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SUMMARY

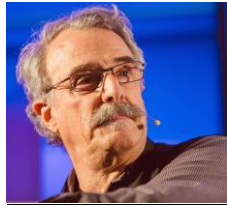


PHOTO BY LOMANNO FOR TED*

Over 45 years of experience in the field of building conservation and construction technology. Specialist in earthquake retrofit of historic structures, conservation of masonry buildings, building code compliance issues, post-disaster damage assessment and repair, development of innovative strategies for cost-effective rehabilitation, and historic preservation documentation and photography. Recipient of the 2002 National Endowment for the Arts Rome Prize in Historic Preservation, at the American Academy in Rome, and 2002 Fellowship to ICCROM. Author and photographer of several books and many published academic papers and articles on historic building conservation, and invited keynote and plenary speaker at over 50 conferences and at universities around the world.

EDUCATION

B.A. *cum laude*: Harvard College, 1968; Diploma in Conservation Studies: Institute of Advanced Architectural Studies, York, England, 1977; M.Arch: Harvard Graduate School of Design, 1982

PROFESSIONAL AFFILIATIONS

- US/ICOMOS (Member of the Board of Directors, 1996-2002) (<http://www.usicomos.org>)
- The ICOMOS International Scientific Committee ISCARSAH (International Scientific Committee on the Analysis and Restoration of Structures of Architectural Heritage) (<http://iscarsah.icomos.org/>)
- The ICOMOS International Scientific Committee ICORP (International Committee on Risk Preparedness)
- Earthquake Engineering Research Institute (EERI)
- National Trust for Historic Preservation
- Society of Architectural Historians

TEACHING EXPERIENCE

UNIVERSITIES OF CALABRIA, PESCARA, AND TRENTO

Italy

VISITING LECTURER

Nov. 2013, Nov. 2014 & Oct, 2017

Guest Lecturer in classes in Architecture at the University of Calabria and Pescara, and Structural Engineering at the University of Trento. Lectures were focused on both traditional timber and masonry construction and reinforced concrete construction in earthquake areas.

UNIVERSITY OF BRESCIA

Brescia, Italy

VISITING PROFESSOR

2008

Taught an intensive 20-hour course on traditional methods of earthquake-resistant construction found in different countries and regions of the world. Course was for an international group of graduate students in the Masters and PhD programs in Structural engineering and architecture, and was held in the Engineering Department of the University of Brescia.

U.S. DEPARTMENT OF STATE, U.S. Speaker and Specialist Program

Portugal & Dominican Republic

VISITING SPECIALIST & LECTURER

FEBRUARY, 2007 & JUNE 1989

- U.S. State Department funded Preservation Planning Training Consultant and Speaker at the Sirchal-Puerto Plata Program Symposium and Workshop. Held in Puerto Plata, Dominican Republic, 2007.
- U.S. State Department funded (U.S.I.S.) Lecture Tour in Portugal, June 1989.

ICCROM-The International Centre for the Study of the Preservation and Restoration of Cultural Property

BUILDING CONSERVATION EDUCATOR

2004 & 2006

- Presenter at the ICCROM Special one-day Workshop session at the International Disaster Reduction Conference (IDRC Davos 2006) in Davos, Switzerland on the subject of *Integrating Traditional Knowledge Systems and Concern for Cultural and Natural Heritage into Risk Management Strategies*.

- Consulting professor to co-teach with Herb Stovel of ICCROM a training workshop for the Central American and Caribbean nations on Risk Preparedness for historical sites throughout the Caribbean region. The workshop was held in Santo Domingo, Dominican Republic in December 2004, and it included a reconnaissance of recent earthquake damage in Puerto Plata, Dominican Republic.

UNESCO
Tbilisi, Georgia
BUILDING CONSERVATION EDUCATOR
JULY, 2002

- Co-instructor in Tbilisi, Georgia in 2002 in a training symposium on post-earthquake recovery of damaged buildings in Old Tbilisi, after the April 2002 earthquake in Tbilisi, Georgia. Course was held in Tbilisi, and attended by professional architects and conservators from Georgia, Armenia and Azerbaijan.

UNIVERSITY OF CALIFORNIA, BERKELEY
Berkeley, California
ASSISTANT PROFESSOR OF ARCHITECTURE
1984-1991

Specialized in graduate level teaching in the field of Historic Preservation and Building Conservation; also taught studio design and contemporary building construction to architecture students; and developed several new courses including fieldwork in hands-on conservation.

- Conducted a research project on the conservation of historic masonry buildings in seismic areas.
- Established and co-chaired an AIA-sponsored civic technical committee to work with the City of Oakland on the development of an earthquake damage repairs ordinance following the 1989 Loma Prieta Earthquake.
- Served on a City of Oakland sponsored civic committee to advise the city on the drafting of a Preservation Element for the city's General Plan.

