

Book review

Stadium and Arena Design, 2nd edition

Peter Culley and John Pascoe (eds). ICE Publishing, London, UK, 2015, ISBN 978-0-7277-5790-6, £96-00, 256 pp.

For every engineer the concept of designing a large-scale stadium is both an enormous honour and a major headache because of the lack of guidance available. Modern stadia are the most complex of engineering challenges, with a multitude of different regulations to meet in countries around the world, involving close collaboration between all disciplines in order to achieve the ultimate goal.

Thanks to Rod Sheard, Geraint John and Ben Vickery, who wrote the book *Stadia: A Design and Development Guide*, architects have a tremendous stadium design guide all in one concise book. However, the complex issues that face the many engineering disciplines involved in stadium design have not been so clearly explained for engineers; but this is about to change. The new book edited by Culley and Pascoe is a gold mine of information, addressing the many issues involved in the engineering design of stadia.

The first edition focused on the use of steel in the design of stadia and long-span structures; that edition continues to provide sound advice and guidance to structural engineers, for which the reviewer is still proud to have been a contributor. So it was great to discover that this second edition has taken a major step change and, rather than being an update of the first, it has brought in a host of new contributors to expand the breadth of engineering considerations that face the designers of stadia today.

This edition provides a history of stadia and major sports venues from the Greeks and Romans through to modern times, including the

amazing construction projects in America and around the world created for major Olympics and other world events. The book covers the major issues of site selection, transport planning, security, and blast and fire engineering. It provides guidance on the use of the major structural materials used in stadia – steel, concrete and the advantages of precast concrete, as well as stainless steel and aluminium.

The book goes on to consider the tremendous benefits that engineering software packages provide in determining the likely environmental conditions within the events bowl for spectators and players, such as temperature, acoustics and lighting levels, which become particularly relevant when closing roofs are required.

This reviewer's only disappointment with the book is that many of the graphics are too small and in black and white, which gives the impression that the volume has been produced to a tight budget. Please do not be fooled by the graphics, the quality of the written contributions page after page is the best available today.

We live at a time when, as stadium designers, we must have a thorough knowledge of all the major new projects just created or under construction worldwide. Culley and Pascoe have done all the homework and hard work for us with this book.

There is no other design guide that provides the depth of detail and guidance relating to the engineering of stadia today. It is now a 'must have' technical guide for engineers who want to understand all aspects of stadium design in the UK.

Mike Otlet