



The methods introduced by TurfTrax could make major impact on greenkeeping over the next few years. Scott MacCallum met the people who will make that happen

# MAKING TurfTrax



# TRAX

There is a saying "Information is King". Boiled down to its simplest form the moral is that the more you know, the better the chances you have of success, particularly if you are better informed than your rivals.

With that in mind, you can see nothing but success for BIGGA's latest Golden Key Supporter, TurfTrax, a recently-formed company which specialises in conducting non-destructive scans of soil to provide indications of how soil properties vary spatially across a playing surface. This information is crucial in providing a basis for advice on how to achieve the best

possible results with what grows above the ground.

The company uses an adaptation of the same technology used in seismic surveying, where it is generally used to look at areas 10s of metres below the ground, but have fine tuned it to provide detailed information of the top 1.2 metres of the soil profile.

"We operate two forms of scanning," said Sales Director and former greenkeeper, Colin Hood.

"One which is hand-held and the other which is towed behind a specially adapted quad bike which is designed to collect as much data as quickly as possible to the inconvenience and cost," he explained.

"By using the quad bike on the fairways and rough we can collect five readings per second - which is the equivalent to taking five soil samples at a depth of 1.2 metres which represents 300 litres of soil. On a typical fairway we take approximately

10,000 readings - the equivalent of 10,000 cores but it's a non-destructive reading and therefore doesn't affect the ground in any way."

Those readings are then emailed back to the TurfTrax headquarters where the raw data can be turned around in about half an hour. The next stage is to build up a layered map of the ground which will identify potential trouble spots and allow the TurfTrax experts to specify what the soil requires to make it the best possible medium for its usage.

The man who developed the TurfTrax idea is Technical Director, Justin Smith, who until three years ago had spent his entire career in research as a soil scientist.

"I spent the last three years looking at how the new technology which was coming into the agriculture market could influence the decision making processes on farms in terms of achieving better productivity," explained Justin.

The exercise confirmed to Justin the importance of working with the medium in which everything grows rather than concentrating on what to put on the living organism to keep it going.

It was while working in the agricultural field that a chance remark on the radio opened Justin's thinking to the possibility of using the technology they had developed in the sporting arena as well.

"We were driving back from an agricultural job when we heard Cornelius Lycett (the BBC's horse racing correspondent) discussing the going conditions at a race course and how no-one ever told him why conditions varied. My colleague and I just looked at each other as the light bulb lit up in our heads."

They approached a race course and met the Clerk of the Course to show her how the scanning technology worked and she was impressed by what she saw.

"She said we should do it for the Grand National in three months time

and get it in front of the BBC. We wanted to rise to the challenge and were literally writing the software the night before the National but the BBC used it to explain what the "going" was going to be and it snowballed from there," explained Justin.

Now the technology, which also involves weather stations and sensors planted in the ground is used on all Britain's Super 12 race courses and The Jockey Club are particularly keen on it.

Having convinced the horse racing fraternity, they moved on to football, cricket and then golf.

"In some ways golf was the most obvious market because of the variability. On 200 acres of golf course not too many of those acres are going to be identical and it is going to require different levels of management to produce the best results," said Justin.

The company was given a major boost when it caught the attention of Adam Mills, a businessman with an impeccable City pedigree, who was looking for a company with investment potential.

"I was extremely impressed with the data collection element but the really clever bit is the analysis and what the information will mean to the greenkeeper. It is the totality of the service we can provide which impressed me," said Adam, TurfTrax Chairman.

That point is reiterated by Colin. "Yes, the technology is very clever but it is the data, its interpretation of that result and the diagnostics which lead to a solution which is the most important element."

"We use very high-tech technology to get there but as far as the greenkeeper and the greenkeeping world is concerned we are offering scientifically proven solutions, coupled with what we term on-going ground management. It means the soil and the conditions are measurable, so that a more measured approach can be taken all round."