SELECTED GRANTS AND AWARDS

- **National Endowment for the Arts ROME PRIZE in Historic Preservation** at the American Academy in Rome. 2002-2003.
- **2002-03 ICCROM Fellow** at ICCROM (International Centre for the Study of the Preservation and Restoration of Cultural Property, established by UNESCO in 1956) in Rome, Italy.
- **Director's Award and Meritorious Service Award** from the Federal Emergency Management Agency (FEMA), 1999, for collaborative efforts on the development of the Grant Acceleration Program and the Cost Estimation Format for Public Assistance disaster damage repair grants, and for collaborative efforts in the creation of the FEMA Seismic Hazard Mitigation Program for Hospitals.
- **Oliver Torrey Fuller Award**, Association for Preservation Technology, International: Awarded for the best article for the year in the APT Bulletin.: *Bricks, Mortar, and Earthquakes, Historic Preservation vs. Earthquake Safety*, 1989.
- **Progressive Architecture Design Award**: To the Lowell Team for the planning and design for the Lowell National Cultural Park, Lowell, Mass, 1976. (Randolph Langenbach, historical consultant).
- **Citation**: American Society of Registered Architects: For historic preservation work on New England Textile Mills, 1975.
- **Annual Award for Conservation**: The Victorian Society of America, New England Chapter: Awarded to the Currier Gallery of Art, Manchester, N.H. for the Exhibition, *Amoskeag, A Sense of Place, A Way of Life*, designed and produced by Randolph Langenbach, 1975.
- **National Endowment for the Humanities Research Grant**, 1972, for the documentary research on the history and architecture of the Amoskeag Mills in Manchester, N.H.
- **Three National Endowment for the Arts Awards** from the Architecture and Urban Planning Division in 1969, the Photography Division in 1971, and from the Museums Special Exhibitions Program in 1974-75): For Photographic documentation of the Amoskeag Millyard, Manchester, N.H.
- **David McCord Book Prize**: Harvard College: For the article *An Epic in Urban Design*, Harvard Bulletin, Apr.16, 1968.

SELECTED INVITED KEYNOTE ADDRESSES AND INVITED LECTURES

2000-PRESENT

- Invited Lecture, **Civil Engineering Course (Prof. Camillo Nuti)**, Dep't of Architecture, Università Roma Tre, 27 March 2018
- Invited Lecture, **Raymond Lemaire International Centre for Conservation, Departement Architectuur, Katholieke Universiteit Leuven**, Leuven, Belgium, 20 March 2018
- Invited Keynote Speaker, **Seismic Summit, Dublin, Ireland**, Engineers Without Borders-Ireland, 14 March, 2018.
- Invited Keynote Speaker, **4th Int'l Conf. on Structural Health Assessment of Timber Structures**, Istanbul, Turkey, September 20-22, 2017.
- Invited Lecture, **School of Architecture, Delhi Technology Campus** affiliated with the Guru Gobind Singh Indraprastha University, Greater Noida, November 22, 2016.
- Invited Lecture, **Indian National Trust for Art and Cultural Heritage (INTACH)**, New Delhi, November 21, 2016
- Invited Lecture for the **Housing Recovery and Reconstruction Platform (HRRP)** in Kathmandu, Nepal, November 15, 2016.
- Invited Lecture, Foundation for Cultural Assets Protection, Implementation and Research Center (KURAM), **Fatih Sultan Mehmet Foundation University**, October 25, 2016.
- Invited Lecture, **ICOMOS International Scientific Symposium on Post-Disaster Reconstruction**, Istanbul, October 20, 2016.
- Invited Lecture as part of the **Columbia University "Inquiry:HP" Lecture Series** for Spring Semester, 2016, Graduate School of Architecture, Planning & Preservation, Columbia University, May 2016.
- Invited Keynote Speaker, **20th Anniversary Natural Building Colloquium**, Builders Without Borders, Kingston, New Mexico, October 2015. (Movie of address available on www.traditional-is-modern.net/nepal.html)
- Invited Lecture: **Government of Nepal, Department of Archeology**, Kathmandu, Nepal, August 2016.
- Invited Lecture: **Ideal Spaces Symposium**, Karlsruher Institut für Technologie (University of Karlsruhe, Dep. of History) organized by Professor Ulrich Gehmann, Karlsruhe, Germany, September 2015.
- Invited Keynote Speaker, **3rd UN World Conference on Disaster Risk Reduction (WCDRR)**, International Expert Meeting on Cultural Heritage Disaster Risk Management, organized by UNESCO, ICCROM, the National Institutes for Cultural Heritage in Japan (NICH), and the Japanese Government Agency for Cultural Affairs (ACA) March 2015.
- Invited Lecture: **Department of Architecture, Cambridge University**, Cambridge, UK, February 2015.
- Invited Keynote Speaker, **World Conference on Timber Engineering (WCTE)** Quebec City, Cn. October 2014. (Movie of address available on www.conservationtech.com)
- Invited Architect in Residence and Public Speaker. **13th Annual Canova International Architect Encounter**, Canova, Italy, June 2014. (Movie of address and information on Encounter available at www.canovacanova.com/#/homee/c8zs)
- Invited Keynote Speaker, **International Scientific Colloquium on Flood Protection and Heritage Conservation on Rivers and Streams**, Dresden, Germany, June, 2014.
- Invited Keynote Speaker, **1st International Symposium on Historic Earthquake-Resistant Timber Framing in the Mediterranean Area (HEaRT2013)**, Calabria, Italy, November 2013.
- Invited TED Speaker, **TED^x Amoskeag Millyard (Independently organized TED (Technology, Entertainment and Design) event)**, "*Reconsidering Sustainable Architecture.*" Manchester, New Hampshire, USA. November 2, 2013. (movie of address is available by link from www.conservationtech.com)

