

International Turfgrass

The Newsletter of the International Turfgrass Society

September 2018

The 6th European Turfgrass Society Research Conference

by Stewart Brown, ETS President
University Centre, Myerscough

The European Turfgrass Society recently held its 6th Research Conference 2018 in Manchester, United Kingdom. This is the first time this prestigious event has been held in the UK with past conferences in Italy (2008), France (2010), Norway (2012), Germany (2014) and Portugal (2016). The ETS Conferences are the forum par excellence for scientists, lecturers, consultants, companies and practitioners to discuss technical research and issues related with the study of turfgrass and amenity landscape areas.

The Organising Committee, led by ETS President and Conference Convener, Dr. Stewart Brown (University Centre, Myerscough), organised this international congress under the theme: "Different Shades of Green" to reflect the many, varied sports surfaces, and amenity facilities the industry encompasses.

Delegates attended from around the world including countries in Europe, and the USA, Canada, China and Australia. In total 19 different countries were represented at the 3-day conference comprising

of two days of research presentations and a third day for a technical tour to sports turf facilities.

Delegates had presentations from keynote speakers: Steve Isaac (Director of Sustainability for the R&A), Dr. Micah Woods (Asian Turfgrass Center), Dr Delegates from the 6th ETS Conference at the Manchester City FC (CFA)

Ruth Mann and Dr. Tom Young (Sports Turf Research Institute) and Professor Mike Richardson (University of Arkansas, USA).

Forty three research papers and posters were presented on a variety of turfgrass and landscape management topics from authors.

Most delegates also attended the technical field day, with visits to the Sports Turf Research Institute, Manchester City FC (CFA) and Campey Turfcare Systems, during a warm and sunny summer day in the UK.

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I recently received a phone call from a home owner who wanted to kill a damaging lawn pest but they didn't want to use pesticides. I asked what was the pest, they told me crawfish. I told them to trap them, they responded they had too many. I immediately thought what a great opportunity to have a crawfish boil and invite me! but something didn't sound right. After further inquiry I realized it was an insect problem - too bad, no crawfish boil.

If you have any newsworthy stories or information for readers of International Turfgrass, I hope you will consider submitting an article for the next newsletter in January 2019.

I hope you enjoy the very good articles in this edition.

Sincerely,
Nathan R. Walker

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Delegates from the 6th ETS Conference at the Sports Turf Research Institute, July 4th 2018



Delegates from the 6th ETS Conference at Campey Turfcare Systems, July 4th 2018

The technical tour was closed by a pleasant outdoor visit in the Campey facilities, followed by a exquisitely organized outdoor barbecue.

The European Turfgrass Society has produced two categories of papers/posters, that are published in two offprint publications of the magazines *Agronomy Journal* (with impact factor) and *ETSC Proceedings*:

- Scientific publications, published in the widely-indexed *Agronomy Journal*
- Technical publications, published as the *ETSC Proceedings*

All presentations and articles are available for European Turfgrass Society members here:

<http://www.turfgrasssociety.eu/documents/>

Playing surfaces for the Football World Cup in Russia

by Dr. Dr Richard Gibbs
Head of Sports Surface Design, STRI
Bingley, West Yorkshire, United Kingdom

Introduction

Few people could have missed the fact that the Football World Cup was held in Russia this year, the largest country in the world in terms of geographical area. Eleven cities and 12 very imaginative stadia located on the western side of the country between Kaliningrad on the coast of the Baltic Sea and Ekaterinburg, at the base of the Ural mountains, hosted the 64 matches that made up the 2018 Football World Cup. The tournament is estimated to have cost around US\$14.2 billion and it finished in Moscow's revamped Luzhniki Stadium with France beating Croatia 4-2 to claim football's greatest prize.

Since 2010, STRI has been involved in each of the three Football World Cup tournaments – South Africa in 2010, Brazil in 2014 and Russia in 2018. Those with a keen eye on the turf would agree that

2018 was the best as far as pitches are concerned - the level of surface damage (divots getting kicked out, loss of grass cover etc.) was minimal and pitches across all 12 venues were presented to an extremely uniform and high standard.

Working directly for the Local Organising Committee (LOC), STRI provided a 13-strong team of consultants for the tournament, providing technical and match preparation support to each stadium venue and most of the training venues and team base camps. Around 80 pitches in total were used for the tournament, with most being built or upgraded specifically for the event.

