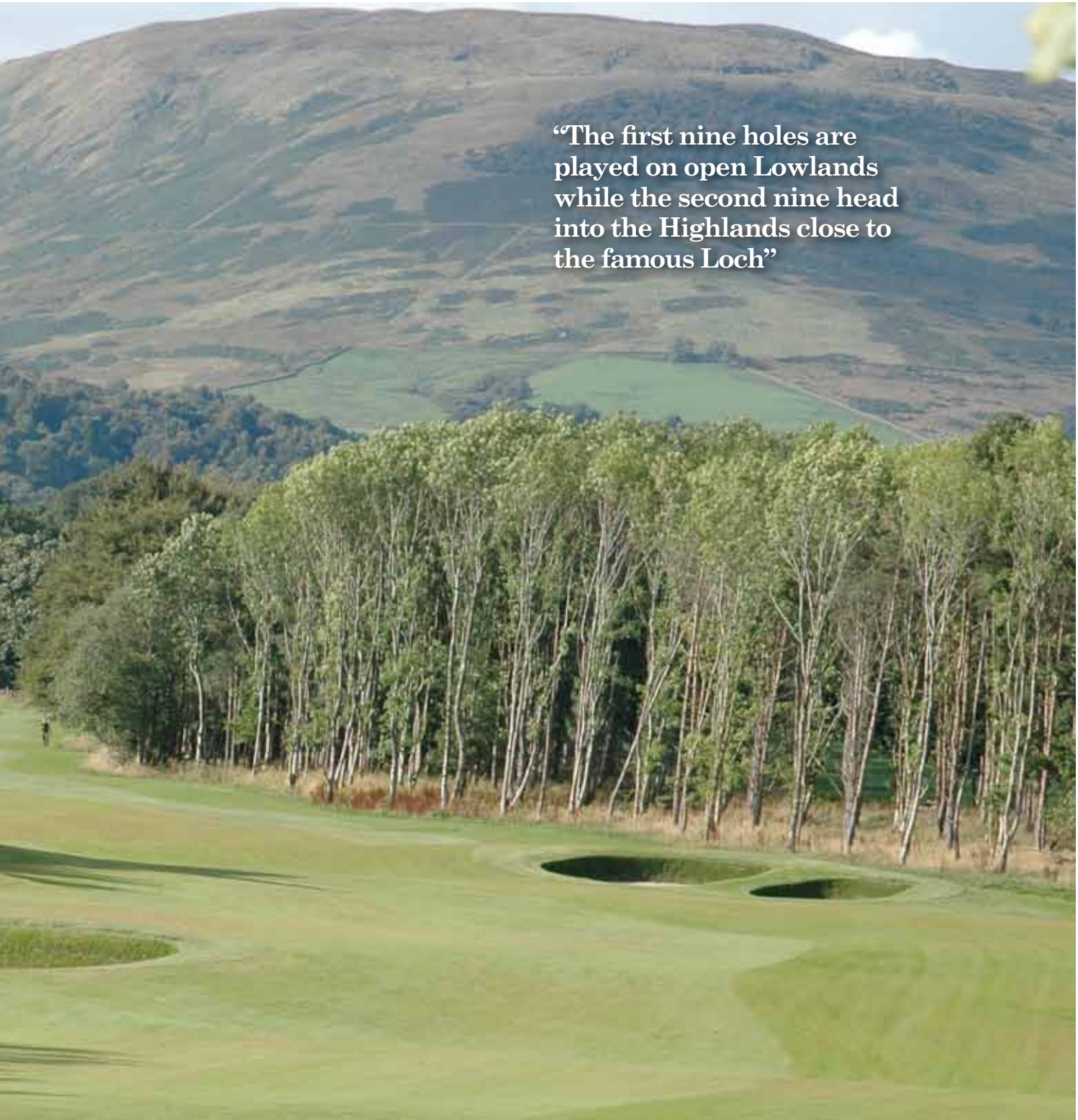


layer were "basically drowning".

"A number of the greens were down to 60% grass coverage with algae forming on the surfaces. Historically Potassium nitrate would be applied as a form of nutrition but within a week after application the turf would be wilting again. We had a five-year-old golf course with up to two inches of thatch on the greens - this led the greens to flood and ultimately turf saturation. With a change in nutrition and an improved aera-

tion programme including winter applications of Everris K-Step, we would try to build up a reservoir of nutrients in the high sand profile rootzone – this would help deliver nutritional supplements when the turf required – even during the winter months.