- Invited Keynote Speaker, **International Conference on Earthen Construction (KERPIC 2013)**: New Generation Earthen Architecture: Learning from Heritage, Aydin University, Istanbul, Turkey, 11-14 September, 2013.
- Invited Keynote Speaker, **2nd International Conference on Structures and Architecture (ICSA2013)**. University of Minho, Guimarães, Portugal, July 24-26, 2013. Also, Invited Keynote Speaker at the **MiniSymposium on Timber** held following the ICSA2013.
- Invited Seminar Speaker, **Scientific Seminar: “Disaster-Resistant Building Cultures,”** CRAterre-ENSAG, **National School of Architecture, Grenoble, France, 27-28 May 2013.**
- Invited Keynote Speaker, **The Environment, Risk Reduction and Adaption (TERRAmela), SEEDS, New Delhi,** 17-20 December 2012. (Lecture done by movie followed by remote live Q&A) (Movie of talk available at www.conservationtech.com.)
- Invited Keynote Speaker, **45th Institution of Engineers, Pakistan (IEP) Convention,** Karachi Centre, Karachi, Pakistan, 21-22 December 2012. (Lecture done by movie followed by remote live Q&A) (Movie of talk available at www.conservationtech.com.)
- Plenary Address, **“Was Haiti in 2010 the next Tangshan 1976?” ICOMOS Symposium: Reducing Risks to Cultural Heritage from Natural and Human-Caused Disasters,** Beijing, China, 31 October 2012. (Movie of talk available at www.conservationtech.com.)
- Invited University Lecture, **Department of Engineering Science, Oxford University,** March 6, 2012.
- Invited International Speaker, **Institution of Structural Engineers, London, England,** 27 February 2012.
- Invited Keynote Speaker: **21st World Conference on Disaster Management (WCDM),** Toronto, Canada, June 2011.
- Invited Professor and Keynote Speaker: **BH CICOP Conference, Faculty of Engineering and Faculty of Architecture, University of Sarajevo,** Sarajevo, Bosnia and Herzegovina, June 2011.
- Expert International participant: **NERA/GEM Taxonomy Workshop,** EU Centre, Faculty of Engineering, University of Pavia, Pavia, Italy, May, 2011.
- Invited Professor: **ICOMOS-ISCARSAH Workshop: Hurricanes and Earthquakes: Lessons Learned, Havana,** Cuba, May 2011.
- Invited University Lecture: **Faculty of Architecture Centre for Environmental Planning & Technology University, Ahmedabad,** India, February 2011
- Invited University Lecture: **V.V.P. Engineering College, Indubhai Parekh School of Architecture-Rajkot,** Gujarat, India, February 2011.
- Invited University Lecture: **Lukhdhirji Engineering College, Morbi,** Gujarat, India, February 2011.
- Expert International Keynote Speaker: **International conference on ‘Healthy Cities : A Perspective on Asian concerns’, Bhanuben Nanavati College of Architecture for Women, Pune,** India, February 2010.
- Plenary Address: **“Growing Green, Traditional Building and Sustainable Development” Conference, INTBAU, The International Network for Traditional Building, Architecture and Urbanism, Chicago,** 20-23 October 2010.
- Plenary Address: **Pictometry “FutureView 2010” Conference, Orlando,** Florida, USA, 24-27 October 2010.
- Invited Keynote Speaker: **International Association of Emergency Managers (IAEM) “Asia-Oceania Resilience” Conference (AOR 2010), Singapore,** October 2010.
- Invited Keynote Speaker, **Mini-Symposium on Timber Construction, 1st International Conference on Structures & Architecture (ICSA2010), University of Minho, Guimarães,** Portugal, July 2010.
- Invited Keynote Speaker, **8th International Masonry Conference, Dresden,** Germany, July 2010.
- Invited Keynote Speaker, **1st International Conference on Rural Settlements, Tehran,** Iran, May 2010 (Unable to attend because visa was not issued in time).

