



An Olympic feat

BY DAVE SALTMAN

Editor's note: This article originally appeared on the website of the British publication Pitchcare. It has been edited for a US readership; to see the entire article, visit www.pitchcare.com.

This story is based on an interview with Simon Jacob from GreenTech ITM Ltd., the company responsible for providing the Athens Olympic stadium pitch in time for the track and field events. This was a joint venture for GreenTech UK and USA.

"The contract came about in August 2003, we were contacted by Jack Morton, the Opening Ceremony Contractor, who was organizing special effects for the Greek Olympics," Jacob said. "They had decided to construct a lake in the middle of the stadium and did not want grass in the stadium for the opening ceremony. The original lead came through Pitchcare's website."

"The lake was to take up the entire pitch surface with a 25m hole in the center of the lake. There were also tunnels under the pitch for performers to gain access and nobody seemed to have an idea of how to overcome the transportation of a last-minute pitch. The entire process took 6 months of deliberation before we were awarded a signed contract," Jacob said.

"We had wanted to and suggested that the field was constructed during the autumn of 2003 by seed and Bermuda sprig so that the pitch could become established. However, we did not get the contract until March 2004. We were contracted to supply the product as well as the design framework and consultancy to oversee the process."

"We specified Bermuda 419 grass, but there were no Bermuda 419 grass fields in Greece. Greece is in a transitional zone so with the hot summers they were able to use Bermuda grass and then overseed for the winter with Rye grasses," said Jacob.

"However just looking at their climatic records, we could not believe that there were little or no Bermuda fields being cultivated."

The main contractor (Aktor) decided to use a local turf company, Hellasod ("Greek turf"), the main Greek turf contractor. They gave them the contract to build the field and supply all the materials, rootzone, gravel, and turf. Their remit also involved the filling of the modules, while another local company was awarded the

contract to move the modules. So with the various contracts in place we had a Greek turf company and transport company, with GreenTech supplying the modules, design, and maintenance expertise for the project," Jacob said.

"We appointed to the task Matthew Frost, who had been working most recently at the prestigious Hong Kong Football club, and a lad from Michigan State University, Matt Anderson, as well as Tim VanLoo a Michigan State University graduate student, who had great experience from the Spartan Stadium Construction and installation. Both of them joined Matthew in Greece from April 1 this year."

"When we were awarded the contract in March, we had to get 7,128 ITM modules to Greece, by the end of April! There were penalty clauses in the contract amounting to quite a few thousand Euros if we didn't meet the deadline. The pitch build started on April 20 at the construction site near the airport and finished May 15," said Jacob.

"We were manufacturing the modules and delivering them in batches, 396 mod-

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ules per lorry load, 18 loads in total, we also needed to manufacture sleeves that sat around the modules to retain rootzone material (every other module had a sleeve). Despite the short time scales we were able to meet the deadlines and the construction went smoothly.

"So we could start the construction we brought over Dr. Trey Rogers from Michigan State to find an appropriate rootzone. Aktor appointed the University of Athens to carry out a study on the system and to undertake all the quality control. They did all the testing of the rootzones we had inspected. The root zone was 90 percent sand and 10 percent soil; it met the specification and was fine. Before the modules being filled with this rootzone, we used 4-6mm gravel in the bottom of each one," said Jacob.

"Hellasod did have some Bermuda turf but it was not fantastic. We tried to source

some better material, but this meant importing turf from abroad, which wasn't ideal. In the end we decided to go with the local Bermuda turf, but for the system to work in the time scale it had to be washed. We had to teach Hellasod new techniques about washing turf. There were no turf washing machines in Greece. So the head of their company decided to make their own bespoke washing machine. It proved to be a well-engineered machine.

