

CITY OF SEATTLE MAYOR'S GREEN BUILDING TASK FORCE

New Buildings Committee Meeting

Thursday, November 6, 2008, 2:00 pm – 5:30 pm

Seattle Downtown Central Library, 1000 4th Avenue

Washington Mutual Foundation Room (Level 4, Room 1)

MEETING SUMMARY

Prepared by Triangle Associates, Inc.

Attendance

Green Building Task Force				
Last	First	Organization	Committee	In Attendance?
Adelstein	Aaron	Master Builders Association/Built Green	New	✓
Chase	Patricia	International Sustainable Solutions	New	✓
Dinndorf	Jerry	Associated General Contractors	New	✓
Dolwick	Carrie	NW Energy Coalition	New	✓
Drummond	Susan	Foster Pepper, PLLC	New	✓
Dunn	Liz	Dunn+Hobbs	New	<input type="checkbox"/>
Elwell	Chris	Building Construction Trades Council (BCTC)	New	<input type="checkbox"/>
Frank	Kari-Lynn	NAIOP	New	<input type="checkbox"/>
Frankel	Mark	New Buildings Institute	New	<input type="checkbox"/>
<i>Gent</i>	<i>Stan</i>	<i>Seattle Steam</i>	<i>Existing</i>	✓
Gregory	Bert	Mithun	New	<input type="checkbox"/>
Horn	Don	US General Services Administration	New	✓
Howe	Douglas	Touchstone Corporation	New	✓
Jonlin	Duane	NBBJ	New	✓
Lowe	Marco	Triad Development	New	telephone
Mann	Kelly	Urban Land Institute - Seattle	New	✓
Marseille	Tom	Stantec Consulting	New	<input type="checkbox"/>
McCumber	Mary	Futurewise	New	✓
McLennan	Jason	Cascadia GBC	New	✓
Mitra	Anindita	American Planning Association	New	✓
Powers	John	Colliers International	New	✓
Pryde	Curt	Pryde-Johnson	New	✓
Purcell	Paul	Beacon Development Group	New	<input type="checkbox"/>
Richmond	Lisa	AIA Seattle	New	✓
Schuster	Mark	The Schuster Group	New	<input type="checkbox"/>
Southard	Patti	King County GreenTools	New	✓
Stolarski	Bob	Puget Sound Energy	New	telephone

City of Seattle & Presenters			
Last	First	Department	In Attendance?
Antonoff	Jayson	Seattle DPD	✓
Atwood	Glenn	Seattle City Light	✓
Hsu	David	Seattle City Light	✓

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City of Seattle & Presenters			
Last	First	Department	In Attendance?
Indig	Harry	Seattle DPD	✓
Lail	Jennifer	Seattle DPD	✓
Mallory	Sandra	Seattle DPD	✓
Traxler	Maureen	Seattle DPD	✓

Consultants			
Last	First	Organization	In Attendance?
Blair	Ellen	Triangle Associates	✓
Bonham-Carter	Claire	EDAW	✓
Kern	Michael	Triangle Associates	✓
MacGregor	Alastair	DMJM H&M	✓

General Public (<i>several in attendance, none signed up to speak</i>)			
Last	First	Organization	In Attendance?
			<input type="checkbox"/>

Meeting Purpose

The purpose of this meeting was to provide the Committee with information about potential energy efficiency solutions “beyond the building envelope” and energy code update policy options, and to get the Committee members’ input on these topics. City staff also presented a summary of the Existing Building Committee’s discussion of continuous monitoring of performance.

Welcome and Updates

Facilitator Michael Kern of Triangle Associates opened the meeting and noted that there would be time available at the end of the meeting for public comment. Michael reviewed the agenda and meeting materials and led a round of introductions.

Michael reminded the Committee that its next meeting had been rescheduled for November 13, 2:00 PM – 5:30 PM, at the Seattle Municipal Tower, Room 1650. The City agreed to provide review information to facilitate Committee discussion at the Nov. 13 Committee meeting about all of the policy options under consideration.

Michael said that the Existing Buildings Committee had not met since the previous New Buildings Committee meeting, so there would be no Existing Buildings Committee update.

Jayson Antonoff, City of Seattle Department of Planning and Development (DPD), provided the following updates about information that the Committee had requested at previous meetings:

- Seattle City Light (SCL) is continuing to compile information about power bought and sold by SCL and about SCL rate structures. Glenn Atwood, SCL, noted that there is almost always demand when SCL has excess power. He said the income from selling power is fundamental to SCL’s economic analysis of energy conservation. He pointed out that as demand increases, SCL may no longer have a surplus and may need to buy fossil-fuel based power.