- Invited Keynote Speaker, **1st International Conference on Concrete Technology, Tabriz, Iran, November 2009** (Unable to attend because visa was not issued in time).
- Invited Lecture, *Creative Destruction: Timber and Masonry Earthquake Resistant Construction before the Age of Steel and Reinforced Concrete*, **Earthquake Hazards Program Seminar Series, USGS, November, 2008.** (A link to a video of this entire lecture with the slides is on www.conservationtech.com)
- Invited Keynote Speaker: *Ancient and Modern Earthen Construction in an Earthquake: The Example of Bam, Iran in 2003*, **Kerpic 2008-Learning from Earthen Architecture in Climate Change, International Conference, Lefkosa, Northern Cyprus, September 2008.**
- Invited Keynote Speaker, *Parades Polumbalinas, and the 'Invention' of Earthquake-Resistant Construction*, **International Seminar on Seismic Risk and Rehabilitation of Stone Masonry Housing, Horta, Azores, July, 2008.**
- Invited University Lecture: **National Institute of Technology, Srinagar, Kashmir, India, 2007.**
- Invited Keynote Speaker, **International Conference on Geo-environment, Jammu University Geology Alumni Association, Jammu, Jammu & Kashmir, India, 2007.**
- Invited Plenary Address: *From 'Opus Craticium' to the 'Chicago Frame,' Earthquake-resistant Traditional Construction*, **Structural Analysis of Historical Constructions Conference (SAHC), New Delhi, 2006.**
- Special Post-earthquake Invited Lecture on traditional earthquake-resistant construction in Pakistan, **for Pakistan Government officials and government engineers involved with the 2005 Kashmir earthquake recovery and reconstruction. Special Lecture organized by UN-HABITAT, Islamabad, Pakistan, 2006.**
- Invited Lecture, **Engineering Course (Prof. Dr. Qaisar Ali), Dept of Civil Engineering, University of Engineering & Technology Peshawar, Pakistan, 2006**
- Invited Keynote Speaker, *Lessons that can be learned from the Performance of Traditional Construction in Earthquakes*. **Int'l Symposium on Natural and Human-Made Hazards Conference, Antalya, Turkey, 2002.**
- Invited Workshop Speaker, *The Performance of Traditional Construction in the Bhuj and Kocaeli Earthquakes: Demonstrating the Performance of Brittle Materials*, **APT Annual Conference Workshops (combined), 2001:** (Published as an article in the *APT Bulletin*, Vol. XXXIII, No. 2&3, available on www.conservationtech.com)
- Invited Keynote Speaker, *An Analysis Of The Effects Of The Bhuj Earthquake On Traditional Unreinforced Masonry Construction* **International Conference on Seismic Hazard with particular reference to Bhuj Earthquake of January 26, 2001, Delhi, India, October 3-5, 2001.**
- Invited Keynote Speaker, *Intuition from the Past: What we can learn from traditional construction*., **ICOMOS/UNESCO Conference on Seismic Performance of Traditional Buildings, Istanbul, Turkey, November, 2000.**

PROFESSIONAL EXPERIENCE

HERITAGE and VERNACULAR BUILDING CONSTRUCTION EXPERT SELECTED FOR TV DOCUMENTARY ON THE NEPAL EARTHQUAKE

Nepal

- On invitation by filmmakers for WGBH BOSTON science program *NOVA*, in August 2015 organized and directed the reconstruction of a rural home of traditional rubble stone with mud mortar that incorporates a technology initiated and named *Gabion Bands* by Randolph Langenbach at a rural mountain-side site in Dhading District after the 2015 earthquakes in Nepal. Langenbach was also interviewed for the documentary together with Nepalese colleague Kai Weise in the Hanuman Dhoka Palace in central Kathmandu. This film, *Himalayan Megaquake* was aired on Jan. 2016, and is on YouTube linked from www.conservationtech.com.
- In October-November, 2016, returned to Nepal to consult with NGOs who wished to use the Gabion Bands system shown on *NOVA* for the reconstruction of rural houses and schools. One of these NGOs, Nepal School Projects, based in Canada, is planning to build as many as 30 school buildings using the system because of its advantages for sites that are distant from roads and located in mountain areas. (See www.traditional-is-modern.net/nepal.html.)

CONSULTANT TO WORLD MONUMENTS FUND & FOKAL**Haiti**

BUILDING CONSERVATION CONSULTANT & POST EARTHQUAKE RECONNAISSANCE TEAM LEADER

- Organized and led a five-person team of architects, engineers, and a builder to survey damage to Heritage buildings in the “Gingerbread” District in Port-au-Prince after the 2010 earthquake and make recommendations for their repair and restoration. Co-author and principal photographer of the mission report being published by the World Monuments Fund (see publications below), with funding also from the Fondation Connaissance et Liberté (FOKAL), and the Prince Claus Fund for Culture and Development.
- This was followed in 2013-4 by a consulting contract on the specific design for the seismic upgrade of the Dufort House, which was acquired for preservation and restoration by FOKAL. This was a sub-contract for consulting directly with Wiss, Janney and Elstner, Associates Engineers, to work with Stephen J. Kelley.

CONSULTANT TO UNESCO Division of Cultural Heritage & UNESCO New Delhi Office**International**

BUILDING CONSERVATION CONSULTANT PERIODIC IN 2000, 2001, 2003, 2004 & 2007 (CONCURRENT WITH FEMA)

- Member of the Expert Team for the UNESCO World Heritage Expert Mission to Pakistan after the 2010 Flood Disaster. Sites inspected included the World Heritage Sites of Moenjodaro; Makli, Thatta; and Taxila.
- For the New Delhi Office, author of *Don't Tear It Down! Preserving the Earthquake Resistant Vernacular Architecture of Kashmir*, published by UNESCO, New Delhi, 2009. Republished for distribution in the USA and Europe by Oinfroin Media, Oakland, California, 2009. (Available on Amazon & distributed by Ingram.) As part of this project, lectures given at Universities, conferences, to government and intergovernmental agencies in New Delhi, Jammu and Srinagar in India; and in Islamabad and Peshawar in Pakistan. Details about the book can be found on the web at: www.traditional-is-modern.net. Consultant to the Delhi office after the Kashmir Earthquake of October, 2005 on damage to monuments in Indian Kashmir, and author of *Guidelines for the Preservation of the Earthquake-Resistant Traditional Construction in Kashmir*, and Posters on Taq and *Dhaji Dewari*, published in print and on the web by UNESCO's New Delhi office.
- Delegate at the April, 2004 International Workshop on the conservation of Bam, held in Bam, Iran after the 2003 earthquake.
- Responsible for March 2001 survey in India after the Bhuj earthquake of 2001 to report on damage to cultural sites in Gujarat.
- Co-organizer of the 2001 UNESCO sponsored “Earthquake-Safe” Conference in Istanbul in 2000 on Traditional Construction in Earthquake Areas.

