



- The consequential lack of aeration restricts root development, thereby limiting the nutrient uptake and leading to drought susceptibility, which ultimately results in a weak sward prone to disease and physical damage (divotting/rutting).
- Water logged soils interfere with the desirable micro organic life, which in turn may lead to a reduction in the rate of decomposition of organic matter, the result is anaerobic conditions with black layer and thatch.
- The soil structure will suffer when soils are waterlogged, as any mechanical activity will accentuate the liability of compaction and smearing.
- Finally the effectiveness of fertilisers and herbicides is reduced as the nutrient uptake is limited and the potential for leaching is increased.

Drainage design is typically separated into two components;

Primary drainage is the term used to describe the pipework infrastructure on a fairway which typically comprises a main drain with laterals connecting into it at appropriate intervals. The orientation of the main and laterals is determined by the topography of the course, however consideration should be made for the presence of irrigation pipework and the disturbance to the fairway that a main drain and associated lateral junctions would have. Typically therefore, a main drain is run adjacent to the fairway with junction positions within the rough, the laterals being more discreet are installed within the fairway itself.

A green is likely to be drained during construction and would typically have a 'herringbone' system installed, this provides for the efficient collection and removal of drainage water from the green, within the green formation (often a basin).

Bunker drainage will again comprise of pipework running through the lowest areas of the feature and connecting into the fairway drainage. Prevention of sand ingress is paramount to the efficiency and longevity of a bunker drain and the design should adequately address this issue.

Secondary drainage is often described as a bypass system. This refers to the ability of surface water generated through heavy rainfall, to be directed via a surface system into the pipe drainage network, thereby bypassing the topsoil. The systems available are known as sand slitting, gravel banding/grooving and to a certain extent vertidrain and mole ploughing.

These operations when correctly specified, situated and installed can have a marked effect on a primary piped drainage installation and extend it's efficiency.

To conclude, the design and installation of a golf course drainage scheme, whether during construction or within an established facility, requires experience and expertise. Drainage it is fair to say, is not rocket science, however incorrectly installed drainage schemes often result in an inefficient or dysfunctional system with an extensive remediation requirement. Only specialist consultants and contractors should be approached for both design and/or installation phases of any significant project.

Rod Donald is Managing Director of White Horse Contractors Limited: Lodge Hill, Abingdon, Oxon, OX14 2JD. Telephone: 01865 736272 or email: whc@whitehorsecontractors.co.uk



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A Home Win

The Neil Thomas Memorial Golf Day, at Aldwark Manor, produced its usual blend of sun, fun and golf, but on this occasion local knowledge seemed to have played a more than usual influence on the result.



Elaine Thomas and Richard Whyman present the trophy to Aldwark Manor's Manager



Toro 2 came very close

The event has always been blessed with a range of golfer you don't find at an Open Championship. Low handicappers mixing with those who are a tad less proficient meaning those who have strolled out to take in some of the golf spend time applauding and ducking in equal measure, and Aldwark Manor's own team displayed the benefits of fielding players with a range of handicaps in the fourball best two scores to count - three on the par-3s - format.

Mark Nesbitt (20), Lady Captain Jenny Stacey (20), Alastair Grindley (Scratch) and Mike MacLean (4) dovetailed beautifully to amass 98 points, with perhaps the highlight being six points on the notoriously difficult stroke index 17th, where both Jenny and Mike produced nett birdies to make huge strides on the field.

Indeed that proved the difference between winning and being runner-up as the Toro 2 team did well on the same hole but collected one point fewer. Toro, with Richard Owens (6), John Hewson (16), Adrian Kitchinson (19) and Russell Moody (15), gathered a massive 50 points on the inward nine and would have won on countback.

Third were perennial Golf Day favourites and former winners Lincsgreen 1, consisting of Rob Welford (2), Less Howkins (5), Graeme MacDonald (4) and Peter Owen (16), who produced yet another fine performance for 93 points.

Danny Chamberlain, of Rigby Taylor 2, won the Longest Drive with a stunning blow down the 8th, while Allan Russell, of 3M, proved the deadliest from the tee with Nearest the Pin on the 18th.

As ever, the prizes were presented by Neil's widow, Elaine Thomas, who was presented with flowers from BIGGA Chairman, Richard Whyman.

With the ceremonies completed the assembled players were treated to an Aldwark Manor barbecue.

