



Johnstown ASHRAE February 2015 Meeting

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- 2015 Engineer's Week Awards Banquet
- Joint Meeting w/ PSPE Johnstown Chapter
- Date: Thursday, February 19, 2015
- Location: University of Pittsburgh at Johnstown
Heritage Hall, Living Learning Center
- Feature Presenter: Kent Harries
Associate Professor of Structural
Engineering and Mechanics,
University of Pittsburgh
- Presentation: Sustainable Hazard Resistant Construction
Using Indigenous Materials – Bamboo Construction in
Darjeeling and Sikkim
- Primo Gusto Buffet (Vegetarian included)
 - Herb Grilled Chicken Breast, Pepperoni Stromboli, Vegetable
Lasagna, Sautéed Vegetable Medley, Antipasto Salad, Garlic Bread
Sticks, Chocolate Indulgence Cake
- Time: 6-6:45 pm: Dinner
6:45-7:15 pm: Presentation
7:15 pm: Awards Ceremony
- Cost: \$25/adult, \$20/student, \$20/Mathcounts

Feature Presenter

Sustainable Hazard Resistant Construction Using Indigenous Materials Bamboo Construction in Darjeeling and Sikkim



Kent A. Harries, Ph.D., F.A.C.I., F.I.F.C., P.Eng.
Associate Professor, Department of Civil and Environmental Engineering
Swanson School of Engineering, University of Pittsburgh

Interest in sustainable construction materials is growing, with research and construction being initiated worldwide. Structural applications of indigenous material resources, such as bamboo, are an integral part of sustainable development. The use of natural materials for primary construction, however, is limited to cultural-based traditions with little or no standardization. To develop sustainable construction materials, in both an engineering and cultural sense, one must evaluate the traditional building techniques in terms of engineering standards and develop equivalent design methodologies to permit quantification, assessment and improvement of structural performance. This presentation provides an overview of efforts supporting this objective.

Standardization of material test methods for bamboo is critical if the material is to gain greater engineering acceptance. Methods that capture fundamental material properties permit comparison of the behavior and performance of different bamboo species, geometry, weathering and treatment methods. Appropriate standardized test methods able to reliably provide fundamental material properties permit the calibration of material resistance factors and the extension of design guidance to different species. Standardized test methods used in well-defined experimental studies also permit the isolation of factors that affect material performance and behavior. This process represents the path to rational and universal design methods for bamboo.

The work reported includes international collaborations in both India and Brazil through which undergraduate students and PhD candidates conduct extended research in the field. In 2008 and 2010, a team led by Dr. Harries travelled to the Darjeeling region of northeast India in support of these studies on bamboo-based residential construction. Visiting Kalimpong, Mungpoo, Darjeeling and Gangtok, the team met with many local engineers, architects and planners and visited a number of sites incorporating bamboo construction and other applications of sustainable engineering design. On the other hand, two doctoral students have spent 'sandwich years' in Brazil, leading undergraduate research teams who visited for shorter periods of time. This presentation offers some insight into the development of a successful, highly integrated international collaboration.

Kent Harries is an Associate Professor of Structural Engineering and Mechanics at the University of Pittsburgh. Harries is a Fellow of the American Concrete Institute (FACI) and the International Institute of FRP in Construction (IIFC) and a Professional Engineer (P.Eng.) in Ontario, Canada. He is an Editor of the *International Journal of Construction and Building Materials* (Elsevier) and *FRP International* (IIFC). Dr. Harries is the author of over 220 peer-reviewed papers. His research interests include the use of non-traditional materials (from bamboo to CFRP) in civil infrastructure and the design of high-rise structures. He received his doctorate from McGill University in 1995.

President's Message

Dear Members:

As we grind through the frigid days of February, we are reminded of the importance of having a reliable heating system. As we groan over increased utility bills this season, we are reminded of the importance of efficiency and responsible controls. Whether you're spending your evenings splitting wood, shoveling coal (and snow), or bleeding oil lines, we all seem to take a part of our involvement in commercial HVAC&R home with us, except, of course, we pay the bills there! And, as a society, we are all footing the bill for advancement in the world's buildings' design, operation and maintenance. But for most of us, this is a labor of love and the bill paying doesn't come from signing a check, but from the countless hours you put in solving problems and advancing ASHRAE's mission in your work every day. If you find yourself having a case of the Wintertime blues, as I often have, take a moment to step back and remind yourself that your work is important and recognize how rewarding it is to be a part of this organization, the global leader, the foremost source of technical and educational information, and the primary provider of opportunity for professional growth in the arts and sciences of HVAC&R.

I hope you had a chance to join us at UPJ for our joint meeting with the Johnstown Chapter of the Pennsylvania Society of Professional Engineers. Every February, PSPE celebrates Engineer's Week with an awards banquet and presentation. This year, ASHRAE Johnstown was delighted to award two \$500 college scholarships to recognize outstanding scholastic achievement and foster interest for the next generation of our membership.

We are currently organizing next month's joint meeting with ASPE and hope to have an exciting tour lined up, touching on the interests of both plumbing and mechanical specialists in our area. Since March is right around the corner, please stay tuned for future announcements and e-mails from the Chapter. As always, we'd love to see you there!

Thank you,



Chris Conrad
Chapter President

Calendar of Events

ASHRAE Johnstown Chapter 2014-15 Schedule of Events

Meeting Date	Theme/Events	Topic	Speaker	Location
September 18, 2014	Sporting Clays	RP Social Event	<i>Let your aim do the talking</i>	7 Springs Resort
October 14, 2014	Student Activities / YEA	VRF & Standard 15	Dave Heckler	Boulevard Grill Warehouse Room Johnstown, PA
November 19, 2014	ASPE Joint Meeting	Seismic Bracing of Non-structural Components	Eric Grant	Rizzo's Italian Restaurant Windber, PA
December 9, 2014	Distinguished Lecturer Membership Promotion	CO2 Monitoring for Outdoor Airflow and Demand Controlled Ventilation	Thomas M. Lawrence	Boulevard Grill Johnstown, PA
January 13, 2014	Research Promotion	Energy Recovery in Laboratories	Joe Thorndal	Boulevard Grill Johnstown, PA
February 10, 2014	Awards Banquet Student Activities	Sustainable, Hazard-resistant Construction Using Indigenous Materials	Kent Harries	University of Pittsburgh at Johnstown
March 10, 2014	Joint Meeting	Facility Tour	TBD	TBD
April 23, 2014	ASHRAE Webcast	New Tomorrows for Today's Buildings	Existing Building Commissioning	H.F. Lenz
May 12, 2014	Technical Tour	TBD	TBD	TBD

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