



# Current Trends in Performance Based Wind and Seismic Design for Tall Buildings

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## **Abstract:**

The Performance-Based Design (PBD) approach offers a deeper understanding of the likely performance of a building that allows for unique architectural design that may not be possible to achieve following prescriptive code design. The most common use of PBD in practice is to substantiate exceptions to specific prescribed code requirements, such as height limits on select structural systems. A second use of PBD is the ability to demonstrate higher performance levels for a structure at various intensities of a wind or seismic event. Lastly, the PBD methodology utilizes the probable site-specific hazard demands.

The current trends of how a performance-based design is accomplished are presented. The topics covered include an overview of the performance-based design philosophy, the primary guidelines utilized in the execution of a PBD, performance objectives and hazards considered, and the associated analysis requirements. Emphasis will be given to the aspects of implementing PBD on building projects that typically do not arise in a prescriptive design.

## **Bio:**

Jeff Dragovich leads the Applied Technology and Research group at DeSimone Consulting Engineering. His 30 years of professional experience includes seismic design of reinforced concrete structures, performance-based wind and seismic design, nonlinear analysis and software development. He received his B.S. in civil engineering from Seattle University, and his M.S. and PhD from the University of Illinois at Urbana-Champaign.

In addition to his experience in industry and academia, he worked as a research structural engineer in the National Earthquake Hazards Reduction Program at the National Institute of Standards and Technology. He is a licensed civil and structural engineer in California and Washington and is a Fellow of the American Concrete Institute. His professional organization code development contributions include 318-31 (Structural Concrete Code), 318-H (Seismic Provisions), 318-C (Safety, Serviceability, and Analysis) and 369S (Seismic Evaluation and Retrofit Code). He is currently the Secretary for the Structural Engineering Institute (SEI) PBD committee.



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1310 Yeh Student Center