"I knew our success or otherwise would be measured by the quality of the greens throughout and after winter. As we enter spring it is widely accepted that turf quality and especially the greens have



“The first nine holes are played on open Lowlands while the second nine head into the Highlands close to the famous Loch”

never been better with a good turf density and disease free – all without an application of fungicide, using good old-fashioned aeration.”

Paul admits that the greens were also his biggest headache. He said: “Over the last few years we’ve used large amounts of fertilisers on the greens, which is not what we want to do. Every spring we’d be battling to get the grass growing to get good coverage and ultimately recovery.”

They also managed to convince the club that a regular aeration pro-

gramme needed to be put in place. Previous reluctance was down to the sheer number of golfers playing and an unwillingness to disappoint them. Paul says: “Communication was the key to success with the management and improvements needed with the greens, now the club management not only understand the challenges we face, but also encourage us to continue the good work”.

The team now alternate 5mm and 8mm solid tining every month.

During July and November last year they hollow tined with 12mm hollow tines, the latter not followed up with topdressing, allowing the persistent rainfall to pass through and drain away, as Jim says “aiming for a hydraulic conductivity of fresh air”.

They then introduced the Graden Sand Injector to physically remove thatch and inject sand, working on two greens at a time during the latter end of the growing season. This work is always communicated



to visitors and members alike through newsletters and golf sales colleagues.

Paul adds: "We've gone back to a very trusted, and dare I say old-fashioned form of greenkeeping. It's now spring and the worst green has 95% grass coverage. The greens are draining and there's good sward quality so we won't have to throw as much fertiliser at them to help them recover.

MACHINERY LIST

Greens: 4 x Toro Flex21, 2 x GM3250, Procore 648, Graden Sand Injection Deep Scarifier
Tees/collars: 3 x Toro GR1600, 2 x GR1000, 1 x John Deere 2653
Fairways: 2 x Toro 5400D
Roughs: 1 x Toro 3500D, 1 x 4500D
Tractors: 1 x New Holland TC45DA, 1 x TN60DA, 1 x John Deere 5080, 1 x 4520
Spraying: 1 x Toro 5800
Utility vehicles: 6 x John Deere 6x4 Gator, 1 x 4x2 Gator
Attachments: Procast PC3 Top Dresser, Wiedenmann XF Aerator, XP Aerator, Super 500 Flail, Tornado TM360XL Blower, Vicon PS303, Dakota 410, 440 Top Dresser, T.I.P. Groom-it Drag Brush, Redexim Sandmaster, Ryan Junior Sod Cutter
Trailers: Ifor Williams, Marshal S4, S2, Toro Trans Pro Flex 21, AFT 45 Chain Trencher.

"I'm an advocate of simple greenkeeping practices but you have to adapt on the day to temperature and rainfall, manage it on the hoof. Many of our customers travel great distances to hold a corporate day here, so we have to do our best to get them out on the course come hail, rain or shine."

Even before Jim became Course Manager in February last year, Paul and his team began a major programme of improvements with drainage on the fairways. The sand banding within the fairways was a bid to get the water off the surfaces and create a positive interface with the drainage below.

Paul said: "When the 1800mm we had last year is classed as a dry year you can see why we had problems! Because it's so wet, the organic matter in the top part of the fairway turf became quite thick and didn't take the water, so we invested in a contractor to cut out 50mm channels of soil, take the soil away then back fill it with sand so we were creating 12 inch deep sand channels to interface with the drainage below.

"We've bought our own chain trencher which involves a similar process to the sand banding. The rain comes, we know where the worst affected areas are on the course, it goes down the gravel drain, into the existing subsurface drainage then into soakaways. It then goes through a natural filtration system before flowing into the loch."

The next challenge was embarking on a huge renovation project concentrating on the course's 122 bunkers. They were degrading and collapsing due to the amount of rainfall – and were poorly presented with the sand becoming contaminated. So they redesigned and reurfed the existing revetted bunkers inhouse. Now they only require normal upkeep such as edging and replenishment leaving the greenkeeping team free to largely concentrate on other tasks.

The team also received feedback about a lack of definition to the semi-rough, so increased nutrition and fertiliser in these areas. They've constructed a brand new elevated tee at the stunning signature 14th hole which plunges towards the Loch. The next stages include installing further preventative drainage in the rough to complement the other drainage investment.

