BUILT TO RESIST EARTHQUAKES ATC/SEAOC Training Curriculum: The Path to Quality Seismic Design and Construction

Prepared by

ATC/SEAOC JOINT VENTURE (A Partnership of the Applied Technology Council and the Structural Engineers Association of California) 555 Twin Dolphin Drive, Suite 550 Redwood City, California 94065

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ATC is guided by a Board of Directors consisting of representatives appointed by the American Society of Civil Engineers, the National Council of Structural Engineers Associations, the Structural Engineers Association of California, the Western Council of Structural Engineers Associations, and four at-large representatives concerned with the practice of structural engineering. Each director serves a three-year term.

Project management and administration are carried out by a full-time Executive Director and support staff. Project work is conducted by a wide range of highly qualified consulting professionals, thus incorporating the experience of many individuals from academia, research, and professional practice who would not be available from any single organization. Funding for ATC projects is obtained from government agencies and from the private sector in the form of taxdeductible contributions.

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(A Partnership of the Applied Technology Council and the Structural Engineers Association of California)

The ATC/SEAOC Joint Venture was formed in 1997 to conduct the California Seismic Safety Commission Product 4.1 project, "Seismic Safety Continuing Education of Building Design and Code Enforcement Professionals," part of the Proposition 122 Seismic Retrofit Practices Improvement Program.

Joint Venture Management Committee

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It is the mission of the Structural Engineers Association of California (SEAOC) to advance the structural engineering profession; to provide the public with structures of dependable performance through the application of state-of-the-art structural engineering principles; to assist the public in obtaining professional structural engineering services; to promote natural hazard mitigation; to provide continuing education and encourage research; to provide structural engineers with the most current information and tools to improve their practice; and to maintain the honor and dignity of the profession.

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Preface

In August 1997 the ATC/SEAOC Joint Venture, a partnership of the Applied Technology Council (ATC) and the Structural Engineers Association of California (SEAOC) was awarded a 23month contract by the California Seismic Safety Commission (CSSC) to develop a program for "Seismic Safety Continuing Education of Building Design & Code Enforcement Personnel." Funding for the project was provided by the Proposition 122 Seismic Retrofit Practices Improvement Program.

The primary product of the project was this training curriculum notebook, *Built to Resist Earthquakes—The Path to Quality Seismic Design and Construction of Buildings for Architects, Engineers, and Building Officials*, which is intended to serve as a resource for continuing education. The curriculum consists of several hundred pages of training materials pertaining to the seismic design and retrofit of (1) woodframe buildings, (2) concrete and masonry construction, and (3) nonstructural components. Included are:

- Six multi-part, two-color Briefing Papers — concise, easy-to-read summary overviews of important issues and topics intended to facilitate improvement in the quality of seismic design, inspection, and construction;
- Detailed, illustrated, instructional material (lessons) describing how to improve the quality of seismic design, inspection, construction and retrofit; and
- Job Aids check lists and other tools to facilitate job performance, including construction observation, special inspection, and quality assurance procedures.

During the project the ATC/SEAOC Joint Venture also conducted a "Workshop on Roles and Responsibilities of Architects, Building Officials, and Engineers in the Building Seismic Design, Construction, and Retrofit Process" (summarized in Briefing Paper 2) and commenced a series of "Continuing Education Training Seminars on Improving the Quality of Building Seismic Design and Construction." The initial pilot seminars were held on June 17 and June 21, 1999 in Concord and the City of Commerce, California, respectively.

The ATC/SEAOC Joint Venture gratefully acknowledges the numerous individuals involved in the project. Christopher Rojahn and Allen Goldstein served as Project Manager and Deputy Project Manager, respectively. Detailed developmental work was carried out by: James Russell, who served as manager for curriculum development and lead consultant for building regulatory curriculum development; Craig Comartin, who served as lead consultant for design professional curriculum development; Kit Wong, who served as curriculum and technical publications development consultant; Ryan Yee, who served as an educational consultant; and five curriculum development consultants: Eric Brown, Kelly Cobeen, Richard Drake, Tim McCormick, and Evan Reis. Technical overview and guidance were provided by the ATC/SEAOC Joint Venture Technical Advisory Panel, which consisted of Donald Clark, Gary McGavin, Richard Phillips, Scot Stedman, Tim Steenson, and Eric Tolles. Project oversight was provided by the California Seismic Safety Commission Oversight Panel, which consisted of Lowell Shields (Chairman), Ross Cranmer, William Gates, Robert Hamilton, Fred Herman, Wilfred Iwan, Roy Johnston, David Martinez, Frank McClure, Joel McRonald, Steve Patterson (past panel member), Stuart Posselt, Daniel Shapiro, Patricia Snyder (ex-officio), and Fred Turner (ex-officio). Briefing Paper, curriculum, and Job Aid production was carried out by A. Gerald Brady, Peter Mork, and Michelle Schwartzbach of the ATC

office, and Kit Wong and Tiffany Calvert of Vickerman-Zachary-Miller/Transystems. Christopher Arnold, John Henry, Timothy McCormick, Evan Reis, James Russell, and Joe Uzarski served as speakers in the initial pilot training seminars held in June 1999. Lori Campbell, Cheryl Jodar, Patricia Mork, and Bernadette Mosby provided administration and coordination services for all aspects of the project, including the training seminars. The ATC/SEAOC Joint Venture also gratefully acknowledges Henry Reyes, Seismic Safety Commission Project Officer, for his insight, input, and patience throughout the project.

Christopher Rojahn, Chairman ATC/SEAOC Joint Venture Management Committee

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