

Sitting pretty

Are official standards keeping up with customer and commercial requirements? Ian Drury asks industry experts about the latest thinking on spectator seating.

The success of London's 2012 Olympic bid 18 months ago has already seen some fallout, for apart from the cost recently predicted to rise by some £900 million, attention has also focused on quality and consistency in terms of audience safety at the sporting venues involved.

Citing the central role of these venues as attracting sporting fans and tourists by offering optimum comfort and a great view of the action, a British Standards Institution document

published in 2005 called for a comprehensive British Standard for spectator seating. Written by John Jenkins, then Chairman of the British Association of Spectator Equipment Suppliers (BASES) – as well as Chairman of the BSI mirror committee for EN 13200, a European standard for spectator facilities – the paper drew attention to important considerations in the provision of seating as being strength, durability, fire rating, and a safe and comfortable layout.

In this context, a variety of guides and

regulations are currently referred to, one of the most common being the 'green guide', the 4th edition of which was issued by the Football Licensing Authority (FLA) in 1997 specifically for designers of outdoor stadia. Yet, the BSI document added, because of a lack of alternative guidance it is often wrongly applied to indoor seated environments. Similarly, other standards which were never intended to refer to seated arenas at all, are regularly referred to by architects and contractors due to the lack of a specific spectator seating standard. One example of this covers the important area of fire safety.

Kings Dock Arena chooses Accolade chair



Riga Arena (Latvia), pictured left, was built for the World Ice Hockey Championships and chose to use a seating system from Audience Seating. It features the Accolade chair, which has also been chosen by Kings Dock Arena, currently under construction in Liverpool.

Audience Systems will be manufacturing and installing seating for the UK's latest arena, co-operating once again with main contractor Bovis Lend Lease, as it did on the Manchester Evening News Arena and Oberhausen Arena in Germany.

To ensure that the arena's auditorium is flexible enough to accommodate all types of events, from rock concerts to tennis and boxing, a mixture of fixed and telescopic tiering will be installed, all of which will be equipped with the upholstered Accolade chair, which is also installed in the Jubilee Sports Complex in St Petersburg, Russia and the Bournemouth International Centre (pictured right) in the UK. Audience Systems will also be supplying theatre-style chairs for Kings Dock Arena's VIP boxes.



European update

Providing an update on this story, BASES' new Chairman, Mark Cowley, notes that in the context of more recent progress in moving EN 13200 to a final draft stage, events have moved on since the BSI paper was produced. Instead of pressing for a British Standard, BASES is now updating its own 1991 guide 'Recommendations for the Specification and use of Tiered, Telescopic and Demountable Seating' and it's now intended that this will operate alongside the European standard. "As an Association, we represent an increasing number of UK seating manufacturers and are producing a supplementary 'industry standard' to that of prEN 13200 (2000) Spectator Facilities," he continues.

"The feeling is that the European standard will be too simplistic in a number of areas and as seating is a piece of safety equipment we believe it's important that it's strengthened in various ways. Other European countries, such as France and Germany, already have their own national standards that will run alongside EN 13200, so the British 'industry standard' won't be out of step in that respect. One

example of the way in which BASES' complementary document will help would be the use of tension bracing in a chair platform instead of using tubular steel. Now it may be that tension bracing is merited in some circumstances, but the more general point I'm making is that substituting lower quality materials or methods could affect the structural integrity of a telescopic seating platform and thereby affect safety-critical elements. So it's for instances like this that we believe the 'industry standard' will provide additional safeguards."

