

## **RANDOLPH LANGENBACH, FAAR**

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### **SUMMARY**



Over 40 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 articles on historic building conservation.

### **TEACHING EXPERIENCE**

#### **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**

**Puerto Plata, Dominican Republic**

##### **VISITING SPECIALIST & LECTURER**

**FEBRUARY, 2007**

- 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.

- (Forthcoming) Expert International Speaker: International conference on 'Healthy Cities : A Perspective on Asian concerns', Pune, India, February 2010.
- (Forthcoming) 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.
- (Forthcoming) Plenary Address: Pictometry "FutureView 2010" Conference, Orlando, Florida, USA, 24-27 October 2010.
- (Forthcoming) Keynote Address: International Association of Emergency Managers (IAEM) "Asia-Oceania Resilience" Conference (AOR 2010), Singapore, October 2010.
- 1<sup>st</sup> International Conference on Structures & Architecture (ICSA2010), Keynote address for the Mini-Symposium on Timber Construction, Guimarães, Portugal, July 2010.
- Keynote Address at the 8<sup>th</sup> International Masonry Conference, Dresden, Germany, July, 2010.
- Keynote Address for 1<sup>st</sup> International Conference on Rural Settlements, Tehran, Iran, May 2010 (Cancelled because visa was not issued in time).
- Keynote Address for 1<sup>st</sup> International Conference on Concrete Technology, Tabriz, Iran, November 2009 (cancelled 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](http://www.conservationtech.com))
- Keynote Address: *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.
- Keynote Address: *Parades Polumbalinas, and the 'Invention' of Earthquake-Resistant Construction*, International Seminar on Seismic Risk and Rehabilitation of Stone Masonry Housing, Horta, Azores, July, 2008.
- University Lecture: National Institute of Technology, Srinagar, 2007.
- Plenary Address: *From 'Opus Craticium' to the 'Chicago Frame,' Earthquake-resistant Traditional Construction*, Structural Analysis of Historical Constructions Conference (SAHC), New Delhi, 2006.
- Keynote Address: *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.
- *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)
- Keynote Address: *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.
- *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

#### **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, with funding also from the Fondation Connaissance et Liberté (FOKAL), and the Prince Claus Fund for Culture and Development.

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

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

- 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](http://www.traditional-is-modern.net).
- For the New Delhi Office, author of *Guidelines for the Preservation of the Earthquake-Resistant Traditional Construction in Kashmir*, and Posters on Taq and Dhajji Dewari, published in print and on the web by UNESCO's New Delhi office.
- Consultant to the Delhi office of UNESCO after the Kashmir Earthquake of October, 2005 on damage to monuments in Indian Kashmir.
- Delegate at the International Workshop on the conservation of Bam, held in Bam, Iran after the 2003 earthquake.
- Responsible for survey in India after the Bhuj earthquake of 2001 to report on damage to cultural sites in Gujarat.
- Co-organizer of the UNESCO sponsored "Earthquake-Safe" Conference in Istanbul in 2000 on Traditional Construction in Earthquake Areas.

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

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**BUILDING CONSERVATION CONSULTANT** **2006**

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

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**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.

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

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**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.

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

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**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 Hanalai.
- 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,

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## DESIGNER/DEVELOPER

Oakland, California

### PROTOTYPE EXPERIMENTAL 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 at [www.conservationtech.com](http://www.conservationtech.com).

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## 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](http://www.conservationtech.com))

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## 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.
- Earthquake Engineering Research Institute (EERI) National Science Foundation *Lessons Learned over Time* Research Grant on the effect of the Turkey earthquakes of 1999, 2000, and 2003 on traditional construction.
- Director's Award and Meritorious Service Award from the Federal Emergency Management Agency (FEMA), 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 Arts Fellowship Award, Photography Division, 1971: (Other Grants from the NEA included one from the Architecture and Urban Planning Division in 1969, 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.

## MOVIES AND VIDEOS

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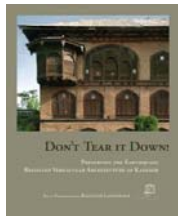
*THE PIRANESI PROJECT, A Stratigraphy of Views of Rome*, A 50 minute slide/video, with sound and text. Created and first presented at the American Academy in Rome in 2003, and subsequently shown at the Academy di San Luca at the invitation of the City of Rome, the Sir John Soane Museum, London; the Crocker Gallery of Art in Sacramento, California; Fantasy Studios in Emeryville, California; and other venues including Kabul, Afghanistan. A description of this work can be found on the web at [www.conservationtech.com](http://www.conservationtech.com).

## PUBLICATIONS

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1968-present

BOOKS: author and co-author of 4 books and more than 5 chapters in anthologies. Details and copies of some of this work can be found on the web at [www.conservationtech.com](http://www.conservationtech.com). Details of the 2009 UNESCO book on Kashmir can be found at [www.traditional-is-modern.net](http://www.traditional-is-modern.net).



- *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 Oinfoin Media, Oakland, California, 2009. *Currently in print.*
- 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](http://www.conservationtech.com))

SELECTED ARTICLES AND PAPERS: Author of approximately 50 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. Many of these articles and papers can be found on-line at [www.conservationtech.com](http://www.conservationtech.com). A short list of *recent* papers below:

- *Better than Steel? The use of timber for large and tall buildings from Ancient Times until the Present.* Keynote Address paper for the Mini-Symposium on Building Tall Buildings with Wood, International Conference on Structures and Architecture, Guimarães, Portugal, July, 2010

- *Rescuing the Baby from the Bathwater: Traditional Masonry as Earthquake-Resistant Construction*, Keynote Address paper, 8th International Masonry Conference, Dresden Germany, 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.
- *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).
- *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.
- *On the Cross of Sant' Andrea, The Response to the Tragedy in San Giuliano di Puglia*, (co-author with Alberto Dusi), and *Masonry Building Performance in the Molise Earthquake*, (co-author with Luis Decanini, Adriano De Sortis, Agostino Goretti, Fabrizio Mollaioli, and Alessandro Rasulo), *Earthquake Spectra*, EERI, Spring, 2004. (800 KB)
- *Survivors among the Ruins, Traditional Houses in Earthquakes in Turkey and India*, in *APT Journal of Preservation technology* XXXIII no. 2-3, 2002.
- *Intuition from the Past: What we can learn from Traditional Construction*, delivered as a Keynote address the 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*).

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## 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/>)  
 Association for Preservation Technology International (APT)  
 National Trust for Historic Preservation