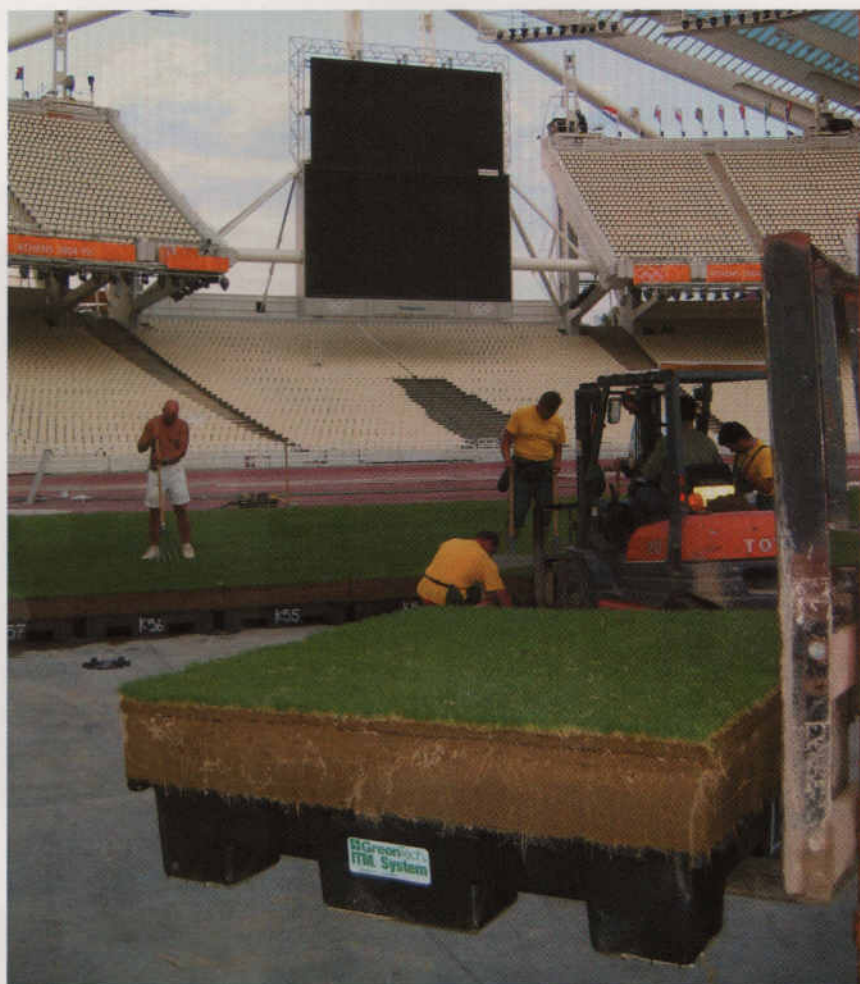
"Because the Olympic track was going to be at a certain level, built on a concrete base inside the stadium, the modules from the concrete to the top of the turf had to be 350mm deep. This meant that there was a depth of 250 mm of rootzone on top of the gravel. Once the field was built outside, we had to implement a vigorous top-dressing and maintenance program to get the turf up to scratch. Although the turf had been washed it had come in like sprigs.

"Time was short and the main contractor wanted us to do a dry run to see how long it would take to move the modules into the stadium. (The main move would only allow us a 60-hour period to get these modules moved into place within the track area, due to all the other works going on at the stadium.)

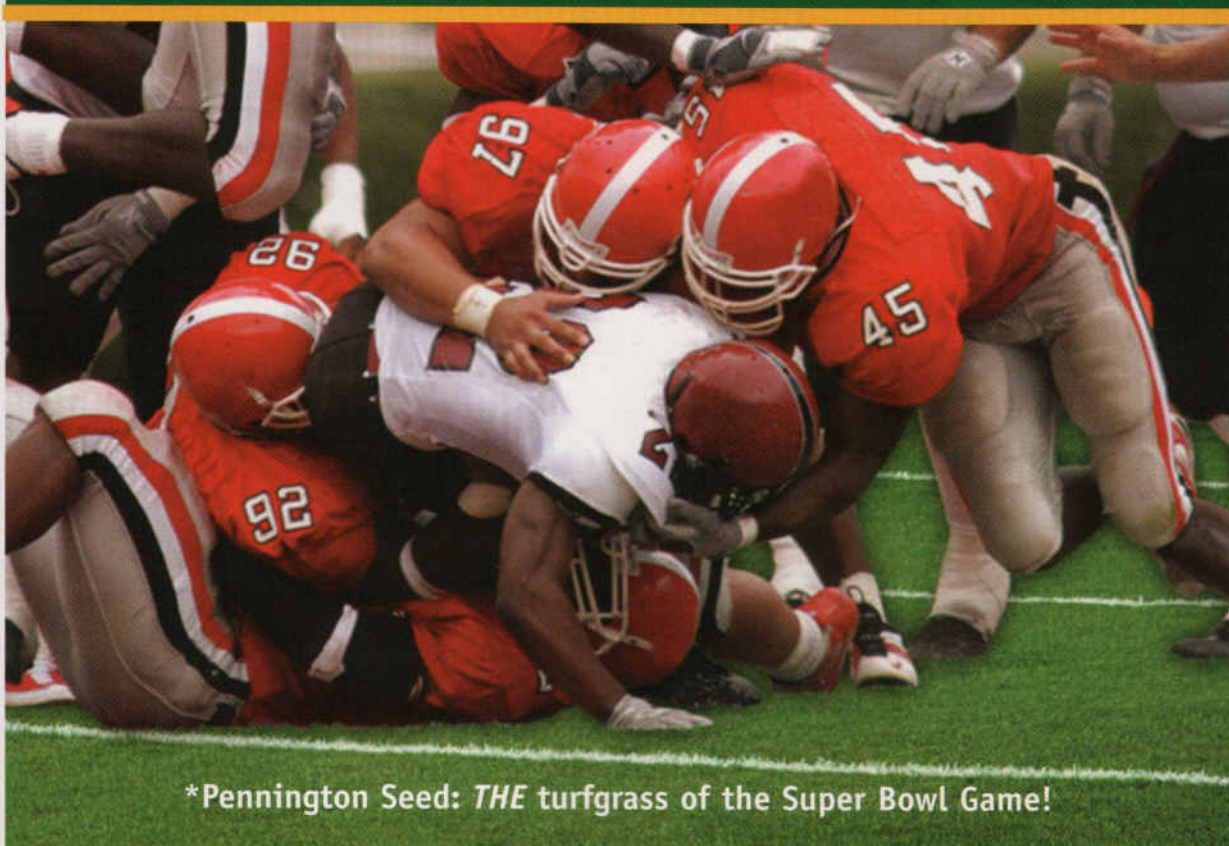
"We conducted a test move on June 20; the Bermuda turf was only 4 weeks old on the modules. The young roots were still developing and filling the modules, we moved about 1,000 modules against the clock to test the time. Then moved them back again a couple of days later. We carried on with the regular maintenance program and also did some nutrition testing from that time until the main move on August 15. "Our two lads were doing most of the maintenance themselves, with some labor provided by the Greek turf company. We had to organize the machinery, fertilizers, and chemicals, it ended up being a very good job," Jacob said.