Jim adds: "We know how the golf course reacts to heavy rainfall and we're delivering high quality green surfaces 365 days a year because ultimately that's what the golfers care about. I'm not saying everything will be fixed in one go, it's going to be a slow process, but these small successes all add up and fill us with enthusiasm for this season and the years ahead.

"Feedback from members, visitors and regular corporate golfing parties is that they've seen a significant improvement in turf quality, particularly on the greens, and they're also pleased with the consistency of presentation throughout the year.

"The greens simply do not flood anymore, which is a huge success. Our focus now is the World Corporate Golf Final on 7 May. Some have suggested that taking on a four day high profile international golf tournament, at this time of the year, in this part of the world is a risk, but the greens are strong, the course is responding very well and we're very much up for that challenge."



MAIN ABOVE: Water on a green before the work

INSET ABOVE: Drainage channel on a fairway





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COVERING THE WORLDS GREATEST STAGES



“The courses have been maintained by three generations of ‘Mitchells’ dating back to just after the end of WW2”

Course management in a natural environment

Laurence Pithie travelled to the heart of Sussex to find out more from Course Manager Chris Mitchell about his working methods in managing Royal Ashdown Forest Golf Club

The 36 hole club at Royal Ashdown Forest dates back to 1888 when the Old Course was laid out by golfing enthusiasts on undulating land within the confines of the forest, a former medieval hunting area in south east England.

The 'Royal' title was given to the club five years later following a visit by the Duke of Cambridge who was a cousin of Queen Victoria.

Royal Ashdown is unique in many ways. There are no sand bunkers, it is registered as a Site of Special Scientific Interest and the land is leased by East Sussex County Council.

Also, it's governed by an independent body of Conservators to ensure that all land that falls within the confines of the forest is maintained within this natural environment.

As well as two adjoining clubhouses, a small pavilion exists for the benefit of the Artisan section, who in return for reduced annual membership fees and limited golf carry out fairway divoting work throughout much of the year.

But perhaps one of the most amazing aspects of the club is that the courses have been maintained by three generations of 'Mitchells' dating back to just after the end of WW2.

Chris was born and brought up on site, therefore greenkeeping and the love of the natural environment was a way of life since childhood, with an abundance of turfgrass knowledge passed down the generations.

Walking the course with him, it is clear he possesses tremendous knowledge of the flora and fauna throughout the site and how each forms part of the ecosystem within the 9.5 sq miles of forest, 60% of which is classified as open heath.

Chris was also one of the first greenkeepers in England to gain City and Guilds during the late 1970s which furthered his knowledge in turfgrass management.



Course Characteristics

The Old Course has regularly played host to a variety of national amateur tournaments as well as being used as a Regional Open Qualifier. Despite the absence of bunkers, great use has been made of the numerous water courses that traverse the site plus the ridges, mounds and slopes, many of which are covered in heather. With the highest points of the course at over 600 feet, there are several vantage points offering magnificent views in all directions. The main trees within the forest are Oak and Birch, with Alder in the wetter valleys and also Scots Pines that were planted in the early 19th century. Indigenous grasses comprising Bent and Fescue mix freely with other native grasses such as Molinia or Purple Moor Grass, Field Woodrush, Ling and Bell Heather and Dwarf Gorse, with Bracken present in the more peripheral areas. The acidic nature of the soil contains varying mixes of silt, sand and clay throughout both courses and in general, drainage is fairly good. A number of old clay drain tiles which were mostly installed in the 1960s still perform very well. The Old Course is by far the longer at just over 6500 yards whereas the shorter West Course is a tough challenge and requires a premium on accuracy from tee to green.

Fundamental Requirements

The management of the course falls under the auspices of the

Conservators who have responsibility to maintain the majority of the area as open heath, because as a National Park it is open to the public. Chris has formed a good working relationship with them, largely working for a common goal and supported by the club who are in the process of drawing up a Course Policy Document, adding to their existing Environmental Plan.

So what does this mean in terms of turfgrass management and any restrictions placed upon the club? Chris explains: "In basic terms, no buildings or structures can be erected on the site, other than those which currently exist.

"Even the maintenance building which is on two levels had to be built into the adjoining clubhouse and it's barely large enough to accommodate the range of necessary equipment. Fortunately it is centrally located to both courses although the site extends over a large area. Water is provided to both greens and tees with new polyethylene pipe and cable being fitted to all main areas, replacing the 30-year-old system. To ensure future water availability, an 'off-site' reservoir was built last year which can store almost two million gallons of water. For many, this may seem insufficient, but I have rarely used more than one million gallons per course in any given year, such is the resilience of the turf. Water can also be pumped from various areas on the course which makes us virtually self-sufficient in terms of this valuable commodity.

