

Preface

This is a time of rapid development in the field of structural fire engineering. Fire-resistant design and analysis is moving from a long-term reliance on prescriptive rules, design tables and simple analytical models towards the benefits of a performance-based model. This includes all areas of fire engineering; prediction of the behaviour of fires, transfer of heat to structural elements, and the structural response at elevated temperature.

Papers selected for this volume of Proceedings of the Conference *Applications of Structural Fire Engineering* held in Dubrovnik, Croatia on 15-16 Oct 2015, present a distillation of the current state of research development and applications of advanced performance-based design methods for concrete, steel and timber structures. Doctoral students, internationally-acknowledged researchers and specialists practitioners in design against fire were brought together by this Conference, giving them the opportunity to share current ideas and knowledge in both the background science and practical case studies. More than 100 participants had the opportunity to address major issues in keynote and plenary presentations, panel discussions and posters. The spectrum of relevant research themes covered encompasses fire modelling, heat transfer to structural elements, numerical modelling of thermo-structural behaviour at elevated temperatures, structural fire testing at elemental and structural scales, the development of simplified design methods, and studies based on development of the structural Eurocodes. Importantly in a developing field, practical design case studies demonstrating the ways in which performance-based structural fire safety design methods have already been applied to real projects, and the economic and safety implications of using these methods in place of the traditional prescriptive rules, were included.

The first three ASFE conferences were organised in Prague, Czech Republic on 19-20 February 2009, 29 April 2011 and 19-20 April 2013, with support from the COST TU0904 network "*Integrated Fire Engineering and Response*" (see <http://fire.fsv.cvut.cz/>). The next conference is tentatively scheduled to take place in Manchester, UK on 14-16 September 2017.

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