The benefits of that do not take long



Above: Adam Mills, Chairman; Colin Hood, Sales Director; Justin Smith, Technical Director; and Tim Bonfield, Field Operations Manager. Below: An accurate survey of a golf course can take the supposition out of decision making





The surveys can be done by hand held equipment or, as above, with a quad bike trailing the sensors

to appreciate. Imagine attending a Green Committee armed with information which highlights why the 8th has always suffered from waterlogging.

"We also have the TurfTrax Ground Management Systems where we install a weather monitor, coupled with sensors in the soil so that we can cross reference everything in real time. We are monitoring the weather as well as the soil conditions and cross referencing the two for presentation in a data recording system.

"We are taking the subjectivity away from the greenkeeper so that when he's asked why the course was closed last Sunday when the one down the road was open he can say well we had 10mm less rain over 24 hours and here are the data to prove it," explained Colin.

TurfTrax is also working closely with architects because of the obvious benefit to the architect of knowing what is below the surface before he maps out the route of the proposed golf course.

"People often go ahead with the construction of sports facilities, based on an assumption of what is required and unfortunately the wrong decisions are made which costs a lot not only in financial terms but also in cultural terms with people not having access to facilities," said Justin.

"In almost all the cases in which we've been called in it has been because problems have arisen, problems we could have predicted and

solved before they became an issue," he added.

A full survey can take from as little as three days to up to two weeks if it is to cover a detailed survey of everything including the provision of topographic maps which are accurate to around four to five centimetres.

"We spend a long time working on offering different service levels tailored to what the greenkeeper is going to value and offering some straight forward packages at affordable prices so that everyone is catered for," said Adam.

Asked if, in five years time, the dream was that a quarter of the clubs in the country would be using the service, Adam's hand moves in a fashion more often seen on Bruce's Play Your Cards Right when someone is considering what to predict after a 4 has been revealed.

"Realistically, experience will teach us how readily it will be taken up but in other industries we've had our arms bitten off."

However, he does admit that golf might be more difficult to break into than agriculture.

"In some ways agriculture is an easier sell because it comes down to a straight forward economic argument

whereas in golf, although there is an economic argument, it comes down to quality which is not as easy to quantify in financial terms.

"The key is that we offer a holistic service and offer a huge range of skills - analytical agronomy, nutrition, soil physics and engineering. It is close to becoming a one-stop shop," said Adam.

In addition they have a close tie-in with Cranfield University.

"We are cross referring to Cranfield so it gives us independent status. We would not get Cranfield's support if we were not along the right lines," said Justin.

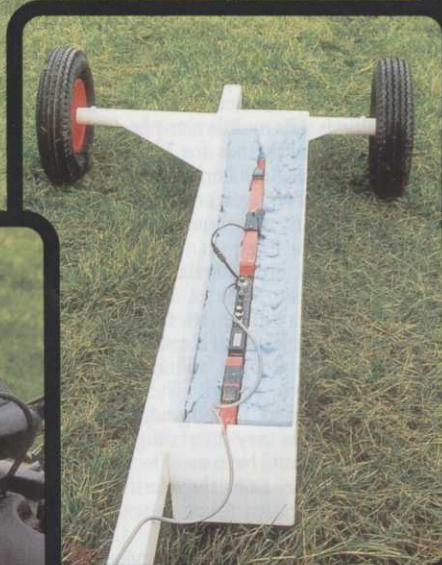
TurfTrax's decision to become a Golden Key Supporter of BIGGA is borne from a desire to become known in the industry and to assist in the education and development of BIGGA members.

"We are very pleased to be part of the Golden Key Circle as it encour-

ages education of not only the young greenkeepers but the more mature as well. We want to move forward with BIGGA, who itself has come on leaps and bounds, and see the industry become more electronic and scientific in handling information and making management decisions based on information supplied," explained Colin.

The company has grown quickly in the last 12 months going from a staff of three to 22 with five sets of quad bikes and scanning equipment and they will be moving to a state-of-the-art headquarters in Bedford shortly.

"We are looking at substantial growth over the next two to three years and we have put resources, in terms of management and money, into the company to make sure that this business doesn't want for either with a view to being one of the major players in this industry for the next 100 years. It will be quite fun doing it," said Adam.



Above and left. The information is emailed back to headquarters and can be analysed within half an hour