From a turf perspective, the biggest challenges were the climate and lack of a well-established turfgrass trade or turf management association. In

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general terms, the climate of Russia can be described as cool and continental. The main characteristics of this climate zone are warm to moderately hot summers, usually with some rainfall, cold winters with temperatures down to as low as -30°C (or lower), and continuous periods of frost and snow, sometimes heavy. Growing conditions are often poor in early spring and late autumn. Only cool season turfgrasses are viable, with the main species suitable for this climate being *Poa pratensis* and *Lolium perenne*, and the threat of *Poa annua* invasion never far away. Construction of high quality pitches in Russia therefore requires state-of-the-art technology.



Sourcing pitch construction materials in the Russian winter.

Pitch preparation

Although STRI was not formally engaged by the LOC until 2015, STRI consultants began design work on Russian World Cup pitches in 2013, when its services were employed to design the pitch at Spartak Stadium in Moscow. This was the first of six stadium pitch construction projects that STRI was directly involved with for the World Cup, the other five venues being Luzhniki Stadium in Moscow (the venue for the final), Rostov Arena, Cosmos Arena in Samara, Mordovia Arena in Saransk and Kaliningrad Stadium.

Sourcing construction materials and providing specifications for the pitches was not straightforward. The Russian sports turf industry is in its infancy compared with the UK and there were no proprietary graded sports turf construction materials available. Furthermore, all documentation had to meet stringent Russian 'norms' (standards), a process dominated by a rigid approval processes - once all the documents had been translated into Russian. Therefore, much of the initial work involved visiting local quarries for suitable materials and working with contractors who had local knowledge.

All six stadium pitches for the World Cup worked on by STRI used a conventional two-layer, sand-over-gravel, suspended water table profile construction and all the six pitches were installed with the stitched SISGrass hybrid turf reinforcing system. In fact, the Spartak Stadium pitch in Moscow was originally constructed with a Fibresand turf reinforcement system but was upgraded to the stitched system shortly before the Confederations Cup in April 2017. This pitch therefore had two turf reinforcement systems in place for the World Cup.

Stitched turf reinforcement systems were also installed in five other stadium pitches, all of which were built using a suspended water table design of one sort or another. Volgograd, Kazan and Nizhny Novgorod stadium pitches used the Desso GrassMaster system, whereas the Fisht Stadium pitch in Sochi and the Central Stadium pitch in Ekaterinburg used the Bamard GrassMax stitched turf reinforcement system.

In contrast, the fully retractable sliding pitch at the Krestovsky Stadium in St Petersburg went through several transformations. It started off as a Fibresand reinforced pitch but was upgraded to a GrassMax stitched reinforced pitch for the Confederations Cup in 2017 before finally being returfed with a Mixto carpet hybrid turf reinforcement system for the World Cup. The third transformation took place in the middle of the Russian winter, with 8000 m² of turf being grown under glasshouse conditions in Denmark and transported in 20 refrigerated trucks to St Petersburg in time for a Europa League Round of 32 game in February 2018.

Eight of the 12 stadium pitches benefitted from a vacuum and ventilation system, this being a strong requirement by FIFA for World Cup pitches. A special case had to be made for the four pitches that were built without such technology. A mixture of proprietary and custom-made designs was used. The pitches at Luzhniki, Spartak and Rostov-on-Don were installed with the SISAir system, whereas the SubAir system was used at Volgograd and Nizhny Novgorod. Kazan used a Slovakian-designed system. Sochi and St Petersburg used Russian-designed systems.

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All 12 stadium pitches had glycol-based under-soil heating systems as well as overseas and locally-made lighting rigs – a must for stadium pitches in this country.

Five of the 12 stadium pitches had been completed and were well tested by the end of the Confederations Cup in July 2017 (Spartak, St Petersburg, Sochi, Kazan and Luzhniki). Six of the remaining seven stadium pitches were established from seed towards the end of 2017 using various blends of *Poa pratensis* and *Lolium perenne*. However, the brutal winter of 2017/18 meant that a comprehensive spring oversowing was required in April 2018, leaving barely six weeks of good growing conditions to prepare the pitches for the tournament. The last stadium pitch to be completed was at the Cosmos Arena in Samara, which had to be established from turf brought in from Germany in April 2018.



