SOREN PETERSEN

Wind and Seismic Engineer

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SUMMARY

Specialized Wind and Seismic Engineer PE with 10 years at Arup and Degenkolb Engineers performing performance-based seismic design and wind tunnel testing coordination for $2B+ in projects. Reduced seismic design forces by 22% through advanced nonlinear analysis, led wind tunnel program for 12 high-rise towers, and developed seismic risk assessment framework adopted across 8 firm projects. PE/SE licensed.

EXPERIENCE

Feb 2018 - Present
San Francisco, CA

Wind and Seismic Engineer

Arup

Specialized seismic and wind analysis for high-rise and critical facility projects.

- Led performance-based seismic design for $480M 52-story residential tower; nonlinear analysis reduced seismic design forces by 22% vs. prescriptive code approach, saving $3.8M in structural cost
- Coordinated wind tunnel testing program for 12 high-rise projects at 3 wind tunnel laboratories; integrated test results into ETABS analytical models
- Developed ground motion selection and scaling protocol adopted as firm standard for SDC D+ projects; implemented on 8 projects generating $1.2M in efficiency savings
- Performed seismic hazard analysis and fault rupture studies for 4 critical facilities; provided MCER and MCEr spectral accelerations for site-specific response spectra
- Authored 2 EERI conference papers on performance-based wind design of long-period structures

Jun 2013 - Jan 2018
San Francisco, CA

Associate Structural / Seismic Engineer

Degenkolb Engineers

Performed seismic retrofit design and assessment for existing buildings.

- Designed ASCE 41-based seismic retrofit for 24-story 1970s concrete moment frame building; $14M retrofit cost vs. $42M estimated replacement cost
- Performed rapid visual screening (RVS) of 340 buildings for SF DBI post-earthquake assessment program

SKILLS

Performance-Based Seismic Design | PERFORM-3D / Nonlinear Analysis | Wind Tunnel Testing Coordination | Seismic Hazard Analysis (PSHA) | ASCE 41 Seismic Retrofit | Ground Motion Selection & Scaling | ETABS / SAP2000 | ASCE 7-22 / CBC 2022

EDUCATION

Sep 2011 - Jun 2013
Berkeley, CA

Master of Science

University of California, Berkeley

Earthquake Engineering

Aug 2007 - May 2011
West Lafayette, IN

Bachelor of Science

Purdue University

Civil Engineering