CONSULTANT TO the KATHMANDU VALLEY PRESERVATION TRUST**International**

BUILDING CONSERVATION CONSULTANT**2000 (CONCURRENT WITH FEMA)**

- Building conservation specialist invited by the Kathmandu Valley Preservation Trust (KVPT) to Kathmandu, Nepal to consult on the earthquake protection of historic pagoda style temples then currently under restoration by KVPT, a USA-based NGO with international funding. After the 2015 earthquakes, KVPT has reported “that among the KVPT's 45 restored building projects in Kathmandu and Patan, there were only three examples of major structural damage and some minor damage incidents.” (<https://www.wmf.org/blog/update-kathmandu-valley-preservation-trust-patan-royal-palace-complex-after-nepal-earthquake>).

CONSULTANT TO THE TURQUOISE MOUNTAIN FOUNDATION**Kabul, Afghanistan**

BUILDING CONSERVATION CONSULTANT**2006**

Consultant to Rory Stewart, Founder and Executive Director of the Turquoise Mountain Foundation in Kabul, Afghanistan on the restoration and earthquake hazard protection of historic timber and masonry buildings in Murad Khane, an historic neighborhood in central Kabul.

CONSULTANT OF BUILDING CONSERVATION TECHNOLOGY**Oakland, California**

HISTORIC PRESERVATION DESIGN & BUILDING CONSTRUCTION TECHNOLOGY SPECIALIST**1984-PRESENT**

Specialized in Secretary of the Interior Standards Tax-Act Project approvals, and seismic rehabilitation design and construction technology of historic masonry buildings in California, and on the effects of earthquakes and traditional construction in different parts of the world including India, the Middle East, Europe and the Americas.

- Projects included the Alameda City Hall seismic retrofit project, the Jack London House restoration, Jack London State Park, Oakland Medical Building and Haley Law Offices seismic retrofit projects, Oakland, Ca., the Pardee Home Museum seismic retrofit project. As the principal coordinator for the Oakland Medical Building Project, a complete seismic code upgrade of the 10-story building was accomplished for \$500,000, 1/5 the cost of previously produced plans.
- Specialized in the conservation of masonry churches, including the St. Paul's Episcopal Church in Oakland, where seismic retrofit recommendations resulted in the savings of approximately \$2 million.

FEDERAL PRESERVATION INSTITUTE, NATIONAL PARK SERVICE**Washington, DC**

CONSULTANT ON CONSERVATION EDUCATION FOR FEDERAL PRESERVATION OFFICERS**ON DETAIL FROM FEMA**

- Produced a specialized website for the Federal Preservation Institute with technical information and resources in the field of Building Conservation and Historic Preservation.

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)**San Francisco, CA. & Washington, D.C.**

RESPONSE AND RECOVERY DIRECTORATE, INFRASTRUCTURE SUPPORT DIVISION**1992-2004****Senior Analyst – Building Construction Technology Specialist**

Specialist in building technology and post-disaster damage repair for the FEMA Public Assistance (PA) Program. The PA Program provides grants to state and local governments, and non-profit organizations under FEMA, the government agency responsible for disaster relief and long-term recovery assistance. Responsible for the assessment and provision of Federal assistance for the repair and retrofit of historical masonry buildings damaged by the Loma Prieta Earthquake of 1989 and the Northridge Earthquake of 1994 and other disasters including hurricanes and floods. Also, extensive experience as an appeals analyst, and the drafting of legislation.

- Developed innovative historic preservation approaches to resolve technology disputes in the settlement of grants for the repair and restoration projects on buildings damaged in the Loma Prieta and Northridge earthquakes including the San Francisco, Oakland, and Los Angeles City Halls, the Main Hall, Mills College, the ACT Theater, the Hanna House, Freeman House, and Ennis-Brown House by Frank Lloyd Wright, the Quad, Green Library, and University Art Museum at Stanford University, and a number of other projects. Established an innovative hazard mitigation approach for historical buildings damaged by the Hurricane Iniki in Kauai, Hawaii, including the Waioli Mission Hall in Hanalei.
- Co-developed construction cost estimation methodology (with Paul Waszink, Construction Consultant) that provided an improved consistency and reduced costs in FEMA's grant making program following the Northridge Earthquake in Los Angeles. This methodology has been adopted as the nationwide standard for FEMA's PA Program.
- Drafted policy and set up the analysis procedures for a \$2 billion seismic retrofit program for Southern California hospitals following the Northridge Earthquake.
- Drafted the technical responses to second and third (top) level appeals of Public Assistance grant decisions involving complex engineering, building code, and construction cost related issues. Projects included the San Francisco City Hall and the San Francisco Opera House seismic upgrade projects, the Los Angeles County / University of Southern California Medical Center earthquake damage repair projects, historic Ste. Genevieve, Missouri damaged by the mid-west floods, and historic buildings affected by Hurricane Iniki in Hawaii and Hurricane Andrew in Florida,

PROTOTYPE 'BASE-ISOLATED' SINGLE FAMILY HOME PROJECT**completed, 1998**

Developed an experimental prototype house utilizing a combination of steel and wood frame construction, and invention and utilization of a new form of seismic base isolation foundation for small buildings, the *Damped Sway Foundation System*. Details of this project can be found on the web under "Base-Isolated House" at www.conservationtech.com.