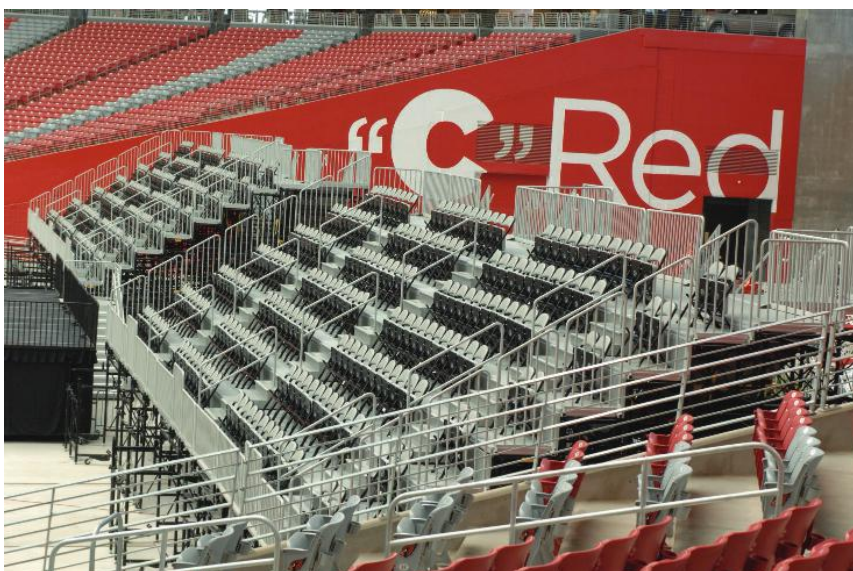
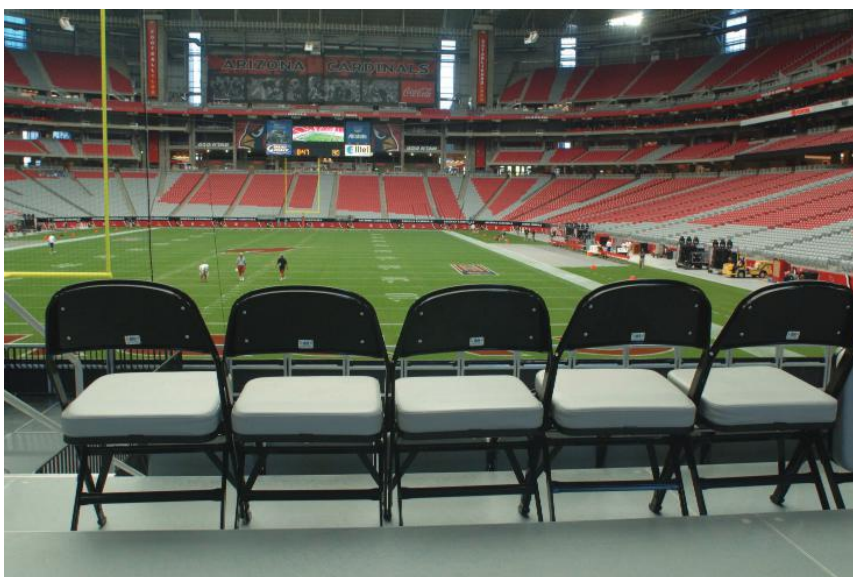
Green guide changes

As reported in SAM's October 2006 issue, the 'green guide' – officially titled the Guide to Safety at Sports Grounds – is also currently being updated for a first draft by mid-2007 and FLA Chief Executive John de Quidt told the UKSMA this autumn that areas for potential fine tuning may include seat sizes. Although the guide has no statutory force, many of its recommendations are given force of law at individual grounds through their inclusion in safety certificates. Moreover, the guide's leading advice has seen a number of its elements adopted around the world.

The current 4th edition states that for new construction a minimum seat width (as measured between seat centres) should be 460mm (40mm more if fitted with armrests) and a 700mm seating row depth. However, for comfort and accessibility it's recommended that these measurements are increased to at least 500mm and 760mm respectively, especially in circumstances where for example venue managers hope to facilitate easy movement to and from seats during an event – such as for purchasing refreshments.

Separate guidance, as part of the guide's section on spectator accommodation for those with disabilities, states for example that the design of wheelchair spaces should ensure a 1.4m depth with minimum width of 900mm. The green guide additionally addresses temporary demountable structures such as grandstands and makes reference to a separate document on this topic produced by The Institution of Structural Engineers.

Dr John Littler, Technical Manager at the Institution, points out that *Temporary demountable structures – guidance on design, procurement and use* is also currently being revised, with a 3rd edition due for publication in 2007. The Foreword to the 2nd edition reminds readers of the potential dangers, such as the 1100 spectators involved in the collapse of a demountable structure a minute into the opening number of a Pink Floyd concert at London's Earls Court in October 1994.



Unusual configurations should be viewed as opportunities to supply unique spectator viewpoints. Phoenix University Stadium, home of the Arizona Cardinals, has seating above the channel in which the turf field moves in and out of the stadium in a huge tray.

Common issues

Away from the area of standards development and guidance updates, what else is happening in the seating sector? BASES' Chairman Mark Cowley, whose 'day job' is Sales Director at Audience Systems, comments that several issues spring to mind. Firstly, he believes that manufacturers such as his are not involved at an early enough stage in terms of being able to positively influence operational considerations at new-build venues or refurbishment exercises. Providing some practical examples, he refers to the question of spectator sightlines, where it is possible to use seating geometry to vary the row rise to provide enhancements. By effectively pushing the spectators' backs forward their eyeline will

be inclined downwards towards the pitch, rather than a more reclined position where vision tends towards the opposite.

Other areas where he feels seating suppliers can assist include 'squaring the circle' in terms of meeting the effective working compromise between legal requirements for minimum distances between closed, or folded seats and the row in front, as well as ergonomics/comfort factors and the overall seating capacity requirements of each venue.

