EARTHQUAKE ENGINEERING RESEARCH INSTITUTE

Founded in 1948, EERI's mission is to reduce earthquake risk by (1) advancing the science and practice of earthquake engineering, (2) improving understanding of the impact of earthquakes on the physical, social, economic, political, and cultural environment, and (3) advocating comprehensive and realistic measures for reducing the harmful effects of earthquakes.

NEWS OF THE INSTITUTE

Register Today for 10NCEE: DDBD Seminar, New Sponsors, and SDC Registration

Register now for the Tenth U.S. National Conference on Earthquake Engineering (10NCEE) in Anchorage, Alaska, July 21–25, 2014. Information about Travel and Lodging, Airline Discounts, Pre-Conference Events, and Thursday Evening at the Alaska Native Heritage Center is available at www.10ncee.org. The following is the latest information about the Direct Displacement-Based Seismic Design of Buildings Seminar, New 10NCEE Sponsors, and Registration for the 2014 EERI Undergraduate Seismic Design Competition:

Pre-Conference Event: Direct Displacement-Based Seismic Design of Buildings LATBSDC Seminar

Date: Monday, July 21, 2014
Time: 8:00 a.m. – 5:00 p.m.
Location: Hilton Anchorage
Presenters: Dr. Nigel Priestley, Dr. Michele Calvi (M. EERI, 1990), and Dr. Mervyn Kowalsky (M. EERI, 1994)

This seminar will introduce participants to displacement-based seismic design (DDBD) and demonstrate how it can be implemented in the design office as a simple and rational alternative to current prescriptive methods of seismic design. The course will show that serious conceptual problems exist with current force-based seismic design and will demonstrate how these deficiencies are resolved when a simple displacement-based design approach is adopted. The DDBD approach results in structures with uniform seismic risk for a given performance level, which is compatible with uniform risk spectra. This is not achieved with current force-based design procedures. To read the seminar program, visit: http://10ncee.org/images/program/DDBD_ProgramPage.pdf.

Cost: Early-bird registration is $295. A companion textbook, if ordered as a part of early-bird registration for the seminar, can be obtained for the price of $120, including shipping, and will be available for pickup at the seminar. Note that current prices for the textbook on Amazon are $206. Registration increases to $365 on June 15th, at which point companion textbooks are no longer available.
Register for the event now at www.eeri.org/cohost/registration/ddbd-july-21-2014.

New 10NCEE Sponsors

Oregon State University (OSU) College of Engineering is a new silver sponsor of 10NCEE. Founded in 1889, OSU College of Engineering has a long history of graduating world-class engineers who have made major impacts on civilization through significant contributions in science and technology. By emphasizing authentic, experiential engineering experiences within its curriculum, OSU equips students with the knowledge, skills, and passion to advance innovative solutions to today’s most complex engineering challenges. Visit the OSU College of Engineering at http://engineering.oregonstate.edu.

Alyeska Pipeline Service is a new bronze sponsor of 10NCEE. Alyeska Pipeline Service Company, established in 1970, was named after the Aleut word, “Alyeska,” meaning mainland. Its 800 employees are proud of the pipeline’s history – one enriched by teamwork, innovation and a commitment to safety, reliability, and the integrity of TAPS. The 800 mile pipeline withstood the magnitude 7.9 Denali earthquake in 2002. The ground along the fault moved an estimated 18 feet horizontally and nearly 2.5 feet vertically. Due to Alyeska’s earthquake protection, the Denali Fault earthquake did not compromise the integrity of the pipeline. No oil spilled, and pipeline operations resumed after minor repairs. Visit the Alyeska Pipeline website at www.alyeska-pipe.com.

BP is a new bronze sponsor of 10NCEE. Alaska remains one of BP’s leading resource basins. After more than 36 years of production, the North Slope still has a large amount of the discovered oil and gas remaining. BP focuses its strategy and investment in Alaska on the known resources; on renewing its North Slope infrastructure; on ensuring safe and sustainable operations; and on commercializing Alaska natural gas. Visit the BP website for more information at www.alaska.bp.com.

Star Seismic is a new bronze sponsor of 10NCEE. Star Seismic has pioneered the engineering and design of Buckling Restrained Braces (BRBs). From commercial structures and high-rise buildings, to state-of-the-art medical centers and stadiums, Star Seismic’s buckling restrained brace systems have played a key role in a wide range of award-winning construction projects all over the globe. Visit the Star Seismic website at www.starseismic.net.

SDC Registration

Official registration for the 2014 EERI Undergraduate Seismic Design Competition will open in early April at http://slc.eeri.org/SDC2014.htm. Every year, hundreds of the nation’s brightest engineering undergraduates from leading engineering universities get together for the EERI Undergraduate Seismic Design Competition (SDC), organized by the EERI Student Leadership Council (SLC).