ARCHITECTURAL HISTORIAN AND PRESERVATION PLANNING CONSULTANT**Cambridge, Mass.**

SPECIALIST IN NEW ENGLAND HISTORIC INDUSTRIAL BUILDINGS AND CITIES**1968-1984**

As an author, professional photographer, and historian of the architecture and town planning of the New England textile milltowns, work included the publication of articles, the design and production of museum exhibitions, and the consultation on the historic preservation of historic industrial resources in both the United States and Great Britain.

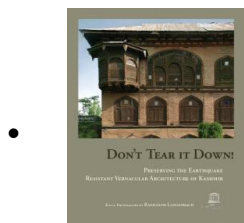
- Historian and preservation planner on the Lowell Team, Architects and Planners (1975) and Principal on the Moore-Heder Team, Architects and Planners (1978) to prepare plans for the establishment of the Lowell (Massachusetts) National Historical Park and develop the Preservation Plan for the central urban district surrounding the Park.
- Historical planning consultant to Benjamin Thompson and Associates, Architects, on the Faneuil Hall Marketplace project, Boston, Mass. (1970).
- Designer, Photographer and Producer of the award winning museum exhibition, *A Sense of Place, a Way of Life*, Currier Gallery of Art, Manchester, New Hampshire (1975), and *A Sense of Place, the Milltown in England and New England*, Boston City Hall Main Gallery, Boston, Mass. (1976).
- Designer and Photographer of the exhibition *Satanic Mills, Industrial Architecture of the Pennines*, produced by SAVE Britain's Heritage at the Royal Institute of British Architects, London, England (1979) and the Cartwright Hall Museum, Bradford England (1980). (Photos of exhibitions on www.conservationtech.com)

PUBLICATIONS**1968-present**

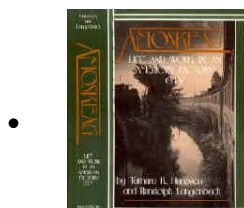
BOOKS: author and co-author of 5 books and more than 7 chapters in anthologies. Details and copies of some of this work can be found on the web at www.conservationtech.com. Details of the 2009 UNESCO book on Kashmir can be found at www.traditional-is-modern.net.



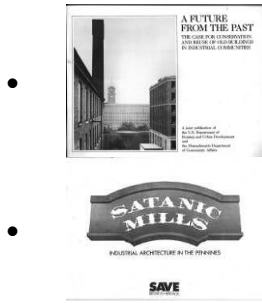
• Co-author and principle photographer: *Preserving Haiti's Gingerbread Houses*, published by World Monuments Fund, New York City, 2010. *Currently in print. PDF edition available for free at WMF through this link: www.haiti-patrimoine.org.*



• Author and photographer: *Don't Tear It Down! Preserving the Earthquake Resistant Vernacular Architecture of Kashmir*, published by UNESCO, New Delhi, 2009. Republished for distribution in the USA and Europe by Oinfroin Media, Oakland, California, 2009. *Currently in print. Available through www.traditional-is-modern.net.*



• Co-author with Tamara Hareven and photographer of *Amoskeag, Life and Work in an American Factory-City*, Pantheon Books, 1978. *Currently published under the imprint of the University Press of New England.) Continuously in print for over 30 years.*



Author and photographer of *A Future From the Past: The Case for the Conservation and Reuse of Old Buildings in Industrial Cities*, U.S. Dept. of Housing and Urban Development, GPO, 1978.

Co-author and photographer of *Satanic Mills, The Conservation of the Pennine Textile Mills*, SAVE Britain's Heritage, 1978. (Copies of articles and excerpts from books are on: www.conservationtech.com)

SELECTED BOOK CHAPTERS and PEER REVIEWED PAPERS on TRADITIONAL CONSTRUCTION IN EARTHQUAKE AREAS:

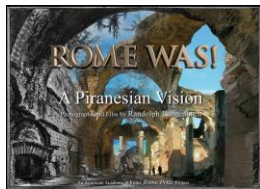
Author of approximately 60 major articles on historic industrial towns in the USA, Britain, and India, and on engineering and conservation technology issues involved in the conservation of masonry buildings in seismic areas, including the following selection of recent papers. For a complete compendium with downloadable links to almost all of the papers, go to www.conservationtech.com and click on PUBLICATIONS. A short list of *recent* papers below on the subject of traditional construction in earthquake areas:

