

# ATC NEWS BULLETIN

Applied Technology Council, A Nonprofit Corporation  
Advancing Engineering Applications for Natural Hazard Mitigation  
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## ATC OPENS OFFICE IN WASHINGTON, DC

In November 1999, the Applied Technology Council (ATC) opened an East Coast office in Washington, DC. The new office, located in the recently completed International



1300 Pennsylvania Avenue  
Washington, DC

Trade Center building at 1300 Pennsylvania Avenue, will provide direct access to and services for a range of federal, state, and private sector agencies involved in natural hazards mitigation. Ian M. Friedland, who was recently hired by ATC as Associate Director for Development, will head the office.

Before joining ATC, Ian, a registered Professional Engineer, was employed as Assistant Director for Transportation Research by the Multidisciplinary Center for Earthquake Engineering Research (MCEER), State University of New York at Buffalo, where he managed MCEER's \$26-million research and development program on the seismic vulnerability of highway systems and components.

As Associate Director for Development, Ian will administer, manage,



Ian Friedland  
Associate Director for Development

and direct technical research and development projects for ATC, as well as manage the ATC Washington, DC office. ATC's Washington office address is: 1300 Pennsylvania Avenue, NW, Suite 700, Washington, DC 20004. Ian can be reached by phone at (202) 204-3011 and by fax at (202) 204-3012, or via e-mail at [ifriedland@atcouncil.org](mailto:ifriedland@atcouncil.org).

## ATC CONDUCTS SEMINARS IN HAWAII ON POST WIND STORM AND FLOOD SAFETY EVALUATION OF BUILDINGS

From October 25 through October 28, 1999 the Applied Technology Council conducted a series of four pilot seminars in Hawaii on the ATC-45 "Procedures for Post Wind Storm and Flood Safety Evaluation of Buildings." The one-day-long seminars were held on Kauai (October 25), Oahu (October 26), Maui (October 27) and the island of Hawaii (October 28).

The seminar program included six hours of lectures, covering all aspects of the ATC-45 procedures as well as an overview of hurricane attributes, effects, and damage.

Edwin Huston of Smith & Huston, Seattle, Washington and Arthur Chiu, University of Hawaii, were the principal seminar lecturers. Funding was provided by Hawaii State Civil Defense (HSCD), and Mr. Brian Yanagi (HSCD) was the local organizer. Approximately 140 persons attended the seminars.

The ATC-45 procedures are based on material presented in the ATC-20 report, *Procedures for Postearthquake Safety Evaluation of Buildings* (published by ATC in 1989), the ATC-26-2 report, *United States Postal Service Procedures for*

*Postdisaster Safety Evaluation of Postal Facilities (Interim)*, its companion ATC-26-3A *Field Manual: Post Flood and Wind Storm Safety Evaluation of Postal Buildings*, and the ATC-20-2 Report, *Addendum to the ATC-20 Procedures for Postearthquake Safety Evaluation of Buildings*.

ATC plans to publish the ATC-45 *Field Manual: Procedures for Post Wind Storm and Flood Safety Evaluation of Buildings*, in 2000.

Visit our web site at  
[www.atcouncil.org](http://www.atcouncil.org)