Typical extent of winter kill on some of the training pitches in May 2018, only a few weeks before the tournament.

STRI, one for each venue. These kits have been left as a legacy item for Russian turfgrass management development.

Performance testing aside, managing turf health and quality was always high on the day-to-day agenda at every stadium pitch in terms of:

- finding a balance between constant requests for lower cutting height and prolonging turf quality for the duration of the tournament for the benefit of all teams
- addressing poorer turf quality at the southern (shaded) end of most stadiums – lighting rigs were in constant use throughout the tournament – manoeuvring them into place around advertising boards and miles of cable was another matter



Removing snow off turf protection tiles that had been used to protect the Luzhniki Stadium pitch for an event in early March 2018, three months prior to the World Cup.

Pitch monitoring

During the tournament, all stadium pitches were regularly performance tested to assess consistency within a pitch as well as between pitches. Given the limited time that was always available on match day-1 and match day, tests were confined to the essential measurements of surface hardness, surface traction, volumetric soil moisture content and grass height. Information collected was then used to fine tune management advice for providing the best possible playing surfaces for the tournament. A feature of this World Cup was that the LOC purchased 12 sets of performance testing equipment, assembled by



Luzhniki Stadium in World Cup mode

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- managing very high temperatures and humidity levels in the southern venues (Volgograd, Sochi and Rostov) that were much higher than is normally tolerated by cool season turfgrass
- managing the ever-present risk of disease during a hot summer period, a time when pitches are normally undergoing renovation.

Pitch vacuum and ventilation systems proved their undisputed worth at this tournament. Many venues used their systems in vacuum mode to remove heavy rainfall that occurred during the tournament including Sochi, Nizhny Novgorod, Luzhniki, Spartak and Kazan. Other venues regularly used their system in ventilation mode to reduce heat stress and aerate the rootzone, in particular Volgograd and Rostov.

In conclusion, what could have been a massive challenge to preparing turf facilities for the World Cup because of the Russian climate, lack of an established turf industry, red tape, and the sheer size of the country (not to mention adverse media publicity prior to the tournament), was successfully overcome. The Russians invested heavily in pitch infrastructure, sought advice where needed and it paid off handsomely.



The extent of artificial lighting rigs used on the Krestovsky Stadium pitch in St Petersburg.

The end result

The tournament was an unqualified success and not only from a turf perspective. The use of stitched or carpet hybrid turf reinforcement systems provided consistent and unquestionable strength on the pitches throughout the tournament. It also meant that more attention could be focused on pitch presentation and aesthetics rather than on managing issues of surface instability and loss of grass cover. Moreover, all stadium pitches met the requirements of this tournament without the need for any re-turfing – a result that should become the expectation for any future tournament.



STRI consultants Neil Rodger, Richard Gibbs and Lee Collier at Spartak Stadium, Moscow.

Multifunctional Activities on Nordic Golf Facilities – a Survey

by Dr. Maria Strandberg, ITS President & Bruno Hedlund
 Scandinavian Turfgrass & Environment Research Foundation
 Stockholm, Sweden

Of the 1,000 golf courses in the Nordic countries – covering more than 70,000 hectares of land – many can provide a wide range of additional services that society demands, such as rural development; conservation of natural and cultural heritage; biodiversity; and areas available to the public, for outdoor recreation, and outdoor learning. From a golf club’s perspective, multifunctionality can also provide opportunities for alternative income; stronger ties to the local community; improved collaboration; and, in many cases, shared costs with authorities, environmental and outdoor recreation

organisations, and other sports clubs; as well as a greater appreciation among the public and increased political support.

In order to create conditions for the development of more multifunctional golf courses, and thereby increase the societal benefits of golf, we need more knowledge and changing attitudes at all levels within the golf industry as well as among other stakeholders in society with an interest in land used for golf courses. In 2017, a survey was carried

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out to gather information from Nordic golf courses about multifunctional activities at today's clubs. Just under 300 golf clubs responded to the survey, which corresponds to a response rate of approximately 40%.



Report - STERF, April 2018



The report Multifunctional activities on Nordic golf courses – A survey.