- Keynote Address Paper, *TIMBER 2.0: Resilience and Vulnerability of Wood Construction in Earthquakes and Fires*, Proceedings of SHATIS'17: 4th International Conference on Structural Health Assessment of Timber Structures, Edited by Dr. Görün Arun, 20-22 September, 2017, Istanbul, Turkey. ISBN: 978-605-62703-7-6.
- Commissioned Book Chapter: *Ancient and modern earthen construction in an earthquake: Bam, Iran in 2003*. Earth Construction and Tradition, Volume 2, Hubert Feiglstorfer, Editor, IVA-ICRA (Institute for Comparative Research in Architecture), Supported by the Faculty of Architecture and Planning and the Dept. for History of Architecture and Building Archaeology, Vienna University of Technology, Vienna, Austria, 2016.
- Commissioned Book Chapter: *The earthquake resistant vernacular architecture in the Himalayas*, in the forthcoming book: Local Seismic Culture in Vernacular Architecture, Edited by Mariana Correia, Paulo Lourenço and Humberto Varum, to be published in Portugal by CRC press/ Taylor & Francis group, 2016.
- Commissioned Book Chapter: *What We Learn from Vernacular Construction*, in forthcoming book: Nonconventional and Vernacular Construction Materials: Characterisation, properties and applications, Edited by Professor Kent A. Harries, University of Pittsburgh, USA and Dr. Bhavna Sharma, University of Cambridge, UK, to be published by Woodhead Publishers/ Elsevier, London, 2016.
- Keynote Address Paper: *Traditional is Modern: Traditional Building Technology for Resilience in the Modern Era*, Proceedings of the International Expert Meeting on Cultural Heritage and Disaster Resilient Communities within the framework of the 3rd UN World Conference on Disaster Risk Reduction, March 2015. Book of Proceedings published 2016.
- Co-author with Greg Bankoff, University of Hull, UK, and Maggie Stephenson, UN-HABITAT, Chapter 5 of the *WORLD DISASTER REPORT 2014*, International Federation of Red Cross & Red Crescent Societies,
- *Rubble Stone Walls and Reinforced concrete Frames, Heritage Structures Reveal the Hidden Truth about Risk and Resilience during the Haiti Earthquake*, ICOMOS-ISCARSAH (International Scientific Committee on the Analysis and Restoration of Structures of Architectural Heritage) Newsletter, Issue #5, 2014.
- Keynote Address Paper now Chapter 3 of book Historical Earthquake-Resistant Timber Frames in the Mediterranean Area: Timber Frames and Solid Walls: Earthquake Resilient Construction from Roman Times to the Origins of the Modern Skyscraper, 1st International Symposium on Historic Earthquake-Resistant Timber Frames in The Mediterranean Area (H.Ea.R.T.2013), Cosenza, Calabria, Italy, November 2013.
- Keynote Address Paper: *The Great Counterintuitive: Re-evaluating Historic and Contemporary Building Construction for Earthquake Collapse Prevention*. International Conference on Structures and Architecture, Guimarães, Portugal, July 2013

- Keynote Address Paper: *Better than Steel? (Part 2) Tall Wooden Factories and the Invention of "Slow-burning" Heavy Timber Construction*. MiniSymposium on Building Tall Buildings with Wood, International Conference on Structures and Architecture, Guimarães, Portugal, July 2013
- Plenary Address Paper: *Was Haiti in 2010 the next Tangshan in 1976: Heritage Structures Reveal the Hidden Truth about Risk and Resilience during the Haiti Earthquake*, Proceedings of the ICOMOS Scientific Symposium on 'Reducing Risks to Cultural Heritage from Natural and Human-Caused Disasters, Beijing, China, 31 October, 2012.
- Keynote Address Paper: *Ancient Construction Technologies that can Protect Modern Buildings From Collapse in Earthquakes*, Proceedings of CICOP Pre-conference of the of the Biennale of the Architectural and Urban Spaces (BRAU), The 4th International Conference on Hazards and Modern Heritage, University of Sarajevo, Sarajevo, Bosnia, June 13-16, 2011.
- Keynote Address Paper: *Back to the Future: Lessons from the Past for a more Earthquake-Resistant City*, Proceedings of the BNCA "Healthy Cities" International Conference, Pune, India, February 2011.
- Invited Lecture paper: *'Earthquake Resistant Traditional Construction' is Not an Oxymoron: The Resilience of Timber and Masonry Structures in the Himalayan Region and Beyond, and its Relevance to Heritage Preservation in Bhutan*, The Royal Government of Bhutan's International Conference on Disaster Management and Cultural Heritage: "Living in Harmony with the Four Elements" Proceedings, 12-14-December 2010.
- Keynote Address paper: *Rescuing the Baby from the Bathwater: Traditional Masonry as Earthquake-Resistant Construction*, 8th International Masonry Conference, Dresden Germany, July, 2010.
- Keynote Address paper: *Better than Steel? The use of timber for large and tall buildings from Ancient Times until the Present*. for the Mini-Symposium on Building Tall Buildings with Wood, International Conference on Structures and Architecture, University of Minho, Guimarães, Portugal, July 2010
- *Learning from the Past to Protect the Future: Armature Crosswalls*, Engineering Structures, Vol. 30, Nr.8, Elsevier Ltd, August 2008.
- *Building Tall with Timber: A Paean to Wood Construction, and Resisting Earth's Forces: Typologies of Timber Buildings in History*, Structural Engineering International, Vol. 18, Nr.2, IABSE, May 2008.
- *Resisting Earth's Forces: Typologies of Timber Buildings in History*, Structural Engineering International (SEI), Journal of the International Association for Bridge and Structural Engineering (IABSE), Volume 18, N. 2, May, 2008, pp 137-140.
- *From 'Opus Craticium' to the 'Chicago Frame,' Earthquake-resistant Traditional Construction*, in the inaugural issue of the International Journal of Architectural Heritage, Volume 1, 2007, Taylor and Francis Group, London.
- *Understanding What Works: Learning from Earthquake Resistant Traditional Construction*, in Heritage at Risk, 2007, ICOMOS & Technische Universitat Dresden, 2007 (ISBN 978-3-940046-64-2).
- 2006, Co-authors: Randolph Langenbach & Alberto Dusi, *THE VICTIMS' DILEMMA: When Doing Good may be Doing Wrong*, Proceedings of the 2006 International Disaster Reduction Conference (IDRC), Davos, Switzerland, ICCROM Workshop on the Integration of traditional knowledge systems and cultural heritage into risk management, Davos, Switzerland, August, 2006.
- 2006, Co-authors: Randolph Langenbach, Khalid Mosalam, Sinan Akarsu, Alberto Dusi; *ARMATURE CROSSWALLS: A Proposed Methodology to Improve the Seismic Performance of Non-ductile Reinforced Concrete Infill Frame Structures*, 8th U.S. National Conference on Earthquake Engineering (8NCEE), San Francisco 1906 anniversary, San Francisco, California, USA, April 2006.
- *Saga of the Half-Timbered Skyscraper: What does Half-Timbered Construction have to do with the Chicago Frame?* Proceedings of the second International Congress on Construction History, Cambridge University, UK, 2006.
- *Performance of the Earthen Arg-e-Bam (Bam Citadel) during the 2003 Bam, Iran, Earthquake.* EERI Earthquake Spectra, Special Issue on Bam, Iran Earthquake 1, Vol. 21, December 2005. (3 MB)
- *Soil Dynamics and the Earthquake Destruction of the Earthen Architecture of the Arg-e Bam*, published by the IIEES, Tehran, Iran, 2004.