Teams from thirty-eight universities pre-registered for the SDC, including international competitors from as far away as Vietnam, India, and Romania. The 2014 EERI Undergraduate SDC will be held in conjunction with the 10th U.S National Conference on Earthquake Engineering (10NCEE) and the 66th EERI Annual Meeting on July 21-25, in Anchorage, Alaska.

Register today for 10NCEE at www.10ncee.org! We hope to see you in Anchorage this summer.

Anthony Shakal to Receive the Bruce Bolt Medal
Anthony Shakal (M. EERI, 1980), California Geological Survey (CGS) Supervising Geologist/Program Manager, was chosen as the 2014 recipient of the Bruce A. Bolt Medal, which is awarded jointly by the Seismological Society of America, the Consortium of Organizations for Strong-Motion Observation Systems (COSMOS), and EERI.

The Bruce A. Bolt Medal was established to recognize individuals worldwide whose accomplishments involve the promotion and use of strong-motion earthquake data and whose leadership in the transfer of scientific and engineering knowledge into practice or policy has led to improved seismic safety. Professor Bolt was recognized in his time by earthquake engineers and seismologists worldwide as the expert in engineering seismology.

Dr. Shakal has been associated with the CGS's Strong Motion Instrumentation Program (SMIP) for the past 32 years, and has successfully grown and led the Program for the past 27 years. Under Dr. Shakal's direct supervision and innovative management, the SMIP operates the largest and most advanced strong-motion network in the United States. The SMIP is also the largest strong-motion component in the U.S. Geological Survey's Advanced National Seismic System. In 2006 at the commemoration of the Great 1906 San Francisco Earthquake, the SMIP received the Applied Technology Council/Engineering News Record joint award as the Best Seismic Program of the Twentieth Century.

To date, Dr. Shakal's SMIP group has installed over 5,000 accelerometers at nearly 1,200 stations around the State. These seismic monitors have been placed in over 850 free-field ground stations, on more than 80 bridges, and in 200 buildings. Ground motion and structural response data gathered from this network are directly employed in the California Building Code to make structures more earthquake resilient. Two very recent examples of Dr. Shakal's diverse skills can be seen in the successful completions of the One Rincon Tower and the new east span of the Oakland Bay Bridge.

Dr. Shakal continues to expand and promote the educational and communication links between the structural engineering and seismological communities through financially supporting an annual conference in which SMIP-sponsored research papers are presented. He participates as an active member of the standards setting committee at COSMOS, and works closely with Caltrans, and the Office of Statewide Health Planning and Development on projects related to earthquake engineering for hospitals. Dr. Shakal also finds time to write technical research papers to help publicize the latest findings from the programs he oversees.

For more information on the Bruce A. Bolt Medal, visit the EERI website at www.eeri.org/about-eeri/honors-awards/the-bruce-a-bolt-medal/.

Note: See the full list of 2014 EERI Award Recipients at http://bit.ly/1c3HttF. In the next issue of The Pulse, we will feature the 2014 EERI Honorary Members.

Call for Nominations: 2015 EERI Distinguished Lecture Award

The EERI Honors Committee will meet soon to consider candidates for the Distinguished Lecture Award for 2015. The Committee welcomes nominations from EERI members. All nominations must be sent to EERI at eeri@eeri.org by Friday, May 30, 2014, accompanied by a brief justification.

Since 1992, EERI has honored leaders in the earthquake profession through this annual award. The lecture is generally presented for the first time at the EERI Annual Meeting and then at a series of student and regional chapter meetings nationwide.
IN MEMORIAM

Remembering Takashi Tazoh (1948-2014)

Dr. Takashi Tazoh (M. EERI, 1994), the former Deputy Director & Chief Research Manager of the Institute of Technology of Shimizu Corporation and pioneer in geotechnical earthquake engineering research, passed away suddenly on February 22, 2014, three days before his 66th birthday, after a short battle with hepatic carcinoid.

Takashi was born in the town of Namerikawa in the Toyama region of Japan, on February 25, 1948 (in what he views as) one of the saddest periods in the history of his nation, following the defeat by the Allies in WWII. He attended Chuo University from which he graduated with a Bachelor’s degree in engineering in 1970, and with a Master’s degree in 1972.

After a brief period as a teaching assistant in Chuo University, he started his professional career at Shimizu Corporation in 1973. In 1985 he took up a position as Senior Research Engineer at the Institute of Technology, the R&D Unit of Shimizu. There, he quickly rose through the ranks and in 2006 he was appointed Deputy Director & Chief Research Manager.