RESULTS

1. Aldwark Manor 98
2. Toro 2 97
3. Lincsgreen 1 93

Longest Drive	Danny Chamberlain
Nearest the Pin	Allan Russell



Lincsgreen put up their usual fine effort



Allan Russell was the dead eyed dick



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GROUND CARE



Feelin' Hot! Hot! Hot!

It may have taken 39 years for The Open Championship to return to Royal Liverpool Golf Club - better known as Hoylake - but members of the BIGGA Open Support Team will remember the week for much longer than that.

The straw colour, which greeted everyone when they stepped through the gates, was evidence of a long dry spell in the weeks before the first ball was struck and it provided the sort of links conditions for which the R&A craved. The week itself witnessed temperatures not experienced in the UK for many a long while. Indeed smoking warnings were regularly posted and it was a great relief to everyone that "bush fires" were avoided.

It was in these boiling conditions that Links Manager, Craig Gilholm, and his team had prepared the course and it was in these conditions that BIGGA's Support Team worked harder than any Support Team has done in the past.

For the first time ever the 60 strong team prepared bunkers prior to the start of play, raked bunkers during matches and divoted the courses in the evening after play stretching resources to the limit.

The demands increased with R&A Chief Executive, Peter Dawson, and Championship Chairman, Martin

Kippax, requesting flat raking whenever possible and this was achieved on the two rounds - 2nd and 3rd - which avoided overnight thunderstorms. This proved to be a delicate and difficult task, given the rakes provided to tackle the job, and doubled the time estimated to complete the work. However, it all proved worthwhile with the team receiving compliments for the quality of their work and no major issues with the players.

Off course also proved a memorable occasion for the team, dining morning and night in the imposing Anglican Cathedral, which neighboured the John Moore's University campus were the team was billeted, while the quality of the nightlife in Liverpool, when the team had the opportunity to take advantage, was never in doubt.

Craig, who took over at Hoylake following the sad passing of Derek Green, was quick to pay tribute to his team who had worked tirelessly over the previous five years to ensure that the course met the demands of the

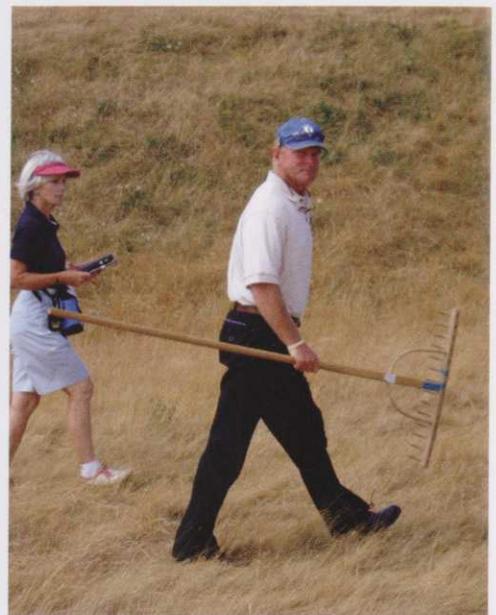


A Support Team member in action

Feelin' Hot! Hot! Hot!



Final round action



Richard Matteson, USA

modern day professional and it was a tribute to him that he was able to build on the wonderful foundations laid by his predecessor.

If proof were needed you can say that Hoylake was able to identify the finest golfer in the field with Tiger Woods chalking up his 11th Major victory, another one closer to the record of 18 held by Jack Nicklaus.

Tiger was glowing in his praise for the course, explaining that it was great to have a course which could be played in so many different ways. He chose to find the fairways with irons, leaving him short of many of the bunkers and with longer approach shots and who can argue!

Snippets

NEW JOB FOR O'LEARY

David O'Leary visited The Open the day after he parted company with Aston Villa and through his friendship with Lee Westwood acquired an armband to get himself inside the ropes - I know! He spent some time in conversation with Support Team member Paul Eddlestone and was caught on camera by some of the photographers who managed to make it look as though O'Leary was the man in possession of the rake!



Ernie Els on the 5th



RAKING IT IN....

DAVID O'LEARY has just made a mint leaving Aston Villa and our picture makes it look as if he was raking it in at Hoylake yesterday. At least he probably found the battle for the Claret Jug more fun than his time with Deadly Doug.



