

Working Group Meeting:

Greening Structural Systems of Buildings

Today's Agenda:

- 8.30 Registration and Breakfast
- 9.00 Introduction and Overview of Research to Date
Chris Knowles, OSU
Corey Griffin, PSU
- 9.30 LCA of Structural Materials, Tools and Resources
Peter Reppe, SOLARC
- 10.15 Break
- 10.30 Oregon Sustainability Center, a case study in green structural systems
Lisa Petterson, SERA Architects
Nathan Ingraffea, KPFF Consulting Engineers
Kyle Andersen, GBD Architects
- 11.15 Introduction to Curriculum Design
Christine Theodoropoulos, UO
- 11.30 Working Lunch, Curriculum Design

Curriculum Design Breakout Groups:

Group 1 | Selecting and Evaluating Green Materials

What information is needed (evaluation of materials/systems, standards, objectivity)?
What are the barriers to implementation (availability, economics, building codes, etc.)?

Group 2 | Using Less to do More

Reducing the amount of material used for structure
Structure as thermal mass
Structure as architectural finish

Group 3 | Longevity and Reuse

Adaptive reuse
Recyclability
Maintenance/warranty
Design for disassembly

1.00 Curriculum Design Reports from Breakout Groups and Discussion

2.00 Closing

Research Team



Guest Speakers:

Peter Reppe

Peter Reppe, Mechanical Engineer and Sustainability Specialist with Solarc in Eugene, has over 14 years of professional engineering experience initiating and guiding institutional green building efforts, energy efficiency analysis, and mechanical and energy engineering design. Peter has taught courses on institutional sustainability at the University of Oregon and developed green building workshops at Lost Valley Educational Center. His years of work as a research engineer in Industrial Ecology have provided him with a mastery of carbon accounting and life cycle assessment tools, as well as an excellent understanding of the environmental impacts of the built environment and its use.

John Reynolds

John S. Reynolds is one of the nation's foremost authorities on passive solar design. An Emeritus Professor of Architecture at the University of Oregon in Eugene, he was elected a Fellow of the American Institute of Architects in 2003, Mr. Reynolds has received numerous recognitions for his work in solar design including the Passive Solar Pioneer Award from the American Solar Energy Society and a Portland AIA Honor Award in the 1999 Architecture + Energy Competition. Mr. Reynolds is a member of the Board of Directors for the Energy Trust of Oregon, the American Solar Energy Society, and the International Solar Energy Society. Mr. Reynolds, a widely published author of text books in Architecture, recently presented in his book *Courtyards: Aesthetic, Social, and Thermal Delight* published by Wiley and Sons Inc. the results of his research on the use and benefits of courtyards in buildings.

Catherine Mater

Catherine Mater, president of Mater Engineering in Corvallis, serves as a Senior Fellow to the Pinchot Institute for Conservation based in Washington, D.C. where she provides expertise on new engineering technologies and marketing strategies for secondary wood products. Most recently, she assisted softwood and hardwood product manufacturers in identifying markets for sustainably harvested "green certified" wood products, and served as project manager for all certification pilot projects conducted on public forestlands in the United States. Working with the John D. and Catherine T. MacArthur Foundation, Mater has co-authored a series of textbook case studies documenting the commercial viability of sustainable forest practices throughout the world

Lisa Petterson

Nathan Ingraffea

Kyle Andersen

Research Team:

Chris Knowles

Christine Theodoropoulos

Corey Griffin

Starting in the Fall, Corey Griffin will be an Assistant Professor in the Department of Architecture at Portland State University, teaching design, structures and building technology courses. He studies the potential of integrating architectural design with engineering and construction to create more sustainable built environments. His structures courses focus on decisions architects make that can reduce the environmental impact of a building. In his research, Griffin focuses on building longevity and role of structure in integrated design as a critical components of sustainable architecture.

Jennifer Allen

Dr. Jennifer H. Allen is the Interim Director of the Center for Sustainable Processes and Practices at Portland State University. In this role, she supports the development of sustainability-related research and curricula across campus, as well as fostering partnerships between PSU and other institutions in the region and internationally. Dr. Allen received a BA in American Studies from Yale University, a Master of Environmental Management from Yale School of Forestry and Environmental Studies, and a Ph.D. in Environmental Science and Public Policy from George Mason University. She has previously worked at the World Bank, Ecotrust, and the Oregon Economic and Community Development Department. She currently serves on the boards of Shorebank Pacific, Portland Energy Conservation Inc., the Oregon Forest Resources Institute, and Illahee, and is a member of the Portland-Multnomah County Sustainable Development Commission.

Graduate Student Support:

Kate Kamke

Brian Lockyear

With a long career in technical design as well as a lifelong passion for art and architecture, Dr. Brian Lockyear has chosen to bring vocation and avocation together. In addition to a BS degree in Electrical Engineering and PhD in Computer Science, Dr. Lockyear has just completed a Masters in Architecture from the University of Oregon. With his background in instrumentation and robotics for NASA, super computer design and logic optimization for integrated circuits, he is now seeking challenging design problems requiring his unique capabilities to create technical solutions that coexist with aesthetic values. Current projects include algorithmic form generation and light modeling.