In 1993 he was awarded a Ph.D. degree from Chuo University. He authored or co-authored more than three hundred technical papers and nine books. He served as Auditor and Special Advisor of the Japanese Association for Earthquake Engineering. His long list of honors includes the 2005 Best Paper Award and the 2005 Best Program Planning Award from the Japanese Geotechnical Society.

As a young engineer, Takashi contributed to several major projects, such as the Kikuma Project in Ehime prefecture, an important national project where he investigated the performance of underground oil storage tanks influenced by earthquakes. He also worked on the earthquake observations at Tokyo Gus Sodegaura LNG terminal, Chiba Prefecture, and the seismic evaluation of foundations supporting the Hakucho Bridge in Muroran, Hokkaido, among others.

Takashi is widely known for his pioneering experimental investigations of kinematic bending of piles under the Ohba Ohashi Bridge and, later, the Ervic Building, which propelled the subject internationally in the 1980's and 1990's. Following the Kobe earthquake, he was instrumental in carrying out experimental research on foundations in liquefied environments and developing patents (such as the Super Pin device) for protecting piles from head fracturing due to excessive seismic demand. He also co-organized several Japan-Greece Workshops on earthquake engineering, with the participation of numerous Greek and Japanese colleagues.

Takashi was a leader in earthquake engineering, a great story teller, a Kanji character teacher (who personally taught friends and colleagues from all over the world), a man of humor, a world traveler, a devoted golfer, a fan of good cinema, and a great human being. Over the years,
he helped several young colleagues launch their careers, including the signatories. He was always providing help to foreigners with visits to Japan and with establishing local contacts.

He is survived by his wife Michiko, whom he married in 1978, children Shin-ichiro & Yukiko, and grandchildren Yuna Tazoh & Yudai Nagaoka. Takashi will be greatly missed and always remembered by colleagues and friends.

Written by Masato Saitoh (M. EERI, 2011), Saitama University, and George Mylonakis (M. EERI, 1996), University of Bristol

PUBLICATIONS

Spectra Preprints: 2010-2011 Canterbury Earthquake Sequence, NGA-West2, and more

In late March, twelve preprint manuscripts were posted on the Earthquake Spectra website prior to their formal publication. In addition, the editors also posted Special Collections of Preprints of the papers that will be published in the 2010-2011 Canterbury Earthquake Sequence special issue (forthcoming) and the NGA-West2 special issue (forthcoming, August 2014). The list of new preprint manuscripts, including authors, follows:

- “A Beta Distribution Model for Characterizing Earthquake Damage State Distribution” by David Lallemant and Anne Kiremidjian (M. EERI, 1976)
- “Cyclic Performance of Welded Unreinforced Flange–Welded Web Moment Connections” by Sang Whan Han (M. EERI, 1994), Ki Hoon Moon, and Jin Jung
- “Towards Robust Fragility Relations for Buried Segmented Pipe in Ground Strain Areas” by Michael O’Rourke (M. EERI, 1993), Evgeni Filipov (M. EERI, 2010), and Eren Uçkan
- “Elaboration of Multi-Hazard Zoning and Qualitative Risk Maps of Pakistan” by Muhammad Shahid Siddique and Jochen Schwarz (M. EERI, 1996)
- “Update of the Chiou and Youngs NGA Model for the Average Horizontal Component of Peak Ground Motion and Response Spectra” by Brian S.-J. Chiou and Robert R. Youngs (M. EERI, 1983)
“On the Calculation of Peak Ground Velocity for Seismic Performance Assessment” by Yin-Nan Huang (M. EERI, 2005) and Andrew S. Whittaker (M. EERI, 1998)


“Are Near-Fault Fling Effects Captured in the New NGA West2 Ground Motion Models?” by Ronnie Kamai (M. EERI, 2010) and Norman Abrahamson (M. EERI, 1984)

“Localized Damage Detection Algorithm and Implementation on a Large-Scale Steel Beam-to-Column Moment Connection” by S. Dorvash, S.N. Pakzad, E.L. Labuz, J.M. Ricles (M. EERI, 1995), and I.C. Hodgson


To read preprint manuscripts or browse the complete list of preprint manuscripts, visit the Earthquake Spectra website at http://earthquakespectra.org/toc/eqsa/0/0.

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PROGRAM UPDATES

Friedman Family Visiting Professionals Program 2013-2014

In the 2013–14 academic year, students from eleven EERI student chapters had the privilege of hosting a distinguished professional as part of the EERI Friedman Family Visiting Professionals Program.

The program takes advantage of the breadth and depth of the EERI membership to help students understand and consider professional careers associated with earthquake engineering and earthquake risk reduction. The program offers a unique opportunity for students to hear about high profile projects and interact with visiting professionals in an informal setting.

