



ZERO ENERGY COMMERCIAL BUILDINGS CONSORTIUM

Building Envelope

Working Group

Zero Energy Commercial Buildings Consortium (CBC)

Call Notes

June 24, 2010; 3:00-4:00 pm EST

Key Conclusions

- The WG received comments from a dozen members about their visions for what the envelopes of NZECBs would be 30 to 40 years in the future, assuming that NZECBs were commonplace at that point in time.
- Discussion of the feedback received indicated that the comments captured were comprehensive

Next Steps

- Kurt and Kate will put together a second questionnaire to get member input on barriers to the vision (as outlined in the Vision document)
 - Please submit questionnaires to Garth Otto at gotto@naseo.org by **Friday, July 16**.
- The next call is scheduled for **July 20, 2010 at 3:00pm** with details to follow.

Additional comments will be provided by the following members:

- Peter Fourtunis will volunteer to write about limitations and how to integrate modeling tools
- Medgar knows of a document by DOE that describes 30 of the most common tools and can provide the link. It hasn't been updated in 5 years, so perhaps we can help them build on that.
- Zorana Bosnic will be happy to provide (from a design standpoint) what an "ideal tool" would involve.

Meeting Minutes

- Kate Offringa (NAIMA) reminded members to be mindful of antitrust guideline rules and laws.
- Kurt Roth received comments from previous call from approx. 12 people and invited members to respond to the Vision document.
 - Received wide range of feedback, more feedback from manufacturers is desirable
- Additional feedback on items that could be added to the vision follows below.
 - Pull out codes, standards, and incentives topics more, since much depends on that. Currently this is listed under the design process, but perhaps they deserve their own category.
 - Is there a hierarchy of concepts we want to pick out? Are there underlying ideas or themes for all these components in the vision? Perhaps streamlining of concepts could be useful for a better understanding and direction for the group.

Building Heights

- Regarding the notion of decreasing building height—potentially this could be a short-term issue.
- The CBC's charge is really to look at items holistically, and just because floor-to-(drop) ceiling heights now are shorter now, we shouldn't let that limit us from a different future (practices and technology may change).

- Floor to floor height might be decreased as size of ductwork decreases- this doesn't mean the building height is limited, but can be a driver in energy savings (e.g., greater penetration of daylight, displacement ventilation, etc.)
- Maybe we should use the word "optimize" rather than "decrease" when discussing building heights.

Windows and Energy production

- Windows need to be optimized and correctly sized for building needs and uses. But if we start putting PV on windows, it takes away from lighting benefits, and also may cause designers to choose suboptimal window sizes and characteristics to accommodate PV. .
- Are there new products/technologies that can allow light and generate electricity and not make this into trade-off?
 - Yes, there are already some off-the-shelf technologies that allow light in and generate power. There is also the possibility to use this technology for shading.
 - Active and regenerative technologies that can recover their embodied energy may be another interesting concept to pursue.
- Are there tools or projects to help us optimize Window (glass) to Wall ratios and glazing?
 - Right now, our aesthetic preferences have created demand for a lot of glazing, but perhaps our aesthetic preferences will be vastly different in 30-40 years. Perhaps, the amount of fenestration is currently mostly a design decision.
 - Another member responded that glass to wall ratios are not merely an aesthetic or design choice, especially as more complicated buildings demand integration with other building components and systems. There are many environmental and system integration factors to be considered also. These decisions shouldn't be made only by designers but by an integrated team.

Modeling Tools

- What are the tools to help us make these choices? More than BIM, but tools that can also account for environmental factors.
 - Currently, items like ventilation, humidity, and environmental factors are not incorporated in an integrated modeling tool. There is not one single tool. You would have to look at wind with one tool, climate with another, building performance data with another, etc.
 - Modeling tools make assumptions about climate and environment (both of which are dynamic), so that is one limitation.
 - Current tools often underestimate air filtration and thermal bridging.
- The group envisions more sophisticated and accurate models in 30-40 years.

Additional Comments

The CBC will be at the Summer study on Thursday afternoon; details will go out in newsletter in early July with additional details. Furthermore, the Envelope WG co-chairs will plan a meeting focused on the Envelope WG during the Summer Study.