



**IMPROVEMENTS TO
HICKSTEAD'S
INTERNATIONAL ARENA
APRIL 2010**



Introduction

Following the 2009 Hickstead CSIO 5* and discussions with John Roche, it was realised that further improvements were needed to the International Arena. Some feedback from the event in July 2009 was not favourable, with the conditions deteriorating for horses and riders under the extreme weather conditions.

Having researched other comparable grass arenas it was decided that the only and the best option was to approach the company that reconstructed the ring at the RDS, Dublin. In September 2009, Hickstead approached the Sports Turf Research Institute (STRI), who were responsible for the concept, design and implementation of the project.

The STRI were asked to carry out a feasibility study with regards to the drainage and overall performance of the International Arena. The aim of this study was to recommend short term remedial works in 2010 to see the arena through next season but also to include options, costs, programmes and approaches to reconstruct the arena to achieve a gold standard.



Key STRI Staff involved with Hickstead



Richard Hayden B.Agr.Sc, C.Sc, M.Eng

Richard's reputation in successfully managing and delivering difficult and high profile stadium projects has grown considerably since joining STRI. Clients appreciate Richard for his practical approach, dedication and ability to troubleshoot and manage complex situations and projects across the globe.

International Projects

Royal Dublin Society, Croke Park, Consulting on behalf of UEFA for Euro 2012, the 2009 UEFA Cup Final in Istanbul, The GAA, FIFA, Shaktar Donetsk and FIFA



Charles Henderson (HND Turf Science), BA (Hons)

Charles studied a Higher National Diploma in Turf Science and Golf Course Management at Myerscough College, followed by a Bachelor of Arts Degree in Landscape Management at the University of Lancashire. Practical experience includes working on the finishing and grow-in of three championship courses, including St Andrews Bay in Scotland and The Grove in Hertfordshire.

The STRI has been engaged by London 2012 for the feasibility study and design inception stages of the Greenwich Park Cross Country Course.



STRI Recommendations

Because of time restraints in 2009, a reconstruction of the Arena was not possible. To design and prepare the project was estimated at 6 months. To implement the project 6 – 8 weeks. First use ideally 7 months.

Therefore a series of maintenance operations are planned which will improve the surface and reduce the risk of heavy ground, and provide the best possible surface drainage and footing.

The following work has been done this winter under the supervision of the STRI.

- December, January, February and March – Deep spiking and/or slitting carried out on a 3 - 4 weekly basis but ensuring not to lose grass cover
- April – Spring renovation (details over the page). Then an increase of mowing frequency to improve turf grass density. Application of fertiliser to increase vertical and lateral turfgrass growth.



Deep spiking and/or slitting carried out on a 3-4 weekly basis.
This was carried out using a SISIS slitter to a depth of 250mm





Spring renovation

The arena was mown down to a height of 20mm. The ring was then scarified to remove all debris and the grass cuttings collected.

The arena was verti-drained using a 18mm tine to a depth of 200mm.

The primary purpose of a verti-drain is to relieve compaction within a turf arena and provide better drainage, allow deep root structure for the plant, allow oxygen down to the root zone of the plant and as a result provide a better surface.





Spring renovation

We then spread 360 tonnes of a coarse drainage sand over the whole arena

This gave us a total coverage of approximately 20mm of sand





Spring renovation

The arena was then verti-drained again to a depth of 120mm with a 20mm tine.

The surface was then heavily brushed over two days. This moves the sand into the holes giving vertical drainage channels and incorporating sand into the top 20mm of the soil structure





Spring renovation

The arena was then over seeded with 350kg of a special hardwearing rye grass and then fertilised with 600kg of a 20:10:10 fertiliser





Friday 23rd April





Tuesday 4th May (11 days later)





2010 CSIO

As previously stated the STRI, the world's largest sports turf and equestrian surface consultancy company, have been engaged by the Bunn family at the All England Jumping Course, Hickstead. The STRI will test the arena prior to and during the event.

As agreed with the FEI, if the measurements as indicated below are exceeded either prior to or during the CSIO the event will be moved to the sand arena.

Characteristic	Upper measurement	Lower measurement	Aim
Grass cover	95%	55%	80%
Rooting depth	150 mm	60 mm	80 mm
Hardness	80 gravities	40 gravities	60 gravities
Moisture	28%	35%	30 - 35%
Bladed traction	95 nm	45 nm	55 nm
Infiltration/drainage rate	25 mm/hr	10 mm/hr	15 mm/hr



Scientific Methods of Testing

The soil moisture content will be regularly tested (right)

Traction testing (bottom left)

Testing for harness (bottom right)





HICKSTEAD



2011 and beyond

On August the 6th 2010 the surface of the arena will be completely reconstructed including:

- Stripping off the existing topsoil.
- Re-grading the subsoil to design levels.
- Extending the area of the arena.
- Installation of pipe drains.
- Installation of irrigation system.
- Placement of base drainage.
- Re spread the topsoil with sand layer.
- Establish grass by seeding.
- Initial grass maintain.