Friedman Family Professionals visited the following EERI Student Chapters:

- **David Cocke** (M. EERI, 1992), *Structural Focus* – Rice University
- **David Friedman** (M. EERI, 1988), *Forell/Elsesser Engineering* – Georgia Tech, Purdue University, University at Buffalo, University of Minnesota, and University of Illinois
- **Nathan Gould** (M. EERI, 1990), *ABS Consulting* – Iowa State University
- **John Hooper** (M. EERI, 1987), *Magnusson Klemencic Associates* – University of Nevada, Reno
Annie Kammerer (M. EERI, 1997), Bechtel Corp – University of Memphis
Ron Mayes (M. EERI, 1978), Simpson Gumpertz & Heger – Johns Hopkins University
Farzad Naeim (M. EERI, 1983), John A. Martin & Associates – UCLA

EERI Student Chapter reports detailing the events they organized as part of their professional visits are available online at https://www.eeri.org/about-eeri/student-chapters/.

Student chapters that would like to host a visiting professional in the 2014–25 academic year will have the opportunity to apply this spring. An announcement will be made in an upcoming issue of The Pulse when the application period is open.

For more information about the Friedman Family Visiting Professionals program, visit: https://www.eeri.org/projects/friedman-family-visiting-professionals-program/.

EERI’s Confined Masonry Network: Introducing Confined Masonry in India

In late February 2014, volunteers from EERI’s Confined Masonry Network and representatives from various academic and government agencies in India met in a workshop to begin work on the development of an Indian code for confined masonry.

Considered an earthquake-resistant technology and alternative to low-rise reinforced concrete frame construction, confined masonry is widely used in Latin America, where it has been tested and performed well both in laboratories and many earthquakes. The Indian initiative will build on much of the work done to develop the Mexican code.

Held on the temporary campus of the Indian Institute of Technology Gandhinagar (IITGN), workshop participants also had an opportunity to visit the new campus of IITGN, currently under construction. In the first wide scale application in India, confined masonry is being used on the new campus for both faculty housing and student hostels. Thirty buildings with 9 flats each for faculty and student hostels that will house 1,200 students are under construction with this earthquake-resistant technology.

EERI member and IITGN Director Sudhir Jain (M. EERI, 1987) is overseeing this massive construction project, including academic buildings under construction in reinforced concrete. EERI member and IIT Kanpur civil engineering professor Durgesh Rai (M. EERI, 2000) agreed at the workshop to lead the effort to develop a code for engineered confined masonry for the country. Additional EERI members who participated in the workshop included C.V.R. Murty (M. EERI, 1995), Hemant Kaushik (M. EERI, 2009), Satwant Rihal (M. EERI, 1979), Vivek Rawal (M. EERI, 2011), Svetlana Brzev (M. EERI, 1995), and Marjorie Greene (M. EERI, 1982).
CHAPTER SPOTLIGHT

Are We on Shaky Ground? Earthquakes and New York City

On February 27, 2014, the New York–Northeast Chapter of EERI and the Center for Architecture, AIANY, co-organized the “Are We on Shaky Ground? Earthquakes and New York City” event. Event speakers included: Klaus H. Jacob (M. EERI, 1986), Columbia University; Sissy Nikolaou (M. EERI, 2004), Mueser Rutledge Consulting Engineers; Ramon Gilsanz (M. EERI, 2011), Gilsanz Murray Steficek; and Andrew E. Whittaker (M. EERI, 1998), SUNY Buffalo.

These leading professionals with an interest in earthquake risk reduction presented tales of the underground conditions and discussed seismic risk exposure for typical NYC building types. In combination with “Considering the Quake’s” multi-media content, this enlightening event put earthquakes on the radar in New York City. The "Considering the Quake" exhibition — tailored not only for the architecture and engineering communities but for an invested public as well — features full-sized seismic technology utilized in buildings, architectural and structural models, seismic testing videos, and a 500N shake table from North American Wave Spectrum Science and Trade Inc.

To read the full article about the event, visit the AIANY website at http://main.aiany.org/eOCULUS/newsletter/#/imagining-and-measuring-the-unimaginable/.

EERI Utah Chapter Short Course: Evaluation and Mitigation of Liquefaction Hazard for Engineering Practice

Date: Wednesday, April 9, 2014  
Time: 7:30 a.m. – 5:00 p.m.  
Presenter: W.D. Liam Finn, Professor Emeritus of Civil Engineering, University of British Colombia

The purpose of the EERI Utah Chapter short course is to improve engineering practice in Utah through thorough review and discussion of state-of-the-art procedures applied by engineers to evaluate and mitigate liquefaction hazard. Emphasis will be on urban infrastructure, including bridges, buildings, and planned development.

