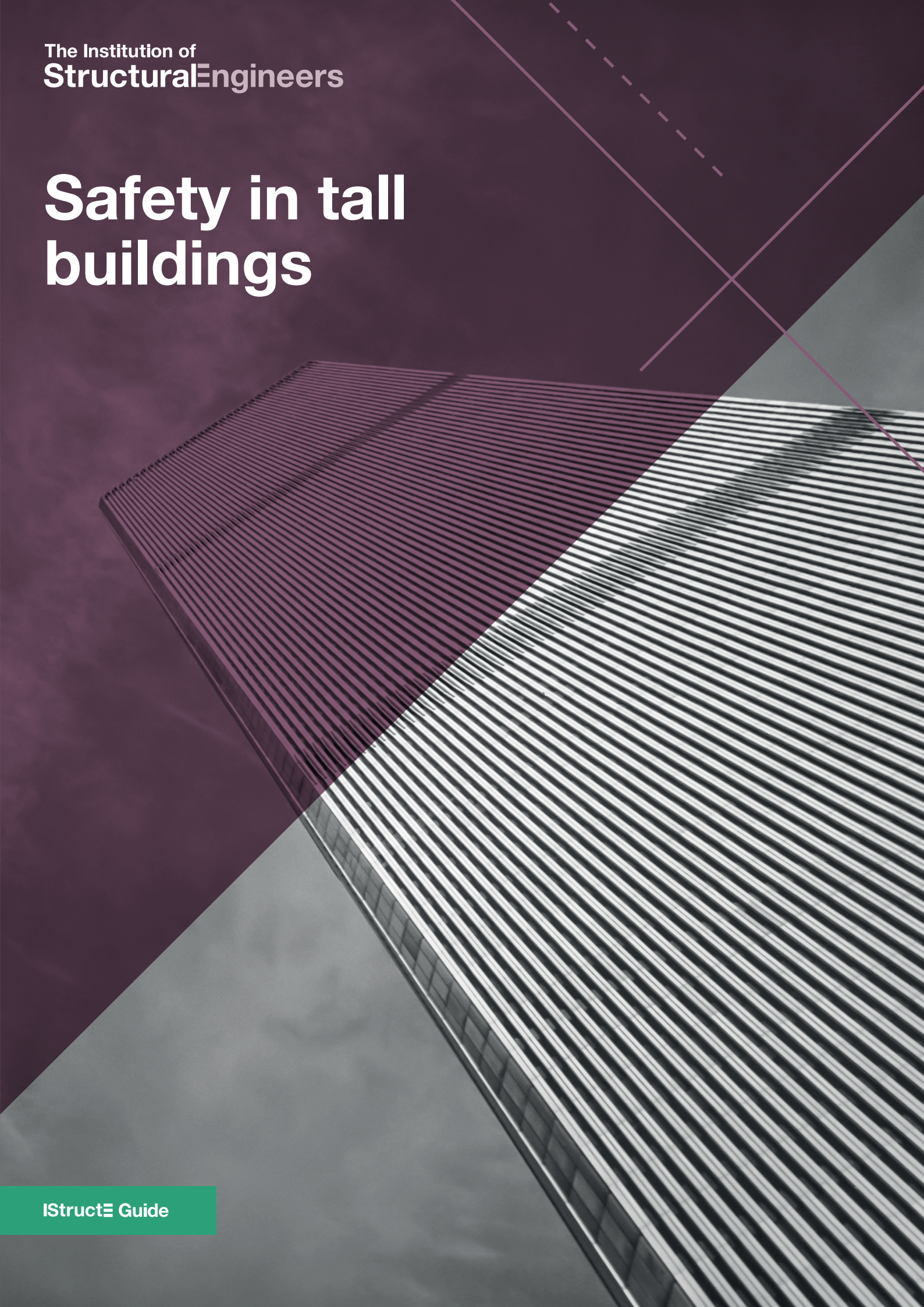
The Institution of Structural Engineers

Safety in tall buildings



IStructE Guide

Safety in tall buildings

and other buildings with large occupancy

Prepared by an international working group convened by
The Institution of Structural Engineers

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Foreword

The reality of threats to the safety of tall and large buildings was starkly demonstrated by the unprecedented events at the World Trade Center in New York on 11 September 2001. Had these events not occurred, the World Trade Center would no doubt have continued to give many years of excellent service. The buildings were not unsafe by any criterion hitherto regarded as being credible in peacetime.

This Report examines what can be learned from the extreme events of 11 September 2001 for the future design of new buildings and the appraisal of existing ones. The purpose is to assist owners and operators of tall/large buildings and their professional advisers to play their part in reacting to the new threats to the safety of building occupants. The Report presents therefore initial recommendations by the Working Group on 'Safety in Tall Buildings' following review of damage by extreme events to tall/large buildings at the World Trade Center and elsewhere world wide.

The Working Group has concentrated initially on gaining an overview of the safety issues arising from the events of 11 September 2001. The aim has been to point to directions for improving future provisions for occupant safety in tall/large buildings. The resulting initial recommendations are in no way a panacea for dealing with threats to the building infrastructure. Rather they indicate possibilities that require consideration and study.

There are many ways to inflict heavy blows of death and destruction in cities. For society as a whole, the most effective measures that can be taken following the events of 11 September 2001 are those related to improving security in cities (especially around high 'profile' tall/large buildings, landmarks and infrastructure), preventing terrorists from gaining control of means to make attacks, and the deeper resolution of conflicts that breed resentment and create the environment in which terrorism flourishes.

The solutions to reducing the probability of a recurrence of extreme events, such as occurred on 11 September 2001, do not lie within the gift of building owners and construction professionals. This Report, nevertheless, seeks to contribute to public safety by providing recommendations to assist building owners and their professional advisers to provide buildings and infrastructure better able to sustain any future malicious attacks with a reduced risk of loss of life. Much further work and international collaboration amongst construction professionals and others is needed to assist building owners and their professional advisers to optimise occupant safety in extreme events.

I would like to thank members of the Working Group and others, around the world, who have collaborated and contributed generously to the preparation of this Report. I would also particularly like to thank John Menzies for preparing drafts of the report for the Working Group.

John Roberts
Chairman
July 2002