"The Bermuda grass took to the modules very well. Every module had been numbered during the original construction. This meant that every module when taken from the construction site into the stadium could be placed back into the identical position.

"The construction site was on a crushed stone base (which was not what we had asked for. We had asked for a solid tarmac or concrete base). So at the end of the day



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we had to make do with the stone base. In fact the Greeks did a great job on the site with the stone surface, it was laser-leveled and compacted with rollers, there was full irrigation supplied, security fencing and some security personnel there 24 hours every day.

"The two months growing in the turf were not easy, the weather was much cooler than expected, and the Bermuda grass took time to establish, but by the middle of July, temperatures picked up and the Bermuda grass started to flourish. The pallets were covered for a week at the beginning with germination sheets, however once the temperature rose, the difference in color and vigor was unbelievable.

"Every truckload could take 22 modules, so we ended up with 265 truck movements, each movement a 20-minute drive from the construction site to the stadium. We employed 12 flat bed trucks, all the trucks (as well as the modules) numbered. Because of the amount of other people/vehicles involved at the Olympics, the trucks were not allowed into the stadium itself, so a conveyor belt was made available to move the modules from the trucks into the stadium. The conveyor belt was 110 meters long and stretched from outside, through a service tunnel, over the track into the middle.

"With the first module arriving at 2pm on Sunday we continued to work around the clock, with the last module in place on Wednesday at 2am, 60 hours later. There were two forklifts lifting modules from the trucks onto the conveyor belt and two forklifts lifting them off the conveyor inside the track. Then there were two more forklift trucks doing the final placing. At the construction site we had another four forklift

trucks working, moving and loading the modules on to the numbered trucks. Two cutting crews at the construction site used templates (the size of the module) to cut around the modules (cutting down two sides with a 4 inch blade.) They started in the middle working out either side," said Jacob.



"The irrigation at the stadium had been sunk into the concrete base. As the relevant modules were put in place we had flexible hoses that were fed up into the module and Rain Bird sprinkler heads were fitted. The move went well, although it slowed slightly towards the end as we ran out of working space. The fitting of the irrigation, cutting some modules to fit the oval shape of the stadium base, fitting timing and clock systems for judging, moving the conveyor also all took time to put in place.

"Every module was watered at the construction site to steady the rootzone and keep the integrity of each module. As each module was removed from the construction site floor the growing sleeves were cut off, at this point it was great to see that the rooting depth was 350mm. The root mass holding the exposed root zone in place. Bearing in mind the temperatures during

all this activity were averaging 42 degrees everybody did a great job.

"We went above and beyond the original contract, but it's the Olympic games so we made sure that the job was done correctly. Our lads have worked with precious little machinery; all they have to maintain the pitch is a Jacobsen ride-on triple mower, a Kubota tractor, and a Dennis cylinder mower. **ST**

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