Local partnerships are a precondition for creating multifunctionality. By collaborating with other actors in the landscape, a golf club can also strengthen its position in the implementation of the UN Sustainable Development Goals in the 2030 Agenda. The survey showed that 25% of the golf facilities have different types of collaboration with actors in the local community.

Golf clubs can be important actors in the conservation of natural and cultural heritage. Close to 40% of the clubs have made nature inventories



The golf course as an outdoor classroom at Motala Golf Club in Sweden.

and more than half of the clubs are making efforts to increase biodiversity. Several golf courses also showcase and preserve objects and sites of cultural importance. In and around metropolitan areas, the land and nature available to the public is limited. Here, golf courses are being developed into arenas that include sports, outdoor recreation, and social interactions as well as peri-urban nature and culture. More than 60% of golf clubs are currently working to increase the accessibility of their facilities to the public.

Roughly 30% of the golf clubs, mainly in the rural landscape, are offering activities to improve the golf club economy, for example snow clearance,



Golf and riding horses peacefully co-exist at Gamle Fredrikstad Golf Club, Norway.

forest clearing, and lawn keeping. One quarter of the clubs are offering room, and cabins to rent and camping.

Based on the results of the survey three important areas of future research and development has been identified: (1) How can multifunctional golf courses be designed and made accessible so that recreational values can be provided in a safe way for different groups, for example golf players, the elderly, walkers and joggers, to share at the same time; (2) How can golf courses be used and improved as a resource in the work on biological diversity and be an important actor in the work on green infrastructure, and at the same time protect and reveal cultural values; (3) There is a need for good examples of external partnerships and cooperation and on how a long-term process can be maintained when, for example, political decisions change or key individuals leave a project.

The full report is available at: <http://www.sterf.org/sv/about-sterf/news-archive/multifunctionality-survey>



6th ETS FIELD DAYS 2019:



SAVE THE DATE!

The European Turfgrass Society is happy to invite you to
the **6th ETS Field days** in **Padova - ITALY**

27-28th May 2019

Program and registrations will be available soon!



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www.turfgrassociety.eu

EUROPEAN TURFGRASS SOCIETY

14th International Turfgrass Research Conference in Copenhagen

July 11 - 16 2021 – Save the date!

By Maria Strandberg, ITS president, Sweden



The next International Turfgrass Research Conference will be arranged by STERF (Scandinavian Turfgrass and Environment Research Foundation) in Copenhagen 2021.

The conference will include keynote speakers, oral and poster presentations, industry networking opportunities, technical tours, social events and much more. New for ITRC 2021 is one-day programme for practitioners.

Scientific topics of interest may include: turfgrass establishment and management; turfgrass pests (diseases, weeds, insects et cetera); turfgrass physiology; turfgrass genetics and breeding; soil biology, chemistry and plant nutrition; soil physics and rootzone construction; sustainable water management; ecosystem services and biodiversity; information technology, education and communications.

Technical tours will introduce you in Nordic turfgrass research and development which is focusing on internationally important key areas. These include the pressures from government demands for greater environmental regulation, the increasing pressure on

natural resources (notably water, energy and land), the emerging role of turf management in supporting ecosystem services and enhancing biodiversity, the continued need to promote integrated pest management, and the looming challenges posed by a changing climate, and urgent need to adapt.

The on-day programme for practitioners will strengthen the ambition to take a lead in making research results and new knowledge easy accessible to end-users and to provide support to implement changes, which is a prerequisite for achieving improvement in the sustainable management of turfgrass.

Copenhagen is the congress capital of Scandinavia, and its vibrant cultural heart. Copenhagen is also truly a green city surrounded by water and parks, with climate-friendly citizens to match. The ambitious green profile of the city has a clear goal: The City of Copenhagen aims to become the world's first CO2 neutral capital by 2025. Experience it for yourself. Swim in the clean waters of the city's harbour baths, stay in a sustainable hotel, eat organic, and ride the electric city bikes around the old maritime city.

Please join us in 2021 for the latest cutting-edge research in the turfgrass industry and stay to enjoy all that the Copenhagen area has to offer!

Please visit www.Itrc2021.org to continually get information about the conference.

For more information about STERF please visit www.sterf.org



Nordic turfgrass research.



Copenhagen the green capital.

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The deadline for submissions for the next newsletter is December 15, 2018