Gary Cunningham with Tiger on his final match



Billy Merritt gets close to the action



Chris DiMarco



The Wednesday evening Bunker Masterclass proved very informative.

Photo by Colin Denny



Craig Gilholm (right) has a chance to share experiences with Ewan Grant, Head Greenkeeper at St Andrews who was in the same position the previous year.

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Derek Green, who worked so hard to enable Hoylake to be returned to the Open rota but who sadly died before he could see it, was remembered during the week when his old friend Bill Lawson organised a small meeting in the BIGGA Marquee. Attended by Derek's son, Richard, Hoylake's Chairman of Green, Nick Peel, Craig Gilholm, John Pemberton, Scott MacCallum and BIGGA Past Chairman Andy Campbell, Derek's memory was toasted and a few stories shared of Derek and his outstanding work.

DAY ONE FANATICAL FANS

A member of security's mobile went off as Simon Kahn was over his putt, he missed and two of his fans went after the security man, grabbed his phone and threw it in the long grass. Information supplied by Open Support Team Member Steve Beverley from Cleethorpes GC.

OUT OF BOUNDS

Nick Dougherty, on the 10th hole of tee, hit out of bounds only to hear a woman shout, "Your ball is in my garden" and then throw it over the fence at the marshal. Information supplied by Gavin Robson from Burton-on-Trent GC.

BIG BULLY

A spectator shouted at Ernie Els, "Come on Ernie, oh, and by the way, your wife said you need to lose some more weight." Information supplied by Colin Denny from Heaton Moor GC.



Photo by Colin Denny

DAY TWO PUTTER SAVED PAR

Jim Furyk used only his putter to get out of a green bunker on the 5th and saved par. Information supplied by Fredrik Seeger from Sweden.

HE JUST COULDN'T RESIST A MR WHIPPY

Sergio Garcia departed for areas unknown only to appear later eating an ice-cream, having held up play for about five minutes. Information supplied by Richard Matteson, USA.

WHEN YOU'VE GOTTA GO...

On the 8th hole Darren Parris was using the players toilet, when a child started rocking it, shouting "Hurry up, hurry up!" Information supplied by Mark Ellis, Spain.

DAY THREE GOOD WORK

Greg Owen didn't find sand until playing his 50th hole of the championship, clearing nearly three rounds without hitting a single bunker.

TOUGH GAME

Todd Hamilton complained about the pin positions claiming they were "Too hard". Information supplied by Keith Scruton, member of the BIGGA Open Support Team.

IT'S GOT TO BE PERFECT

On the 14th fairway bunker, Casey and Khan were in the same left side bunker. Khan played out first then Casey requested Khan's caddie smooth out the footprints made by Khan. Casey played his shot and failed to get the ball out. Information supplied by Mark Ellis from The Millbrook GC.

THE GREAT BIGGA BUNKER COMPETITION

Members of the BIGGA Open Support Team entered our competition to guess the number of bunkers that would be found each day, and in total, at the Open.

Winner of day one was Paul Johnson from Hankley Common GC who guessed 350 - the actual amount being 352. Friday's winner was Jonathon Evans from Carden Park GC, the number of bunkers visited was 353, Jonathon guessed closest with 367. Kevin Hodges from Longniddry GC, who estimated 188 bunkers would be hit on Saturday, was the winner on day three. 183 were actually hit.

Iain MacLeod, member of the BIGGA board was overall winner of the BIGGA Bunker Competition. He estimated that 1093 bunkers would be hit over the four days - good guess Iain - 1092 were actually found.

Winners of the daily competition received a half bottle of whisky and the overall winner received a bottle of whisky.

BIGGA Bunker Stats

	1995 St. A's	1996 Ly'm	1997 Troon	1998 B'dale	1999 C'stie	2000 St. A's	2001 Ly'm	2002 M'field	2003 St.G's	2004 Troon	2005 St A's	2006 Hoylake
Bunkers	112	185	84	117	115	112	197	148	106	93	112	96
Rd 1	214	501	344	355	539	148	557	359	388	393	252	352
Rd 2	201	577	272	406	468	164	547	372	405	371	203	353
Rd 3	130	269	107	226	202	65	224	175	149	148	100	183
Rd 4	156	271	136	153	265	71	257	169	181	185	121	204
Total	701	1618	859	1140	1474	448	1585	1078	1123	1097	676	1092

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