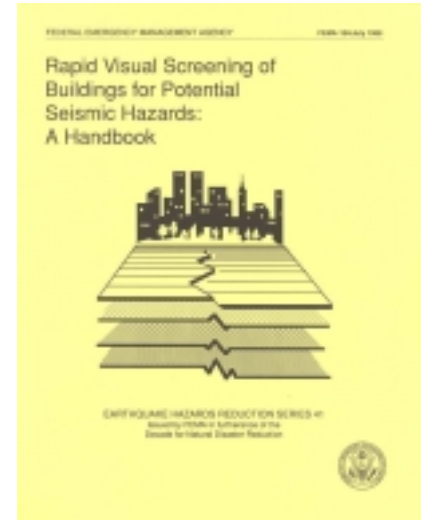
## NEW ATC PROJECTS

### **Update of ATC-21 Handbook for Rapid Visual Screening of Buildings for Potential Seismic Hazards**

In September 1999, with funding from the Federal Emergency Management Agency (FEMA), ATC commenced a 2-year project to update the FEMA 154 Report, *Rapid Visual Screening of Buildings for Potential Seismic Hazards: A Handbook*, which has been widely used since its publication in 1988. Prepared under the ATC-21 Project, the FEMA 154 *Handbook* provides a standard rapid visual screening procedure to identify those buildings that pose potentially serious risk of loss of life and injury, or of severe curtailment of community services, in the event of a damaging earthquake. Buildings identified as potentially hazardous by this procedure would require further evaluation by a design professional to confirm if, in fact, the buildings are hazardous.

The goal of the ATC-21 Update Project is to improve the technical basis for the FEMA 154 *Handbook* and its ease of use. The technical improvements will be based on new knowledge from seismic hazard mapping, new data on the seismic performance of buildings obtained since publication of the FEMA 154 *Handbook* in 1988, and survey results from buildings that have been evaluated using both the FEMA 154 *Handbook* and the detailed procedures of the *NEHRP Handbook for the Seismic Evaluation of Existing Buildings* (FEMA 178).

Improvements in technical content, overall presentation, and ease of use will also be based on voluntary input received from individuals and organizations who have applied the rapid visual screening



procedure on buildings within their jurisdiction or communities.

ATC Executive Director, Christopher Rojahn, is Principal Investigator (PI) on the project. Charles Scawthorn, EQE International, Oakland, is Co-PI and Project Director.

#### **Other Major Ongoing ATC Projects**

- **ATC-35 Project:** Program to Transfer U.S. Geological Survey Engineering Seismology Research Results to Engineering Design Practice (funded by the U.S. Geological Survey)
- **ATC-39 Project:** Development of a Homeowner's Guide for Seismic Rehabilitation of Masonry Dwellings (funded by the Institute for Business and Home Safety (IBHS))
- **SAC Phase 2 Project:** Program to Reduce Earthquake Hazards in Steel Moment-Frame Structures (conducted by a joint venture partnership of the Structural Engineers Association of California, ATC, and California Universities for Research in Earthquake Engineering; funded by FEMA)
- **ATC-45 Project:** Development of Procedures for Post Wind Storm and Flood Safety Evaluation of Buildings (funded by ATC and IBHS)
- **NCHRP 12-49 Project:** Development of Comprehensive Specifications for the Seismic Design of Bridges (conducted by a joint venture partnership of ATC and the Multidisciplinary Center for Earthquake Engineering Research, State University of New York at Buffalo; funded by the National Research Council: National Cooperative Highway Research Program)
- **ATC-50 Project:** Development of Procedures for Seismic Grading and Retrofitting of Detached Single-Family Wood-Frame Dwellings (administered by the City of Los Angeles; funded by FEMA through a Hazard Mitigation Grant Program award from the California Office of Emergency Services)

#### **ATC-51 Project: Seismic Safety of Hospitals in Italy**

In November 1999 ATC commenced its first funded international project—Development of Recommendations for the Seismic Design, Evaluation, and Rehabilitation of Hospitals in Italy (ATC-51 Project). Funded by the National Seismic Survey of Italy (NSS), the project will focus on a variety of topics, including: (1) seismic performance criteria; (2) guidance for seismic evaluation of hospital facilities; (3) analysis methods for seismic evaluation; (4) guidance for seismic rehabilitation of structural and non-structural components; (5) criteria for ensuring functionality of hospitals; and (6) methods for estimating cost-to-benefit ratios. The procedures and criteria are to be compatible with current Italian law (that is, enforced regulations). The recommendations will be developed by an advisory Project Engineering Panel, consisting of five specialists each from Italy and the United States.

