

HOUSING RESEARCH CENTER

PURDUE UNIVERSITY

Department of Building Construction Management

401 North Grant Street

West Lafayette, IN 47907-2021

ANNUAL REPORT – 2011

2011 ACTIVITIES

- 1. Solar Decathlon House Competition Team.** An interdisciplinary team led by BCM and MET departments was successful in placing second in the International Competition sponsored by the Department of Energy. The INhome was on display on the National Mall in Washington, DC during late September and early October of 2011. This campus wide effort is being led by William Hutzel (MET), Dr. Mark Shaurette (BCM), Brian Loss (BCM) and Eric Holt (Ph.D. Student – BCM). There were 18,549 visitors to the INhome, included Senator Richard Lugar and Secretary of Energy, Dr. Steven Chu. The INhome tied for 1st in Energy Balance, 2nd in the Comfort Zone, 2nd in Affordability, 3rd in Hot Water Production, and 2nd Overall. The INhome is back in Lafayette IN and being prepared for a five year research study with a real family occupying the home. After an extended open house period it will be sold to a low-income homeowner. The home's energy use will be remotely monitored and analyzed until 2016.
- 2. Glen Acres/Vinton Planning and Reconstruction of a Deep Energy Efficiency Retrofit Demonstration home** for Lafayette, Indiana. This three year \$271,159 project includes research, planning, demonstration, and educational programs to support and guide the Department of Energy funded Better Buildings Lafayette energy efficiency retrofit loan and grant program. BCM assistant professor, Dr. Mark Shaurette (PI).
- 3. Homebuilding Education Leadership Program (HELP)** (Co-PI, Robert F. Cox and Dale Koehler) Incorporated the CGP, CAPS, & RCS professional designations in the BCM curriculum as part of the Residential Construction Management Specialization coursework. Purdue BCM had NAHB Education License and approved instructors in place for the Spring 2008 semester. The CGP, CAPS, & RCS designation courses are incorporated into the Purdue Residential Construction Management Specialization courses. At the end of the 2011 Fall Semester, Purdue had a total of 119 students with 142 designations.

# of Students	CGP	CAPS	RCS	Total
119	85	31	26	142

Purdue has worked with the local Builders Association of Greater Lafayette (BAGL) and the Indiana Builders Association (IBA) as part of our HELP grant agreement. A Purdue instructor is the Education Committee Chair for the BAGL

Our NAHB Education Certified instructors are on the CGP, CAPS, & RCS Instructor list for the Indiana Builders Association.

Eric Holt, CGP, CAPS, RCS Instructor, has been nominated for the NAHB CGP & CAPS Instructor of the Year award.

Reports and Publications

1. Koch, Daphene C., Jason Kutch, William J. Hutzler, and Eric Holt. 2010. Comparing Swiss and U.S. homes in the area of energy efficiency. *Technology Interface Journal*, Volume 10 No.2, ISSN# 1523-9926. <http://technologyinterface.nmsu.edu/spring2010>

Planned or Anticipated Journal Publications

1. Holt, E., Loss, B., & Shaurette, M. (2012). Students Involvement in the Solar Decathlon Competition Giving Context to the Classroom Experience. *ASC International Journal of Construction Education and Research*.
2. Holt, E., Kelting, S., & Shaurette, M. (2012). Incorporating the Certified Green Professional (CGP) Designation into a University Residential Construction Management Specialization. *ASC International Journal of Construction Education and Research*.
3. Kelting, S., Jacobson, B., & Holt, E. (2012). A Study of Interactive e-lessons Use in a Residential Construction Management Course. *ASC International Journal of Construction Education and Research*.
4. Holt, E., & Kelting, S. (2012). Incorporating the NAHB Professional Designation into a University Residential Construction Management Specialization. . *ASEE Journal of Engineering Education*.
5. Holt, E., & Miller, S. (2012). The Impact of Design and Construction of a Solar Home on Solar Decathlon 2011 Visitors. *2nd International High Performance Buildings Conference*.
6. Patel, S. and Hastak, M. (2011). A Framework to Construct Post-Disaster Housing. Journal paper under review in the *International Journal of Disaster Resilience in the Built Environment, Emerald*.

Anticipated Conference Proceedings:

7. Holt, E., Loss, B., & Shaurette, M. (2012). Student Involvement in the Solar Decathlon Competition: Giving Context to the Classroom Experience. *Associated Schools of Construction, International Proceedings of the 48th Annual Conference*, Birmingham, UK.

8. Shaurette, M. (2012). Better Buildings Lafayette Indiana: The challenges to achieving energy market transformation under U.S. Department of Energy management. *Proceedings of the Retrofit 2012 Conference*, Manchester, UK.
9. Hutzal, W., Loss, B., & Shaurette, M. (2012). Competing in the 2011 Solar Decathlon. *Proceedings of the American Society for Engineering Education, 2012 Annual Conference & Exposition*, San Antonio, TX.

NAHB Student Chapter – 2011-212

1. 36 members
2. Meetings are held each month with speakers, participation in the local chapter of NAHB, and fund raising activities to off set costs to travel to the national convention.
3. NHE Travel Grant Received for IBS Travel - \$2,000.
4. Seven NAHB Students attending IBS 2012 and competing in the Residential Construction Management Competition
5. Professor Eric Holt serves as the faculty advisor.

Thesis:

Li, M. (2011). *Sustainable Design Optimization of Rural Houses in North China*. MS Thesis Purdue University.