EERI Honorary Member W.D. Liam Finn (M. EERI, 1976), University of British Colombia, is an expert in geotechnical earthquake engineering with particular interest in liquefaction, seismic response of sites and earth structures, seismic safety evaluation of dams, seismic response of pile foundations, and seismic risk.

Additional presentations will be made by local experts: Loren Anderson, Utah State University; Steve Bartlett, University of Utah; Kyle Rollins (M. EERI, 1988), Brigham Young University; Kevin Franke (M. EERI, 2008), Brigham Young University; and EERI Honorary Member Les Youd (M. EERI, 1974), Brigham Young University.
Who Should Attend
Geotechnical and structural engineers, building and transportation officials, and risk managers.

Registration
For more information and to register for the course, visit the EERI Utah Chapter website. Also, see the EERI Utah Chapter Short Course flyer for course details.

STUDENT SPOTLIGHT

EERI Student Chapter Activities: San Jose State University

EERI Student Chapters engage in technical and social activities year-round, including hosting EERI Distinguished Lecturers and practitioners as part of the Friedman Family Visiting Professional Program. Many chapters also enter the annual EERI Undergraduate Seismic Design Competition (SDC). Described below are some of the student chapters' most energetic organizational and outreach efforts from their 2013–2014 annual report.

EERI Student Chapter at San Jose State University
The EERI Student Chapter at SJSU officers are President Tim Hendrickson (M. EERI, 2012), VP Aaron Wu (M. EERI, 2014), Treasurer Mona Sadeghian (M. EERI, 2014), Secretary Tzvetina Ivanova, Events Chair Marissa Neighbour (M. EERI, 2014), Membership Chair Mary Nguyen (M. EERI, 2014), and Special Projects Officer Robert Veloz (M. EERI, 2011). SJSU Professor Thalia Anagnos (M. EERI, 1982) and Professor Kurt McMullin (M. EERI, YEAR) are the student chapter’s faculty advisors.
The student chapter went on a site tour of the new Levi’s Stadium in Santa Clara, which will be the new home of the San Francisco 49ers. The field trip was co-organized by Professor Anagnos who took great joy in pointing out some of the seismic bracing systems in place at the new stadium. The event was a great way to get student chapter members interested in the field of earthquake engineering.

Read the full version of the San Jose State University's EERI Student Chapter 2013–2014 annual report (PDF).

Call for Annual Report of Activities from EERI Student Chapters
EERI Student Chapter officers are encouraged to submit their annual report of chapter activities to Juliane Lane at the EERI Office via email at eeri@eeri.org. The reports will be published on the Student Chapters section of the EERI website and will be featured in upcoming issues of The Pulse throughout the year. Submit your chapter’s annual report of activities to EERI today!

OPPORTUNITY FOR STUDENTS

- EERI Has Two Post Graduation Internship Positions Open

The Earthquake Engineering Research Institute (EERI) has two internship positions available for recent college graduates who are interested in gaining valuable professional experience while supporting the Institute’s mission to reduce earthquake risk. These positions can begin as early as April 28, 2014.

The four to six month internships offer engagement in a number of interesting EERI projects including the World Housing Encyclopedia, the Concrete Coalition, the Learning from Earthquakes Program, the California Clearinghouse, and the Confined Masonry Network.
In July 2014, EERI will host the 10th US National Conference on Earthquake Engineering. Interns during this period will contribute significantly to the planning and organization of this conference. Interns will also be expected to travel with EERI staff to Anchorage in July to assist in the execution of the conference.

Tasks are varied, although day-to-day work focuses on supporting EERI projects and staff through research and website development and maintenance.

Internship Requirements and Full Description
For more information about internship requirements, read the full description for the EERI Post Graduation Internship Program at: www.eeri.org/about-eeri/post-graduate-internship-program/. You may also learn more about EERI at www.eeri.org.

Application Process
Interested applicants should upload their resume, a one-page cover letter highlighting their qualifications and interest in the EERI internship program, and two references to the secure website here: www.eeri.org/cohost/registration/internship-application. Preference is given to EERI members. Applications should be submitted by April 15, 2014. In-person interviews will be conducted the week of April 21, 2014. EERI would like a commitment of at least four months. New internship positions become available every four to six months.

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**ANNOUNCEMENTS**

- **Request for Qualifications: CSMIP 2014 Data Interpretation Projects**

The California Strong Motion Instrumentation Program (CSMIP) for the California Geological Survey in the Department of Conservation plans to fund three or more data interpretation projects for the analysis and interpretation of strong-motion data recorded from earthquakes.

These projects are intended to further understanding of strong ground shaking and the response of structures during earthquakes, and to increase the utilization of strong motion data in improving seismic code provisions, seismic design practices and post-earthquake response.