## ATC Board Commences Endowment Fund Drive

The ATC Board of Directors has commenced a drive to double the size of ATC's Henry J. Degenkolb Memorial Endowment Fund, which was established in 1989 in honor of Henry J. Degenkolb, a well-known practicing structural engineer from San Francisco who substantially contributed to the field of earthquake engineering.

The purpose of the fund is to support projects of critical interest to structural engineering design practice, but for which funds are not available from traditional government-sector funding sources. Projects to be supported by the ATC Endowment Fund include the new ATC Design Guide series, to be unveiled in December 1999, which presents succinct, state-of-the-art

information on important design issues for practicing structural engineers. Small research projects nominated by structural engineers associations nationwide are also supported by the Endowment Fund.

The fund drive is headed by James Cagley, Chair of the ATC Endowment Committee. Other committee members are: Arthur Chiu, James Delahay, Edwin Johnson, Newland Malmquist, Maryann Phipps, and Jonathan Shipp.

The ATC Endowment Fund contained \$154,681 as of September 30, 1999.

### 1999-2000 Board of Directors

Edwin T. Dean, Portland, Oregon (President)  
Arthur N.L. Chiu, Honolulu, Hawaii (Vice President)  
Andrew T. Merovich, San Rafael, Calif. (Sec./Treas.)  
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Maryann T. Phipps, San Francisco, California  
Charles W. Roeder, Seattle, Washington  
C. Mark Saunders, San Francisco, California  
Jonathan G. Shipp, Newport Beach, California

## Guest Editorial: A Past ATC President's Retrospective



When then ATC President, John Coil, called me in 1991 to inquire if I would be interested in joining the ATC Board, I had to admit that I didn't know very much about ATC. Although I had worked in California on several projects, the recognition of ATC by an East-Coast-based structural engineer was not great.

After a year or two on the Board, I began to recognize that ATC was the most effective, sincere, and successful technology transfer

organization that I had ever encountered. ATC's accomplishments are particularly noteworthy in an industry where most of the standards, codes, and commentaries are developed by all-volunteer groups, and where the rate of progress of technology transfer and the creation of the vital information needed for the practicing structural engineer are dreadfully slow.

ATC has accomplished an amazing amount of technology transfer and preparation of critical information to assist the design engineer in the evaluation, design, and construction methodologies of buildings and bridges in seismic zones. While a vast majority of the more than 60 reports now available from ATC are concerned with the practice of seismic engineering, ATC has also begun to turn its attention to other types of structural loading.

When the ATC Board of Directors recognized that Hurricane

Andrew and the Northridge earthquake had caused FEMA and other disaster response organizations within the United States to focus on the multi-hazard threats that exist within the natural environment, the Board elected to broaden ATC's interests to include wind and coastal flooding.

As a result, ATC has expanded its Board over the last three years with wind, coastal flooding, and other multi-hazard engineers. By focusing on expanding its successful track record into these other new hazards, ATC ensures a successful evolution and exciting growth into the future.

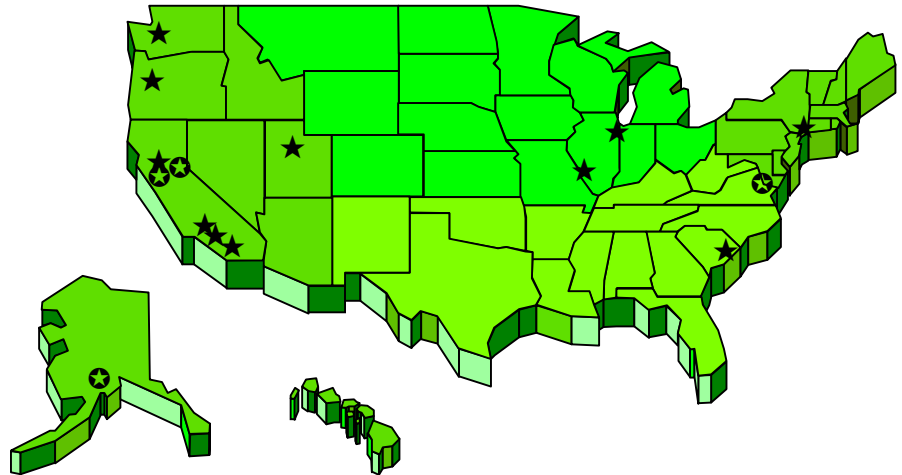
It has been an absolute pleasure to be involved on the Board for over eight years and an honor to be President in 1998-99. ATC is a fabulous, worthwhile organization.