From a day-to-day operational viewpoint, Cowley refers to flexible seating configurations and the turnaround times involved: this means choosing between powered systems and the manual labour involved to achieve the same result. In addition, legislation affecting the disabled has changed in recent years. The

Disability Discrimination Act in the UK has affected design in terms of leading to more integration of disabled people within a venue. Venue managers must now consider requirements for disabled fans to be able to sit, for example, on the fifth row of a telescopic seating bank rather than a traditional slot on the floor of the venue – as would probably have happened only a few years ago.

Michael Burnett, MD of Ferco Seating, underlines the importance of seating being multi-functional so as to assist in revenue generation. Illustrating the point, he refers to the green guide's advice about assisting ambulatory movement among spectators. If there's no space there will be fewer concession sales because fans will be a lot less inclined to get up and move around. But besides the financial considerations, there is an important point to bear in mind regarding the proportion of women in the crowd.

Interesting research now available looks at how seating space restrictions discourage women from attending, which in turn can lead to greater levels of disturbance among male-predominated audiences. This relates to the

fight or flight experience in which, faced by confrontation scenarios, women are more inclined to flee a situation. So if they find the seating configuration does not easily allow them to rapidly exit they are less likely to attend future events.

In this context, says Burnett, he'd welcome a change in the green guide recommendations. A 460mm centre-to-centre minimum seat width is also increasingly unrealistic in the context of today's population trend towards larger body masses, he adds.

Meanwhile, providing an update on Ferco's provision of Box seating to Arsenal FC's Emirates Stadium, Michael Burnett reports that compared with the average 150-200 seats damaged at the club's former Highbury stadium per match (which equated to some 8-10% of the venue's 38,000 capacity seating each year) only three seats have been broken in the Emirates Stadium's first 12 matches.

Riding on the back of this success, Ferco has also now won an order to supply the 30,000-seater MK Stadium in Milton Keynes with its Box seat – installation is planned for December/January.

Raising the game

Referencing Emirates' experience, Restall Seating Systems' Stadium Seating Manager, Barry Cooper, states his company's belief that there's a market for a new standard of stadium seat. As a result, he adds, Restall is looking at the potential for modern plastics in terms of negating the traditional problems of steel frame rusting, as well as wider and deeper seats.

Following the company's takeover by Millstream (Production Engineering), Restall aims to build on its traditional strengths in the provision of fixed, permanent seating for facilities such as cricket (including next summer's World Cup), rugby and football grounds, as well as racecourses and other venues. It's also examining the potential for retractable seating for sports halls, exhibition and conference centres.

American feedback

Over in Arizona, Senior Vice President Steve Luttazi, of portable seating specialist Clarin Seating, points to an interesting application it's been involved with at the Arizona Cardinals Stadium, where the pitch rolls in under the stand. Pointing out that under naming rights the 7000-seat venue has since been called the University of Phoenix Stadium, he explains that Clarin's 4400 chair was supplied with an uplift cushion and specially pitched seat back with a steeper angle for the aisle passage between rows to meet local fire regulations.

A covered roof allows the use of air conditioning, so to ensure air and light reaches the pitch surface a three-foot deep platform containing the pitch can be rolled out of what's called the red zone and back into the stadium again later. Clarin can configure seating to meet the varying requirements for events such as college football, professional football games involving the Arizona Cardinals and the Superbowl in 2007. This is said to be easy to move using 'interbracket ganging', which makes the seating portable but solid.

The 4400 chair has a solid steel x-frame with a double tube channel that allows flexing to ensure it rests on an even surface. High density foam is attached to a plastic seat and back board and covered by waterproof marine grade vinyl using rot-proof thread. The frame itself is dipped in an 'E' coating for outside use weather protection and these measures allow Clarin to offer a five-year warranty against rust and a 12-year warranty on the chair.

All models in Clarin's range meet CAL 117 and 133 fire burn tests, adds Luttazi, the latter involving the entire component to test for gas/smoke emissions.

Qatar venues fitted out with a range of seating



Qatar brought the Asian Games to the Gulf Region for the first time for the 15th edition during December 2006. Seating was a major element in venue upgrades as well as the requirements of Khalifa Stadium, the all-new main stadium.

Figueras International Seating supplied spectator seating to Khalifa Stadium (pictured right), Doha Racing & Equestrian Club, Qatar Sports Club (pictured above), Al-Sadd Sports Club, Doha Women's Club, Khalifa Tennis & Squash Stadiums, Aspire Academy, Al-Arabi Sports Club, Al-Khor Sports Club and Al-Wakra Sports Club. The facilities, all of them with high end finishes, have different areas for the different purposes. The VIP areas are equipped with leather armchairs, the press area with padded seats and writing tables, the main area with resistant outdoor seats and for the indoor tribunes upholstered armchairs.