"Turf maintenance is just one



Low OM content and healthy ameliorated rootzone overlying the indigenous soil

BELOW: 12th hole in winter on open heathland following previous scrub clearance



"The basic objective for the 'Old' course is to maintain as much of it as possible as heathland"

Maintenance

In brief, the main playing areas are maintained as follows and relate more to the Old Course;

Greens:

Bent/Poa surfaces in varying amounts: Indigenous native soil, no drainage
OM content minimal, root depth 75mm on all but shaded greens
HOC Summer 4mm triplex, Winter 5mm pedestrian.
Frequent grooming, brushing and periodic 'vibrating' rolling
Top dressing: 80 tons per annum, 40 tons on West course
Fertiliser input: Max 40kgs N per ha. Primo Maxx monthly
Water input minimal: Only when required, staying on the dry side.
Fungicides: Spot treatment for Fusarium only. 1 - 4 lts max per year per course
Aeration: Mix of slit, deep and solid tine. No coring or deep scarifying

Tees:

Bent/Fescue/Poa surface, depending on shade and size of tees. Indigenous soil
HOC 10mm all year
Fertiliser input: 65kgs N per Ha. Two feeds per year with 11-5-5
Over-seed twice per year with standard non-rye mix

Fairways:

Fescue dominated with varying amounts of Bent, Poa and Field Woodrush
HOC 14mm all year
No fertiliser or chemicals applied, just deep tining

Surrounds:

Mix of 'above' grasses, depending on the degree of wear and level of shade
No fertilisers or chemicals applied unless required

Semi-roughs:

HOC 50mm. Limited to moderate sized areas between heather rough and fairway.

Out of play heather/grass/gorse:

Cut and cleared late Autumn to 6 inch height



aspect of site management, since much work involves preventing tree and scrub encroachment, thereby increasing the amount of open 'heather-clad' heath. A key requirement for managing any site is resources; namely manpower and equipment. The former comprises eight full time staff including myself, although some help is provided by the artisans for divot filling. Each member of staff needs to multi-task and this means being suitably trained and qualified; something which I believe is essential for this club to succeed. Also, without good and reliable equipment, the job would be impossible and we employ a qualified mechanic with a suitably equipped workshop, complete with Jupiter grinder. It means we have the right tools, when required, along with trained staff able to use them in a safe and efficient manner."

Work Plan

Chris continues: "This is split into two distinct areas - fine golfing turf and the environment since both must be in harmony with each other. Members and guests need to understand that we act as custodians - the objective being to provide good, year round playing surfaces while preserving the natural heath in the most sustainable way possible. A balance and understanding is required by all who are involved with the management of

the courses. This is what makes our club unique."

Heather Regeneration

Chris continues: "the basic objective for the 'Old' is to maintain as much of the course as possible as heathland. This includes removing scrub vegetation such as bracken and birch saplings and to fell those trees which are regarded as being unimportant to the forest or the golf course."

Bearing in mind that heather does not grow in the shade, the growth of trees needs to be controlled but in a manner that meets the requirements of both the club and Conservators.

Heather regeneration is a key part of this agreed policy and after much discussion and trials they now use the following procedures...

- Cut and collect heather 'brashings' during December to early March from an area of the site previously agreed. A Ryetec flail and collecting unit is used for this purpose set at 6ins.
- Prepare the 'new' designated area by clearing all vegetation down to a depth of anywhere between 3 to 5 ins. This includes any tree & stump removal.
- Once cleared and marked as GUR, the ground is 'scratched-up' and the 'brashings' are spread over the area and left to nature. Rolling is optional.

- It can take up to 5 years to be successful, requiring adequate sunlight and protection from any traffic. Patience and communication are essential.

There is always a quantity of dormant seed lying within the top few inches and this too can regenerate when the above vegetation is scraped clear.

Summary

Royal Ashdown is a unique golf club and frequently listed within the top 100 courses in the UK. It is maintained in a manner that befits this environment which is largely down to Chris and his passion to preserve the courses for future generations. With a lower than average labour input and minimal use of fertiliser, water and pesticides, it is clearly a course that is environmentally sustainable and economically viable, while offering firm and consistent playing surfaces for both members and guests.

