

Award-winning paper in 2011

Papers published in *Forensic Engineering* are eligible for awards from the Institution of Civil Engineers. Papers from any of the ICE journals can be nominated for several awards. In addition, each journal has awards dedicated to their specific subject area.

On Friday 12 October 2012, ICE President Richard Coackley presented an award to the following paper published in *Forensic Engineering* in 2011. The editorial panel nominated their best papers and an awards committee chaired by Barry Clarke allocated the award.

Telford Premium Prize

The Telford Premium Prize, presented for the best paper on forensic engineering, was awarded to Torero (2011).

Abstract

Fire investigation has generally concentrated on determination of the cause and origin of a fire. Methodologies developed for this purpose have thus focused on the dynamics of fire growth and investigation of its effect on different objects within the structure affected by the fire. It is unusual to see a fire investigation emphasising structural damage as a way to obtain information for fire reconstruction. The series of dramatic fire events that

occurred on 11 September 2001 within the World Trade Center, New York complex have emphasised the need to introduce structural analysis as a companion to evaluation of a fire timeline. Only a combined analysis is capable of providing a complete reconstruction of the event and therefore a solid determination of causality. This paper presents a methodology to establish, by means of modern structural and fire analysis tools, the sequence of events leading to a structural failure. This analysis will be compared with classic cause and origin techniques, emphasising the importance of a comprehensive study. Specific structural features and fire conditions that lead to unique forms of failure will be discussed, establishing the complexity of linking fire, structure characteristics and failure mode. The collapse of buildings 1 and 2 of the World Trade Center will be used to illustrate different forms of failure and the fires that cause them.

REFERENCE

Torero JL (2011) Fire-induced structural failure: the World Trade Center, New York. *Proceedings of the Institution of Civil Engineers – Forensic Engineering* **164**(2): 69–77, <http://dx.doi.org/10.1680/feng.2011.164.2.69>.