

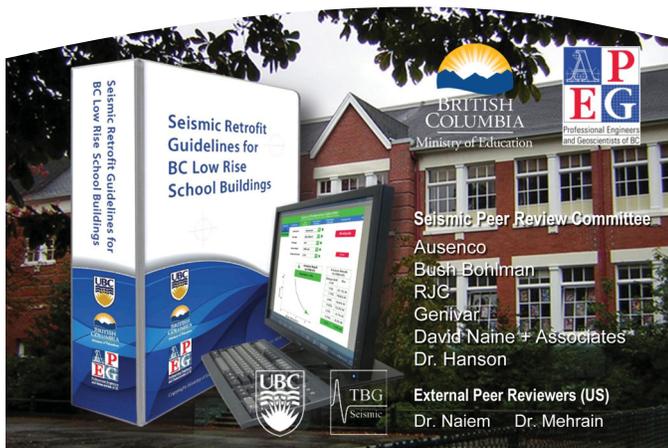


2013 AWARDS FOR ENGINEERING EXCELLENCE

Lieutenant Governor's Award for Engineering Excellence

Seismic Retrofit Guidelines

for the Performance-based Seismic Risk Assessment and Seismic Retrofit Design of BC School Buildings



Consultant

Ausenco

with Bush, Bohlman & Partners Ltd.; GENIVAR and
Read Jones Christoffersen Ltd.

Owner

BC Ministry of Education

Client

The Association of Professional Engineers and
Geoscientists of British Columbia

Category

Soft Engineering

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In 2004 the Ministry of Education (MEd) initiated a \$1.5B seismic mitigation program for public school buildings.

MEd retained the Association of Professional Engineers and Geoscientists of BC to manage the development of new, innovative, performance-based technical guidelines for structural engineers to use in seismic risk assessments and to produce cost-effective retrofit designs.

A unique collaboration between government, academia and the engineering community evolved, including:

- research, testing, and analysis (University of British Columbia);
- ongoing review, retrofit details and strategies, confirmation of consultant "usability" of the Guidelines (Seismic Peer Review Committee (SPRC), comprised of structural engineers, members of ACEC-BC);
- participation of two prominent US structural/seismic engineers for External Peer Review.

Interim guidelines were released in 2005 and 2006, followed by the 1st Edition in 2011. The 2nd Edition (draft) was issued in 2012 with full release scheduled for 2013. The SPRC had direct involvement in all releases, including training of the structural engineering community.

The Guidelines consist of a 300+ page manual and a companion tool - a unique state-of-the-art web-based Seismic Performance Analyzer. This Analyzer accesses a database containing millions of non-linear incremental dynamic analyses for different structural systems and high-risk partition walls, evaluated for earthquakes expected to occur in BC. Users can rapidly and with province-wide consistency determine the seismic risk of an existing building, and optimize the extent of new structure required to achieve "life-safety" seismic performance.

This ground-breaking work, with key involvement by ACEC-BC firms, has been recognized both nationally and internationally by leaders in this field.