As Chris concludes: "Without the support and ongoing commitment from the club and in particular the Club Secretary and Chairman of Green, the members, my staff and the Conservators, the successful transition of the course from consisting of overgrown woodland to more open heath would not have been possible. There remains so much more to be achieved and it is encouraging to receive the support of those around".



MAIN ABOVE: Ground cleared and surface prepared ready for heather brashings.
INSET ABOVE: Spreading heather brashings over prepared area

about the author



Laurence Pithie MG

Laurence Pithie MG runs his own training and consultancy company, Turf Master One Ltd. Previously he spent 17 years managing multi-site golf operations in the UK. With 42 years in the golf industry, Laurence has used his experience and knowledge to produce a number of recent 'case study' articles.

Laurence is grateful to Chris Mitchell and RAFGC for their help and input in producing this article.

Thomas's travels



Toro Student Greenkeeper of the Year Thomas Flavelle tells us about a life-changing eight weeks in the States, his reward for scooping the coveted prize last September

I felt very nervous as I sat on the plane about to fly out to the States. On arrival I found myself waiting at a very cold bus stop, when a large pick-up truck pulled out of the hotel car park and the driver leaned out and offered me a lift - a big thank you to Mike Prescott from turf contractor Sportscape for that.

At first it felt strange to be back in a classroom, taking notes and revising for tests at the University of Massachusetts Amherst (UMASS). The college day consisted of two-hour lessons from 8am-5pm with subjects including Entomology, Pathology, Turf Management and Soil Science. I enjoyed listening to some very interesting guest speakers such as Bill Spence, Superintendent at the Boston Country Club which held the 1999 Ryder Cup.

I expected the American way of doing things would be totally different to ours, and in ways they are, maybe less environmentally friendly, but the biggest hurdle was learning the different grass names for the cool seasons grasses. The lessons were very informative covering topics new to me. Networking with the other students on the course was priceless - I discussed the different techniques they use as well as how their courses are run.

As a part of my prize I was lucky enough to attend the GCSAA golf show in San Diego. I would be travelling there with Dave Canterbury - the Australian Toro winner. Unfortunately our flight to Chicago was delayed, and with only 40 minutes between flights I could see it was going to be tight. Firstly

we headed in the wrong direction through the huge airport, but after a rushed chat with an official we turned around and ran back the way we came, just making the flight and collapsing back into our seats.

San Diego was like landing in a different country - it was warm and sunny with palm trees. That evening I attended the opening ceremony, with some very interesting speakers. After this I joined my tutor Jonathan Knowles for some dinner and explored a few bars around the Gaslamp Quarter. The show itself was very interesting, with lots of products that are rarely used in the UK, including big fans to improve air circulation. It was great to catch up with people I already knew but I also met many new people. I also managed to make time for a tour of the USS Midway Aircraft Carrier which was very interesting.

I knew the trip home was also going to be eventful when I discovered storm Nemo was forecast to dump three feet of snow on the east coast. Even though my flight from Philadelphia to Hartford was cancelled, I decided to take the flight to Philadelphia. On arrival I was informed that there would be no flights for two days which created a weekend in Philadelphia for me, and what a beautiful city it is. I then headed to Washington.

We began by visiting some of the local bars and restaurants and had some great nights out at basketball and hockey games. I was lucky enough to watch UMASS beat the number one seeds Boston College 5-1. It was a great atmosphere.

Unfortunately my trip to Boston got cancelled due to the snow, but the final leg of my trip went ahead

- a visit to the Toro factories in Minneapolis.

This was an amazing tour full of information about Toro as an employer as well as the products they produce. Standing at the start of the production line was very cool, as you looked down the line a shell turned into a mower. I was now sad that the end of the trip was near.

I would like to thank Toro, Lely and BIGGA for organising this award, as it gives an amazing opportunity for aspiring greenkeepers to progress their knowledge and careers. I had a fantastic time in America, making some lifelong friendships along the way, and these people made the trip so much fun.

It truly was a once in a lifetime experience, and I wish I could start it over again. I would strongly recommend to any enthusiastic greenkeeper who wants to stand out from the crowd and study at a highly recommended University while having the time of their life to consider the Toro award.

I will never forget the experience that I had at UMASS and the people I met there.



ABOVE: Thomas at the UMASS campus

FAR RIGHT: At Toro HQ from left Rory Bairnsfather-Scott (winner of the Australian award) Thomas Flavelle, Cameron Shaw (Canadian winner) Dave Canterbury (another Australian winner)

RIGHT and BELOW: San Diego

