

# Structural Design for Physical Security

**Task Committee on Structural  
Design for Physical Security**

Edited by Peggy Van Eepoel, P.E.,  
and Sharon M. Gallant, P.E., S.E.



STRUCTURAL  
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# Structural Design for Physical Security

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Blast, Shock, and Impact Committee of the Dynamic Effects  
Technical Administration Committee of the Structural Engineering  
Institute of the American Society of Civil Engineers

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# PREFACE

## BACKGROUND

The first edition of this book was published in 1999 during the aftermath of the bombing attacks on the World Trade Center in New York City in 1993 and on the Alfred P. Murrah Building in Oklahoma City, Oklahoma, in 1995. These terrorist events and others worldwide created a need for structural engineers to protect a much broader portfolio of facility types against hostile acts, including threats posed by criminals, terrorists, and subversives. Although many US military and other government entities have had methodology and criteria documents, they were primarily restricted to official use only. The goal was to provide a widely available document to structural engineers so they may better understand the design of structures with enhanced physical security.

Since 1999, the United States has been subject to significant terrorist events, the most impactful being the 2001 airplane attacks on the World Trade Center in New York City and at the Pentagon in Arlington, Virginia. In the two decades that followed, there have been ongoing wars related to international and domestic terrorism and evolving threats involving bombings, hostile vehicle rammings, active shooters, civil disturbance, and chemical–biological attacks. The constant change in aggressor profile, threat tactics, and types have led to the need for flexible and adaptable physical security designs that account for these new considerations and anticipate future environments, with flexibility and adaptability being priorities. Physical security considerations are now applied to select municipal facilities, cultural venues, hospitals, stadiums, schools, places of worship, and other “soft” targets that previously had no precedence to necessitate protection against attack.