STRUCTURES IN FIRE FORUM – 5th Sept 2016

CSEC, Kings Buildings, University of Edinburgh

STRUCTURES IN FIRE FORUM

Provisional Agenda:

10.30 – 11.00 Coffee

"DRY FILM THICKNESS OF INTUMESCENT COATINGS FOR STRUCTURAL STEEL BRACING MEMBERS"
David Baron, International Paint
Bracing members are fundamental in preventing collapse of buildings in the event of a fire, however sections can be expensive to protect using passive fire protection products. This is due to the bracing members often having high section factors as a result of them being very slender. The current prescriptive guidance of the ASFP recommends that the section factor should be limited to 200 m^{-1} based on BS5950-8 which has now been withdrawn. Methods outlined in the Eurocodes have been used to propose a solid technical justification for prescriptively dealing with bracing members to potentially replace the guidance of BS5950-8.

"DEVELOPMENTS IN TASEF"
Kuldeep Virdi, City University London
The presentation will cover new features of TASEF. These include a user-friendly interface (TasefPlus) developed initially as a teaching aid. It will describe the work the second author did for SFPE in developing a standard verification scheme for Heat Transfer codes. Comparisons were made between results obtained using TASEF/TasefPlus and ABAQUS for several cases, for example, convective cooling. The paper will finish by picking up an example of 'Shadow' effect as modelled by TASEF/TasefPlus and subsequent mechanical analysis using results from TASEF.

"TENSILE MEMBRANE ACTION OF COMPOSITE SLABS IN FIRE – ARE THE CURRENT METHODS REALLY OK?"
Ian Burgess, Sheffield University

"THE FUTURE OF EC2-1-2" (working title)
Jenny Burridge, The Concrete Centre

13.00 – 14.00 Sandwich Lunch

"COLD-FORMED STEEL PORTAL FRAMES IN FIRE"
Ross Johnston, Hanna and Hutchinson Consulting Engineers
This presentation outlines the research into cold-formed steel portal frames in fire boundary conditions. Such frames account for a significant market share in Australia and are increasingly popular in the UK. Currently, design guidance only exists for hot-rolled steel portal frames in fire boundary conditions. A full-scale site test was carried out, with investigations extended to FE modelling. Design recommendations are presented in the form of recommended fire protection measures and a novel NLFEA shell model. Based on the research, a simplified mathematical model is proposed for inclusion in the SCI P313 guidance document to assist building control officers and designers alike.

"STRUCTURAL FIRE RESILIENCE"
Luke Bisby, University of Edinburgh
A look over what we mean by resilience compared to resistance, how fire resistance testing started and what it has come to mean, and the opportunities for structural fire engineers to improve the resilience of the built environment.

"CHALLENGES FOR STRUCTURAL FIRE PROTECTION STRATEGIES FOR MODULAR CONSTRUCTION"
Susan Deeny, Arup
Modular construction is seen as one of the solution to addressing the UKs housing shortage. The UK market is currently awash with stacking unit systems which cannot or are difficult to provide with traditional protection arrangements. This talk will cover some of the alternative structural fire protection strategies which have been developed and the key challenges for this type of structure.

15.30 Tea