*Charles H. Thornton,  
ATC President, 1998-99*

## ATC/BSSC FEMA 273 TRAINING SEMINAR SERIES NEARS COMPLETION

Since November of 1998, ATC and the Building Seismic Safety Council have been conducting 2-day training seminars on the FEMA 273 *Guidelines for the Seismic Rehabilitation of Buildings*. The two-day seminar program includes 12 hours of lectures on all aspects of the FEMA 273 *Guidelines* and its companion FEMA 274 *Commentary*. The program has been developed for practicing structural and civil engineers, architects, seismic engineering educators and students, building regulatory personnel, and other technical design professionals.

By December 1999, seminars had been held in Charleston, Chicago, Los Angeles (2 seminars), New York City, Oakland, Portland, St. Louis, San Diego, and Seattle, with a total attendance of more than 1200 persons. Future seminars are planned for Anchorage, Sacramento, San Francisco, Washington, DC, and



- ★ Completed seminars
- ⊛ Upcoming seminars

other cities. For additional information on seminar dates, places, programs, and registration fees, see the ATC web site, [www.atccouncil.org](http://www.atccouncil.org).

### Upcoming Scheduled Seminars

- January 7-8, 2000  
Heritage Hotel & Convention Center, Sacramento, Calif.
- February 24-25, 2000  
Key Bridge Marriott Hotel  
Arlington, Virginia

## UPCOMING ATC REPORTS

**ATC-35-3:** *Proceedings, Workshop on Improved Characterization of Strong Ground Shaking for Seismic Design* documents the results of a workshop attended by a blue-ribbon group of practicing engineers and earth science researchers in Rancho Bernardo, California, in July 1997. The goal of the workshop was to identify and describe high-priority research recommendations for improving the way in which strong ground shaking is characterized in design. The *Proceedings* includes a prospectus for each research recommendation.

**ATC-36:** *Earthquake Loss Evaluation Methodology and Databases for Utah* recommends an earthquake loss evaluation methodology for Utah, including methods for evaluating damage from ground shaking and collateral hazards, direct property losses, earthquake casualties, loss of function, and post-earthquake fire

losses. Also included are a structure classification system for Utah, sources of inventory data for Salt Lake County, a detailed discussion on data integration for establishing structural inventories, and a case study implementation of the loss evaluation methodology for a scenario magnitude-7.5 earthquake on the Wasatch fault. The methodology is an updated version of that developed for California in the ATC-13 report, *Earthquake Damage Evaluation Data for California*.

**ATC-38:** *Development of a Database on the Performance of Structures Near Strong-Motion Recordings* documents results from a survey of approximately 500 buildings affected by the January 17, 1994 Northridge, California, earthquake.

The purpose of the survey was to document the characteristics and performance of buildings near

strong-motion recording sites (within 300 meters). The survey data collected at each building site include information on the structure size, age, and location; the structural framing system (using 15 standardized model building types) and other important structural characteristics; nonstructural characteristics; geotechnical effects, such as liquefaction; performance characteristics, such as the degree of damage, if any, to the structural system, nonstructural elements, equipment and contents; fatalities and injuries; and estimated time to restore the facility to pre-earthquake usability. Damage is defined both in qualitative terms relating to reparability and in quantitative estimates of percent damage.

The survey data, including photographs of all buildings surveyed, are archived in a database management system and will be made available on CD-ROM.