

The Future of the Field Act for Public Schools (17280 & 81130 *et seq* Education Code)

Introduction

The Field Act was enacted on April 10, 1933, one month after the Long Beach Earthquake in which “70 schools were destroyed, 120 schools suffered major damage, and 300 schools received minor damage.”(Meehan and Jephcott, 1993)

“Because schools are funded with public money, schools house the children of the electorate, legislative statutes require children to attend schools, and the school buildings performed so poorly in the earthquake, it was believed that the legislators, including the Governor, would support legislation requiring public school buildings to be constructed earthquake resistive.”
(Meehan and Jephcott 1993 quoting Willett and Durkee, 1957)

The Field Act and its regulations have been updated many times since its inception. It continues to be one of the most effective earthquake risk reduction measures undertaken by California. The superior performance of public schools in modern earthquakes and their critical role as disaster relief facilities repeatedly demonstrates the Act’s effectiveness.

In 1976 public schools built before the Field Act were phased out of use or retrofitted to comply with the Act. Private Schools built or altered after 1986 must now comply with similar legislation enforced by local governments. (Section 17320 *et seq* Education Code)

However, the Field Act - and particularly its 1.5 to 4 percent construction premium [13, 14] and extra time required for compliance - is perennially under criticism by some policymakers, developers and school officials. Furthermore, local government building officials would like to be allowed the opportunity to enforce the Act in a manner similar to private schools.

Seismic Safety Commission Efforts to Evaluate the Field Act

Recognizing the continuing need to reassess and modernize the Act to include advances in social, economic, and technical knowledge, the California Seismic Safety Commission (CSSC) held two public hearings in 1998 to solicit advice and recommendations on the future of the Field Act program. An *ad hoc* committee developed the attached findings and recommendations based on the hearings and Commission discussions.

Field Act Purpose:

To protect children and staff from death and injury in public schools grades K – 14 and protect the public’s investment in school buildings during and after earthquakes.

Seismic Safety Commission Findings:

- 1) It is justifiable to expect K-14 schools to be designed and built to a higher standard for the protection of life and public investment.
- 2) Evidence exists from recent earthquakes such as Northridge, Landers, and Loma Prieta that K-14 facilities perform better than buildings built to age comparable local codes.
- 3) Continuous inspection by the inspector of record is a key element to the success of the Field Act.
- 4) Field Act authority should remain with the Division of the State Architect (DSA). Local code enforcement agencies should be allowed to plan check public schools if certified and technically supervised by DSA.

Seismic Safety Commission Recommendations:

The CSSC recommends that the following be implemented by legislative, regulatory and administrative changes (no priority has been set at this time):

- a) Identify older Field Act Schools that are at risk of collapse if subjected to strong earthquake shaking. These are schools built to outdated seismic design standards, or with deterioration or modifications that compromise their seismic resistance. School districts should be required to identify, retrofit or phase out of use structures that pose significant risks to life in accordance with DSA guidelines and procedures.
- b) Grant stop-work authority to DSA to ensure effective code enforcement for all public school construction.
- c) Grant red tag authority to DSA for rapid post-disaster damage assessment, emergency management and recovery.
- d) Require complete code enforcement for mechanical, electrical, plumbing and architectural systems in new public school construction as currently required by the model codes for all other occupancies. This could perhaps be accomplished in cooperation with local building departments.
- e) Eliminate Field Act exemptions for charter schools and exemptions for small modernization projects currently allowed by the Field Act.

- f) Require all school districts to evaluate nonstructural elements and abate unacceptable falling risks when undertaking major alterations, additions, renovations, or repairs, or in any event, no later than 2010. Require DSA to adopt mandatory retrofit standards for nonstructural falling risks. Train personnel at every school district facilities office to recognize and abate nonstructural risks.
- g) Implement effective maintenance programs within each school district to mitigate dryrot, roof leakage, and other serious maintenance needs that reduce seismic integrity. Require building evaluations of each school by an architect or structural engineer at least every 10 years.
- h) Require DSA to evaluate in a timely manner the qualifications of any local agency desiring to plan check public schools, and, if they are qualified, to supervise them in the same manner as outside consulting engineers are presently supervised.
- i) Strengthen the Private Schools Seismic Safety Act of 1986 (Section 17320 *et seq* Education Code) to eliminate exemptions, publish regulations in the California Building Code and require compliance by new day care facilities.
- j) Support benefit/cost studies to evaluate the effectiveness of higher construction costs for public school buildings as identified in the 1992 Little Hoover Commission's Report titled "No Room for Johnny".

References

- 1) *Turning Loss to Gain – Northridge Earthquake*, Seismic Safety Commission, SSC 95-01, 1995.
- 2) *Compendium of Background Reports on the Northridge Earthquake*, Seismic Safety Commission, SSC94-08, 1994.
- 3) Earthquake Engineering Research Institute, various post-earthquake reconnaissance reports
- 4) Division of the State Architect, various post-earthquake reconnaissance reports
- 5) *Loma Prieta's Call to Action*, Seismic Safety Commission, SSC 91-06, 1991.
- 6) *The Field Act and California Schools – Arthur E. Mann*, Seismic Safety Commission, SSC 79-02, 1979.
- 7) *Field Act Public Schools – A Need for Safety Reviews*, Gary McGavin and Vilas Mujumdar, unpublished paper 1998.
- 8) *Issues Which Effect the Role of Building Departments in Earthquake Hazard Mitigation*, International Conference of Building Officials, 1980.
- 9) *The Review and Analysis of the Experience in Mitigating Earthquake Damage in California Public School Buildings*, John F. Meehan, Donald K. Jephcott, National Science Foundation, BCS-9117732, 1993.
- 10) *1971 San Fernando Earthquake*, National Oceanic and Atmospheric Administration, 1973.
- 11) *Private Elementary and Secondary Schools and Earthquake Safety*, Seismic Safety Commission, Sept 1984, SSC 84-01.
- 12) *Northridge Earthquake Building Case Studies*, Seismic Safety Commission, SSC 94-06, 1994.
- 13) *The Field Act/Uniform Building Code Comparison*, Alan Williams, October 1997 Coalition of Adequate School Housing Newsletter.
- 14) *No Room for Johnny: A New Approach to the School Facilities Crisis*, Little Hoover Commission, June 1992.