The CSMIP Program is soliciting proposals from private engineering firms and universities to interpret and analyze the strong-motion data on the topics given in the Request For Qualifications (RFQ). The RFQ includes a description of the data interpretation topics, the required proposal contents, and the contract conditions.

Proposals must be received by CSMIP no later than April 15, 2014. To receive a copy of the RFQ, send an email to Shirley Rowley at Shirley.Rowley@conservation.ca.gov, or contact CGS by phone at (916) 322-3105.

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- **NEES-EERI Webinar: Lessons Learned from the Performance of a Base Isolated Hospital in Christchurch**
In the next webinar in the NEES/EERI Research-to-Practice webinar series, Dr. Robert Nigbor (M. EERI, 1984), NEES@UCLA, and Dr. Henri Gavin (M. EERI, 1994), Duke University, will discuss their observations regarding conventional and base-isolated buildings that they instrumented during the aftershock sequence of the Christchurch earthquakes.

By deploying instruments from the NEES@UCLA site, they were able to capture records from hundreds of seismic events, including the M 6.0 and M 5.9 earthquakes of December 23, 2011.

Date: Tuesday, April 15, 2014
Time: 12:00 p.m. – 1:30 p.m. PDT
Presenters: Robert Nigbor, NEES@UCLA, and Henri Gavin, Duke University

Information about registration for this NEES/EERI Webinar will be available soon at https://nees.org/events/details/265.

There is no cost to attend this webinar. PDHs will be available from EERI after the webinar for $30.

Strawbale Construction Appendix Approved for 2015 IRC

An appendix on Strawbale Construction was approved for inclusion in the 2015 International Residential Code (IRC) at the International Code Council’s (ICC) Public Comment Hearings in Atlantic City, NJ on October 4, 2013. This followed a 9-1 vote for approval by the IRC Building Committee at ICC’s code change proposal Committee Hearings in Dallas, TX in April of 2013.

Strawbale construction uses baled straw, stacked as blocks and plastered both sides, as either a structural or non-structural wall system. Invented in the 1880’s on the plains of Nebraska after the invention of the baling machine, it was practiced regionally for 50 years. Some early strawbale buildings over 100 years old are still in service. The method of construction fell into disuse over the next 40 years but experienced a rebirth in the 1980s in the American southwest. A steady spread of the technology's use has resulted in the construction of strawbale buildings in 49 of the 50 United States, and in over 45 countries throughout the world. Many variations of strawbale construction are practiced, depending on seismic risk, climate, available materials, and regional building traditions.

The lead author of the appendix is architect Martin Hammer (M. EERI, 2010). Significant contributors to the appendix include Mark Aschheim, PE (Professor at Santa Clara University; M. EERI, 1993), San Francisco bay area design professionals Kevin Donahue, SE and Dan Smith, Architect, and sustainable building codes advocate David Eisenberg of the Development Center for Appropriated Technology (DCAT) in Arizona. Mr. Eisenberg also co-authored the first load-bearing strawbale building code in 1995 for Tucson and Pima County, AZ. The IRC appendix also received input from other strawbale building practitioners in the U.S. and around the world.

The appendix was developed over a period of 11 years, and is based on focused testing and broad field experience over the last 20 years. Structural testing includes load-bearing, in-plane reverse cyclic and monotonic tests of full-scale wall specimens, out-of-plane tests, and a shake table test of a one-room full scale structure at the University of Nevada, Reno (UNR) NEES facilities in 2009.
The shake table test and its associated cyclic and component tests were funded by the EERI Endowment as part of the Special Projects Initiatives Program (now the Initiatives Development Committee), and Darcey Donovan, PE (M. EERI, 2008) was the Principal Investigator. Current EERI President Ian Buckle (M. EERI, 1989), UNR Professor of Civil Engineering and Director of CCEER, and Sherif Elfass, UNR Research Assistant Professor and NEES Operations Manager, were the lead advisors of the project. The shake table test demonstrated successful seismic performance and the resilience of plastered strawbale wall systems in strong shaking (0.82g, equivalent to 200% of the Canoga Park Topanga Canyon record of the 1994 Northridge, California earthquake).

Thermal tests at the Oak Ridge National Laboratory have shown plastered strawbale walls to have a thermal resistance of R-30 for a typical wall. ASTM E-84 tests in 2000 indicated a flame spread index and a smoke development index for straw bales, each less than the respective IBC maximums for both concealed and exposed insulation. In 2006 ASTM E-119 full-scale fire tests were conducted, including hose stream tests, indicating fire-resistance ratings for strawbale wall assemblies with clay plaster and cement-lime plaster of 1-hour and 2-hour, respectively.

