

An agronomist's view

It would seem an opportune moment to try and clarify what is meant by 'USGA spec sand greens', as extolled in the article on East Sussex National in the March issue of Greenkeeper International.

The claim is made that such greens "planted with Pennlinks bent grass CAN be a huge success in Britain". So they can, subject to certain conditions, one of which is that such U.S.-influenced courses are not built 'North of Watford'! Equally, which in fairness is fully acknowledged, their management is entirely different. If you have upwards of 40 greenkeeping staff; unlimited budgets; do not want to play winter golf (closing in January and February being a requirement to producing superb conditions in summer); and limit play to 500 rounds a week, then I accept it can be done – if only for a period – and the proof exists in Uckfield. I must admit that I have not seen the course completed – only when half the Sussex Wealden clay was being moved from A to B and back to A again, which is not good for construction costs or the retention of natural drainage on heavy land sites.

However I do feel that we need to bring a little perspective to the problem. Whether such vastly expensive projects will ever pay, or indeed meet a need, is arguable. What is not, is that such costs must be reflected in the cost of golf and clearly such courses do not in any way meet the needs (real, however exaggerated, in The Demand for Golf) of ordinary golfers.

Equally we need to take note of the advice and research which is available – to have the ability to learn from other peoples mistakes and expensively acquired experience.

Research carried out by the STRI and funded by the Royal and Ancient on pure sand greens and the use of Penncross (and allied strains), is clear and unambiguous and very much in line with Punch's advice to those about to get married!

In an article by three senior STRI staff (Amateur Golf, September 1990) one sentence sums it all up. "If the authors seem unduly pessimistic about the use of creeping bent grass (i.e. Penncross etc.) then this is justifiably so. We have seen too many greens in Britain which, seeded with bent grass appeared wonderful in their first few years but later degenerated to produce a very poor playing surface".

In no trials have creeping bent grasses outperformed especially the newer strains of browntop bents and they have incurable faults in Northern European temperate zone climatic conditions. They all become dormant in our not particularly cold but wet winters. This matters little if, as in Canada, no winter golf is played, with courses under several feet of snow, nor equally in Florida or Texas 'where there is no winter'. Here, with incessant and increasing winter play it is a fatal fault. Not all of us can close our courses for 2-3 months in winter. Fewer still can afford 36 greens to 18 fairways, playing to winter hardy greens from October to April and summer bent grass ones from May to September!

It is however in the obvious misinterpretation of the term 'USGA spec sand greens' that correction and education is closely needed. Strictly the description should be USGA Green Section Specification, which as is specifically and

pointedly emphasised does NOT mean pure sand but a sand/soil mix. Such greens are designed to produce a perched water table, retaining a controlled amount of water. Unsurprisingly, this is not acceptable in the hot arid zones of the Southern States of America, nor in other near-tropical conditions, where the sheer volume of water required to keep grass alive and cool means maximum conductivity and thus pure sand construction. This is of course totally irrelevant to UK conditions and in fairness East Sussex National greens are sand/peat.

What I must emphasise is that pure sand greens, depending on intensive NPK fertiliser treatment as there is no buffer to retain water or plant nutrients, inevitably revert to *Poa annua* and unless limed are quickly destroyed by *Ophiobolus* ring disease. This does not happen in, for example, Southern Arizona, because the summer heat kills any other grasses than the sown (heat tolerant) ones.

What must be understood is that the term USGA Green Section Specification is only one aspect of building underdrained greens. I know of no reputable new construction where greens are not built on stone drainage carpets, but few if any are really 'USGA spec'. I have been specifying such under-drainage for over 25 years. Equally the root zone over the carpet must have a high conductivity rate but it must also have a buffer to retain plant food and moisture. The ideal mix is one of what, for want of a clearer description, we must call fen soil. – (not a monopoly of any one firm!) – which is a humus-rich sandy soil containing not more than 5% clay/silt – with an appropriate proportion of a very carefully specified sand. It has many physical advantages over a sand/peat mix.

The use of local top soil for this root zone is virtually always out of the question. Even if the sub-soil is sandy, the depth of suitable top soil is so shallow that acres have to be stripped to provide the 9" – 10" of root zone. Furthermore such 'borrow' pits have to be restored and it is cheaper to buy in, especially where there is a guarantee of consistent quality. It is worth while noting that the greens on even the new sixth course at St. Andrews, (the Strathtyrum) being built to my specification, are on stone car-

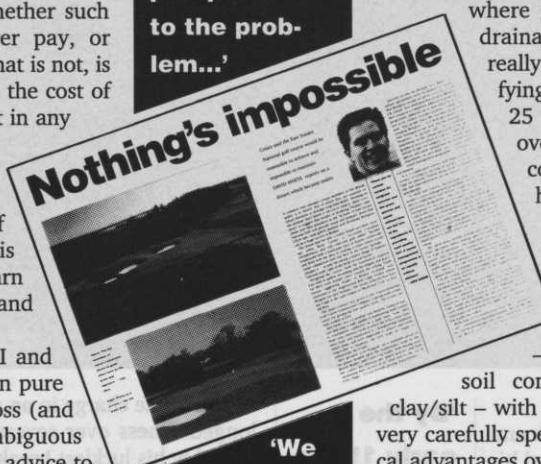
pets.

The 'USGA spec' advises 4" of 4 mm gravel, with a suitable blinding layer. Such a shallow depth is totally impracticable, demanding hand work, and precludes speedy and therefore cheaper construction with mechanisation, as the gravel merely sinks onto the sub-base. Another major error perpetrated last year with disastrous results is to use a geotextile membrane, which quickly clogs and seals, instead of a compatible blinding layer, e.g. 4 mm gravel over 150 mm of 40 mm clean stone.

Writing with the assurance which comes from having been involved in the building of over 2500 golf greens, none of which when built as specified has ever given problems and many being over 25 years old, I can assure you this method works and is totally relevant to UK (and Northern European) conditions.



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● The author, Jim Arthur, is known world-wide as the consultant agronomist who, in 1971, became consultant to the R. & A. Championship Committee, a position he held until his retirement from active practice in 1988. He has long been a champion of the greenkeeper, a person he believes is underestimated in the booming golf industry.