

WSSPC Awards in Excellence 2003

Award Category: Mitigation Efforts (1 of 3 Winners)

Program Name: Seismic Design Criteria of Non-Structural Systems for New and Existing School Facilities

Administering Agency: Salt Lake City School District

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Beginning in 1989, the Salt Lake City School District Board of Education recognized the need to improve the seismic safety of District schools. Since then, the Board of Education has twice appealed to the voters of Salt Lake City for bond authorizations totaling \$206 million. Combined with an additional \$200 million in capital monies and overwhelming voter support, the Board has embarked on an accelerated plan to rebuild or retrofit all thirty eight District schools over a fifteen year period to a higher seismic standard than was required by prevailing building codes.

The Salt Lake City School District's Seismic Design Criteria of Non-Structural Systems for New and Existing School Facilities was developed in response to the realization that much of damage and subsequent loss resulting from a seismic event is caused by the non-structural elements associated with a facility. This fact is well known and has been addressed numerous times through the efforts of many agencies. However, a review of this information and commonly accepted practices revealed that most design practitioners do not have readily available information that would allow them to provide mitigation solutions for the non-structural elements found in most projects. While much of the currently available information adequately identifies various non-structural hazards it fails to provide the necessary engineering details required to actually implement a comprehensive mitigation solution. The Salt Lake City School District recognized this fact and determined a better approach was needed.

During this time many school districts were applying for funds to implement capital improvements for mitigation projects from the Federal Emergency Management Agency's (FEMA) Project Impact program. The Salt Lake City School District, however, decided to apply for funding for the development of the District's proposed Seismic Design Criteria of Non-Structural Systems since this approach was perceived to have a greater long term benefit and even more so since the District was currently involved in rebuilding or retrofitting all of its facilities. Under the direction of Mr. Gregg Smith, P.E., Director of Buildings and Grounds, the District was successful in soliciting \$40,000 in grants from both FEMA and FEMA's Project Impact program. Mr. Smith then contracted with ABS Consulting, formerly known as EQE International, to develop the Seismic Design Criteria of Non-Structural Systems documentation. The focus of the effort was to create a document which would aid architects and consulting engineers during the design process and provide them with viable seismic mitigation solutions that could be incorporated directly into their drawings and construction documents. The scope of work required the consultant (EQE) to first survey select facilities to determine the range and variation in non-structural elements that posed a hazard during a seismic event and then develop possible mitigation solutions to address these hazards including standardized details complete with calculations where appropriate that met or exceeded any applicable code or standard requirement.

The result of this development effort was the District's Seismic Design Criteria of Non-Structural Systems for New and Existing School Facilities. This document is distributed on CD-ROM to members of the District's various design teams for each new or remodel project with the expectation that every effort will be made to voluntarily incorporate as many as possible of the seismic design guidelines into the respective construction documents.

