

# CSU Seismic Review Board

## ■ 1998 /1999 Annual Report

This report was originally submitted as a consent item as we have historically done.

In light of the recent LA Times article on seismic safety in California's K-12 schools, it seemed appropriate to give a more substantial presentation of the Board's seismic safety program.

We have been evaluating the seismic safety of our facilities for some time, and in fact completed some seismic retrofits during the 80s .

It should be noted that CSU's buildings have always been built in compliance with the seismic provisions of the building codes in effect at the time of their construction.

As far back as 1981 CSU state owned facilities were the subject of a statewide seismic safety review by the State Seismic Safety Commission

## June 1990 Governor's Executive Order

- ...seismic safety shall be given priority consideration... in the design and construction of all state structures
- ...the CSU shall give priority consideration to seismic safety in the allocation of resources...

Largely in response to the Loma Prieta earthquake, which showed that many parts of the state's infrastructure were in serious risk of earthquake damage, Governor Deukmejian issued his June 1990 Executive Order on Seismic Safety.

That order prescribed that seismic safety be given a priority consideration in the design and construction of state facilities, and that further, agencies, the CSU being specifically noted, also give priority in their resource allocation to addressing these issues.

## Trustees' Policy On Seismic Safety, May 1993

- Build, Maintain, And Rehabilitate Buildings And Other Facilities That Provide An Acceptable Level Of Earthquake Safety
- Existing Construction Provides Reasonable Life Safety Protection, Consistent With That Typical For New Buildings
- Perform Independent Technical Peer Reviews Of All Construction Projects

Of far greater importance than any response to a specific mandate, was the Trustee's comprehensive policy on seismic safety.

This policy both established preserving occupants life safety as the objective of the seismic program, and established a mechanism for ensuring that objective was met.

## The Seismic Review Board

- Outstanding Technical Expertise
- Focus on Life Safety
- Independent Peer Reviews
- Seismic Assessment of Facilities
  - The List of 101

The creation of the CSU Seismic Review Board was perhaps the most insightful piece of the program.

This panel of top flight independent structural engineers provides the technical expertise that both ensures our seismic safety assessments are done in keeping with the highest standards of the engineering profession, it also provides a mechanism for an ongoing evaluation of new technologies, codes, and understandings of seismic events.

## The CSU Retrofit Program

- 101 Seismic Risks Originally Identified
- 73 Resolved
- \$79 Million Spent to Date

The original report identified 101 immediate seismic safety risks. Funding seismic retrofits as a priority capital outlay, 73 of those buildings have been retrofitted, or in a few cases, determined safe based on a detailed engineering review.

When the original SRB assessment was presented to the board, the retrofit of these buildings was presented to the board as representing a 10 year program to completion. We are well on track to having all of those seismic safety risks that were identified in that program within that timeframe.

It should be noted though that the Seismic Review Boards list of seismic safety issues is a dynamic one, and projects have been added to it, and will continue to be added to it as developments in the seismic safety of buildings change the engineering profession's assessment of what comprises an earthquake risk in a structure.

## Continuing Issues

- Evaluating Code & Technology Changes
  - The 94 Northridge Earthquake
- Continuing Assessments
  - 53 Investigations/Retrofit Designs Underway

As anyone living in California probably already knows, every new earthquake expands our knowledge of how buildings perform during one, and the codes and engineering practices continue to evolve to achieve better life safety performance in our buildings.

Examples:

Welded Steel Moment Frames

Vertical Earthquake Loads

Increased Lateral Loads

The SRB purview currently includes 57 active projects, these include buildings awaiting retrofits, and new studies of potential life safety risks among our facilities.

## The Impact of the SRB

- Authoring Seismic Code Language
  - UBC Division 3R
- Develop Technical Standards
  - Steel Moment Frame Connection Details
- Support Outside Agencies
  - CA State Architect & Community Colleges

The impact of CSU's Seismic Review Board Extends well beyond the University. Our technical peer review process is now a requirement for all state buildings with code language, Division 3R in the CBC, created to directly emulate our assessment and review process.