Testing reports and other supporting documentation for the IRC appendix, as well as the appendix as approved, can be viewed and downloaded at http://www.ecobuildnetwork.org/projects/straw-bale-code-supporting-documents.

The IRC Strawbale Construction appendix dovetails with the format and requirements of the IRC. This includes the use of strawbale shear walls that relate to the IRC's prescriptive wall bracing requirements for wind speed and seismic design category. Structural use of strawbale walls as a load-bearing or in-plane lateral load resisting element is currently limited to one-story buildings in the IRC appendix. The 2015 IRC will be available from ICC in June of 2014. Commentary is expected to be included in the IRC Code and Commentary at a later publication date.

3rd International Conference on Urban Disaster Reduction: Call for Abstracts

The 3rd International Conference on Urban Disaster Reduction (3ICUDR) will be held September 28 – October 1, 2014 in Boulder, Colorado. The conference builds on an established practice of international collaboration and knowledge-sharing after disaster events in Japan, U.S., and Taiwan. In this third conference, New Zealand joins the three collaborating countries. The mission of this conference is to develop, integrate, and promote new knowledge and best practices in sustainable disaster recovery, with a particular emphasis on urban environments.

Abstracts that take bold steps in describing new strategies and ways of thinking to significantly reduce potential casualties, damage, and disruption from future disasters; and create safe, resilient, and adaptive communities, regions, and nations are being solicited. Young scholars are encouraged to present emerging research. Papers that bridge the knowledge gaps between research and practice are particularly welcomed. For more information and suggested topic areas, view the Call for Abstracts at http://3icudr.org/call-for-abstracts/. The deadline for submission is May 1, 2014.
The conference is being organized by the Earthquake Engineering Research Institute in collaboration with colleagues from the following partner organizations: **USA** — the Natural Hazards Center, University of Colorado, Boulder; Disaster Research Center, University of Delaware; Hazard Reduction and Recovery Center, Texas A&M University; **Japan** — the Research Center for Disaster Reduction Systems (DRS), Disaster Prevention Research Institute, Kyoto University, Kyoto, and the Risk Management Office/Research Center for Natural Hazard & Disaster Recovery, Niigata University, Niigata, in coordination with the Institute of Social Safety Science; **Taiwan** — the National Science and Technology Center for Disaster Reduction (NCDR) and the Disaster Management Society of Taiwan; and **New Zealand** — the New Zealand Society for Earthquake Engineering (NZSEE) and GNS Science, New Zealand. For more information about the conference, visit: [www.3icudr.org](http://www.3icudr.org).

### Proceedings Available: 7th International Conference on Case Histories in Geotechnical Engineering

Proceedings of the 7th International Conference on Case Histories in Geotechnical Engineering are now available. These proceedings contain two special sessions: Symposium in Honor of Clyde N. Baker and Special Session to Honor Legacy of Ralph B. Peck.

The proceedings also contain 315 papers from 58 countries: 11 state of the art, 38 invited, and 266 contributed papers from 49 countries. To view the table of contents and list of papers, visit: [http://bit.ly/1mFvKYd](http://bit.ly/1mFvKYd) (PDF).

The proceedings set includes a CD-ROM and abstract volume. You may place your order for this and previous conference proceedings at [http://7icchge.mst.edu/proceedings/](http://7icchge.mst.edu/proceedings/).

### Upcoming Events: ACEE, 2014 UR Forum, and UME Short Courses

The following 2014 conferences and courses may interest EERI members: the **Fifth Asia Conference on Earthquake Engineering (5ACEE)**, the **2014 Understanding Risk (UR) Forum**, and the **UME Short Courses on the "Seismic Design of Tanks" and "Earthquake Engineering for Nuclear Facilities."

#### Fifth Asia Conference on Earthquake Engineering

The Fifth Asia Conference on Earthquake Engineering (5ACEE) will be held at Howard International House in Taipei, Taiwan, October 16–18, 2014, with the theme "Earthquake Engineering for Resilient Communities." This conference is jointly organized by the National Center for Research on Earthquake Engineering and the National Taiwan University.

5ACEE will provide an excellent forum to bring together researchers, professionals, engineers, scientists, and academics to promote and exchange new ideas and experiences in the field of earthquake engineering. Keynote speakers include EERI members: Professor **Masayoshi Nakashima** (M. EERI, 1988), Kyoto University, Japan; and Dr. **Norman Abrahamson** (M. EERI, 1984), Engineering Seismologist, PG&E. For more details about 5ACEE, visit the conference website at [http://acee2014.ncree.org.tw/](http://acee2014.ncree.org.tw/).
The 2014 Understanding Risk (UR) Forum will be held in London from June 30–July 4, 2014 with the “Producing Actionable Information” theme. The third biennial UR Forum, organized in partnership with University College London’s Department of Science, Technology, Engineering, and Public Policy, is expected to host more than 800 people who will attend the event.

