

Oregon BEST Green Building Working Meeting
February 17, 2009
Materials Breakout Session Notes

Summary of Discussion

- 1) Use of precautionary effect in research selection: up-stream/down-stream impacts
- 2) Manufacturing of materials relative to life-cycle analysis: carbon foot-printing; life-cycle costs etc.
- 3) Focus on new materials with heaviest carbon footprint: cement. Then identify new materials that specifically address these problem products.
- 4) Durability of materials; long-term performance – how does this specifically impact sustainability?
- 5) Rapid testing of materials matched with virtual release of real-time findings and results
- 6) Integrated testing of not just materials, but full systems
- 7) Metrics for materials testing: defining “n” as meeting performance benchmarks
- 8) Fast-tracking new systems for pilot project testing; use of experimental materials to meet IBC and ICC codes
- 9) Establishment of a clearing house: What’s being done; what’s been done; who is doing or can do
- 10) Research on shared and/or reduced liability for new materials and systems use.
- 11) Identify test sites for new materials and systems use
- 12) Materials and systems that focus on rural as well as urban. All research now focused on urban
- 13) Policies and incentives that move the green building and design agenda. What are they, where are they in force, lessons learned; what should happen next and who should do? Bring in discussion of both incentives AND disincentives as motivators,
- 14) More research costing results for construction and life-cycle.
- 15) How to engage more faculty to invest research time in sustainability arena.

Open Discussion Focused on Morning Presentation

- Precautionary Principle should be applied regarding materials. What about the future? Impacts of PVC now, and perhaps nano-technology in the future.

- Full life-cycle analysis, including manufacturing of materials is needed. No discussion of that in the presentations this morning.
- Concrete. Alternative methods of producing concrete to reduce CO2 emissions. Does the material last long enough to make it “green” over its lifespan? Durability of materials in general.
- How to test long term durability of materials in the lab? Perhaps performance is a better term. How do you define and assess performance or durability?
- What if the building is not intended to last for a long time? What if the building needs to be moved or torn down?
- Some cases it may be better for material to not be designed to last forever, but should be made to be transformed/reused at a later date.
- Many buildings are torn down well before the design life is elapsed.
- How to get new materials to market faster. Testing issues, etc. Disconnect between academia and industry concerning testing and evaluation of new materials. Anecdote of 4 year time span from concept to commercialization for a new material.
- A City of Portland committee is working to create a database for new materials used for building in Portland. Considered a very innovative program to speed new material into the industry.
- What does a City need to permit a new material? Seismic code criteria. Not just structural materials.
- What about testing for integrated building technology for multi-story buildings? No facility west of the Mississippi River. What other testing facility needs do we have? Thermal? Fire rating? Perhaps a clearinghouse of testing facilities in the area. Who will the results be accepted by? Results must be from a rigorous testing group.
- Industry is concerned with liability of new materials. Ten-year window of litigation leads to slow adoption. City of Portland is willing to share liability. More readily useful in residential owner-occupied scenarios where litigation is not as much of an issue. University campuses can also serve as test sites.
- Opportunity in Oregon to work with small foresters who maintain higher standards in their businesses. Suggested branding and image improvement associating this local connection with new materials. Promote many of the sustainable practices already on-going in Oregon.
- How do we bridge the gap between rural and urban needs? Water use as an example. Cities use far more water than agricultural uses.

Electricity usage

- There are Federal incentives for farmers to reduce water/energy consumption. Are there any incentives for the use of green building materials?
- Green building material requirements for public building construction could be instituted.
- Base test material selection on risk level/occupancy level of facility.
- Are there really that many new materials being introduced that haven't been tested yet?
- This sounds like a communication issue. Clearinghouse of credible information regarding green building practices is needed.
- What about solutions from other countries that cannot get permitted here?
- Policy concerning sustainability and green building that motivates people to build beyond code. Fee-bate program by City of Portland to encourage more energy efficient design is an example.
- Perhaps liability protection would be a big incentive? Would probably be effective in Europe. Less so in the US.
- Dollar driven incentives, could be tax-based like a gas tax.
- What about economics of what we have? The business opportunity seems to be getting little focus. Focus on built knowledge and implement it locally as "Oregon" branding.
- We need a Ben and Jerry's (like Vermont), to associate our brand.
- Perhaps we already have a niche. Forestry. How can we exploit this responsibly? We can out produce every other state.
- Back to costing. Cost effectiveness of white vs green roof. See Dr. Sailor's research at PSU..
- Rethinking our approach to materials. Paradigm shift is maybe needed, but difficult to push through an industry. Change the way people think by leading by example.
- Back to the clearinghouse idea. Find out about new materials, who can test them, and push Oregon products.

Priorities

What is the major issue for the next 12 months relative to research that can produce green jobs for Oregon?

- 1) Develop clearinghouse

- 2) Information going the other way - - from industry to academic research
- 3) Process to bring research products to market quickly and effectively. Researchers shouldn't have to know how to do this. Someone else should be able to tell them or help them.
- 4) Focus on real world applications in residential building. Use builder's model homes.
- 5) Research into methods of construction that are more green/efficient.
- 6) What are the incentives for researchers to get involved? Considering the demands on faculty. We don't just want to be "testers".
- 7) Modeling of materials as a first step to researching new materials
- 8) Bring the *Precautionary Principle* into research. In terms of the clearinghouse, see PDX Lounge and AskNature.org (bio-mimicry).
- 9) Develop ability to test building systems on a full scale.
- 10) Brand Oregon products and research as an economic development program.

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