- 2004, “*The Earthquake Resistance of Timber and Masonry Buildings in Turkey*,” (co-author with Polat Gulkan) Proceedings of the 13th World Conference on Earthquake Engineering, Vancouver, Canada, August, 2004.
- *On the Cross of Sant’ Andrea, The Response to the Tragedy in San Giuliano di Puglia, [Italy]*, (co-author with Alberto Dusi), EERI, Spring, 2004.
- *Masonry Building Performance in the Molise [Italy] Earthquake*, (co-author with Luis Decanini, Adriano De Sortis, Agostino Goretti, Fabrizio Mollaioli, and Alessandro Rasulo), *Earthquake Spectra*, EERI, Spring, 2004.
- *Survivors among the Ruins, Traditional Houses in Earthquakes in Turkey and India*, in APT Journal of Preservation technology XXXIII no. 2-3, 2002.
- Keynote Address paper: *Intuition from the Past: What we can learn from Traditional Construction*, Istanbul UNESCO/ICOMOS Conference on the Seismic Performance of Traditional Construction, November, 2000.
- *Bricks, Mortar and Earthquakes* in the APT Bulletin, XXI 3&4, 1989 (winner of the 1990 Association for Preservation Technology International *Oliver Torrey Fuller Award*).

ANIMATED FILM & PHOTOGRAPHIC ART GALLERY EXHIBITION



A documentary photography project begun as a Rome Prize Fellow at the American Academy in Rome was later produced as the 40 minute animated digital movie: “*ROME WAS!, A Piranesian Vision*.” This has been shown in San Francisco together with an exhibition of art prints at the Joel Garzoli Fine Art gallery from September to November, 2014, with a film screening at the Italian Cultural Center in San Francisco. The film has also been screened at the Universities in Italy in Rome, Calabria, Pescara and Trento.



This film has been selected for screening in February 2015 at the 7th International Filmmaker Film Festival of World Cinema, and has been nominated for awards for Animation, Editing, Direction and Production, and it [won Best Animation at the Festival](#). A revised 30 minute version of this film has also been produced with the title *Rome Was! Ruins Eternal*. A trailer for this version of the film can be watched at www.piranesian.com.

The earlier slide/video version of this project has been shown at invited screenings and lectures at the Academia di San Luca, Rome at the invitation of the City of Rome, the Sir John Soane Museum, London; the Crocker Gallery of Art in Sacramento, California; Fantasy Studios in Emeryville, California; and other venues including Kabul, Afghanistan. Further information with the photographs and film trailer can be found at www.piranesian.com.

PAPERS about THE PIRANESI PROJECT:

The following publications were produced in conjunction with the creation of the slide-video *The Piranesi Project, A Stratigraphy of Views of Rome* while on a Rome Prize Fellowship at the American Academy in Rome, 2002-2003 (see “Movies and Videos” above). (Available on www.piranesian.com)

- Book Chapter: *The Building of a Symbolic Image: The Juxtaposition of Giambattista Piranesi’s Vedute Di Roma with Photographs Taken 250 Years Later*, Part IV, Chapter 1 in the book: Giambattista Nolli and Rome: Mapping the City before and after the Pianta Grande, Studium Urbis, 2014, pp.179-198. (Available on www.piranesian.com.)
- Book Chapter: *The Building of a Symbolic Image*, Chapter 1, part 3 in the book REAL Virtuality: About the Destruction and Multiplication of World, Ulrich Gehmann and Martin Reiche, Editors, Transcript Verlag (Germany), 2014. (Available in the USA from Columbia University Press.)
- “*OUTSIDE OF THE FRAME: Piranesi’s Perspective and Composition, Re-explored in the Digital Age*,” Proceedings, ICOMOS, General Assembly, Quebec City, Canada, 2008. (Available on www.piranesian.com)