Every two years, the Global Facility for Disaster Reduction and Recovery (GFDRR) convenes the UR Forum — a five-day event designed to showcase best practices and the latest technical advances in disaster risk assessment. The Forum provides organizations with the opportunity to highlight new activities and initiatives, build new partnerships, and foster advances in the field. For more information, visit the UR Forum website at https://understandrisk.org/UR2014.

UME Short Courses

In addition to academic courses, the ROSE Programme of the UME Graduate School provides isolated short courses for engineers and researchers that focus on structural and seismic engineering topics, ranging from basic to advanced issues:

Seismic Design of Tanks (May 5–9, 2014)
This course will provide state-of-the-art seismic analysis and design of slender-to-squat tanks from an international perspective. This course is taught by Roberto Nascimbene, Head of Structural Analysis Area at the Eucentre Foundation and Adjunct Professor at the University of Pavia, Faculty of Engineering.

Earthquake Engineering for Nuclear Facilities (May 12-23, 2014)
This course will provide an overview of the basis of earthquake engineering with a particular focus on the methods for dealing with nuclear facilities and extreme events. This course is delivered by Pierre Labbé (M. EERI, 2005), EDF-DIN; Alain Pecker (M. EERI, 2000), Geodynamique et Structure; Gian Michele Calvi (M. EERI, 1990), University of Pavia; and Paolo Bazzurro, IUSS Pavia.

Further information on the UME short courses can be found at www.roseschool.it/page/65/short-courses.html.

Welcome New EERI Members

EERI would like to take this opportunity to welcome new members who have joined the Institute this winter (mid December to mid March).

If you would like to connect with these new members, find them in the EERI online membership directory, which requires logging into the Member Resources Area of the EERI website.
New Silver Subscribing Member CoreBrace designs and fabricates Buckling Restrained Braces at its facility in West Jordan, Utah. The company prides itself in the design and fabrication support that it provides engineers and steel fabricators. Each brace is custom built for project needs in a timely manner to meet even the tightest schedules. CoreBrace's specialties include buckling restrained brace design, buckling restrained brace fabrication, connection design, seismic design, and much more. For more information about CoreBrace, visit [www.corebrace.com](http://www.corebrace.com).

New Bronze Subscribing Member Mueser Rutledge Consulting Engineers (MRCE), founded in 1910 in New York City, is the first firm in the United States to combine a geotechnical specialty with structural foundation design engineering. Today MRCE remains a leader in the field they pioneered, providing structural design of foundations and waterfront structures and complete geotechnical studies. By combining geotechnical engineering with structural foundation design engineering, MRCE specializes in complicated sites, especially in urban areas. Visit the MRCE website at [www.mrce.com/index.htm](http://www.mrce.com/index.htm).

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Carlos Casabonne, GCAQ Civil Engineers, Civil Engineering
Hon Fung Chan, EBMUD, Geotechnical Engineering
Katherine Coates, Arup, Structural Engineering
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Frances Rose Wee, University of British Columbia, Structural Engineering
Ji Hyun (Jenna) Kim, University of British Columbia, Structural Engineering
Follow these steps to add EERI Calendar to your own Google calendar.

1. Open Google Calendar
2. On the left, above "My Calendars," click Add + and then From URL.
3. Enter the EERI calendar's address in the field provided. EERI Calendar ics link
   https://calendar.google.com/calendar/ical/eeri.org_s9151tit0ab26dnf2epn25d7rg%40group.calendar.google.com/public/basic.ics
4. Click Add Calendar. The calendar will appear on the left side under "Other calendars."

Monday, April 27, 2020 - April 30
**SSA 2020 Annual Meeting**
SSA 2020 Annual Meeting
27-30 April 2020 — Albuquerque, New Mexico
The 2020 Annual Meeting will be held in Albuquerque, New Mexico.
Check back later for more information.

Friday, May 15 2020 5:00 PM - May 16 2:00 AM
**2020 Los Angeles Tall Buildings Conference**
The 2020 Los Angeles Tall Buildings StructuralDesign Council conference will cover a variety of topics related to recent advances in structural design of tall and special buildings. Learn more: www.latallbuildings.org

Monday, September 14, 2020 - September 18
**17th WCEE**
The 17th WCEE will be hosted in Sendai, Japan, from September 14th to 18th 2020. Check http://www.iaee.or.jp/ for more information.

Sunday, February 07, 2021 - February 10
**ASCE/UCLA San Fernando Earthquake Conference**
For more information: http://lifelines2021.ucla.edu/