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- The City will present information at the Dec. 2 Green Building Task Force meeting about how City activities are being synchronized with the Western Climate Initiative and the Governor's Climate Action Team.
- The City will bring to the Committee an idea of what it would cost to have DPD administer green building standards versus the cost of third party certification.

Solutions "Beyond the Building Envelope"

Claire Bonham-Carter, EDAW, provided an overview of district heating and cooling, a topic that the Committee had asked to add to its work plan. Claire said that no policy scorecard was developed for this policy option because it had not originally been assigned to the policy consultant. Claire's PowerPoint presentation and case studies of district heating are available on the Green Building Task Force website.

Alastair MacGregor, DMJM H&M, pointed out that the building community in Seattle would have to commit to providing hydronic heat to make district heating possible. Claire said that district heating and cooling provides "future-proofing" against changes in energy technology or fuel sources. Rather than retrofitting all buildings with new technology, a central district facility can be retrofitted.

The City provided the following questions for the Committee to consider while discussing potential solutions beyond the building envelope:

1. What (revenue neutral) role is appropriate for the City to play?
2. What recommendations do you have on a specific policy proposal to encourage this?
3. What other thoughts, comments, ideas do you have on these policy options?
4. Should the recommendations to the Mayor include anything on this topic?

Jayson said that the City has previously identified opportunities for district energy systems but has struggled with financing and implementation. He encouraged the Committee to provide specific policy recommendations and input on implementation.

Committee member comments included the following:

1. What (revenue neutral) role is appropriate for the City to play?

- An analysis should be done to identify areas of Seattle that are potentially suitable for district heating and cooling. Perhaps this analysis should accompany current planning for South Lake Union, SODO, and Northgate, maybe as a master plan element.
- The other policy options that the Committee is reviewing are missing the opportunity for the City to unite central infrastructure planning. The City should use a master plan approach for infrastructure elements under City jurisdiction when considering land use changes such as the South Lake Union rezone.
- Starting a district heating and cooling policy would not be revenue neutral. The system may pay for itself and provide other benefits over time, but it would not be an insignificant upfront investment.

2. What recommendations do you have on a specific policy proposal to encourage this?

- The Committee is struggling to provide specific recommendations because we have little information and little time for discussion. This topic requires more attention and analysis, and deserves its own review process.
- One Committee member has observed instances where jurisdictions set priorities such that participation in a district energy system is encouraged over other options that might produce less carbon. This should not be the case.
- It would be worrisome if participation in a district system were mandatory rather than optional, because it would assume that district energy is the best option in all cases.
- District energy makes sense only if it uses waste energy, renewable energy (such as biomass or solar thermal) or combined heat and power. It does not make sense to produce energy from a new fossil fuel fired boiler for the sole purpose of supplying a district system.
- The Committee suggested that areas of the City that are targeted for the most redevelopment and have the greatest heat source opportunities be studied for the viability of combined heat and power and hydronic heating.

3. What other thoughts, comments, ideas do you have on these policy options?

- In addition to efficiency in buildings, the City should consider what fuel sources are being used, and the efficiency with which fuel is converted to end-use energy.
- Who would pay for a district energy system and how?
- On-site generation at the district level, and possibly at the building level, is potentially the biggest energy related opportunity the City has. On-site generation would offset demand on remote central power sources. New York City has started offering incentives for on-site generation. A partnership between Puget Sound Energy and Seattle City Light could make this happen in Seattle.
- Is there a suitable location in Seattle for a pilot project that has a source of waste heat and major development potential?
- South Lake Union might be a good location for a pilot project because of its development potential, and there may be a geothermal source of energy.
- Finding a source of waste heat and delivering it are not hard, but the financing is difficult when it is not clear who the customers will be.
- According to Stan Gent, President of Seattle Steam, heating in South Lake Union is currently electric resistance, which will create 40k metric tons of new carbon. Using mini-boilers would produce 20k metric tons of new carbon. District heating provided by Seattle Steam would produce 10k metric tons of new carbon. If the Seattle Steam system included a biomass facility, it would produce 3.5k metric tons of new carbon.
- Combined heat and power is a good idea. Consider major new users such as train stations as potential users.

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- It would be helpful to know approximately how much energy was saved by district heating in Vancouver, B.C., what level of energy savings could be expected in Seattle, and how the cost return of district heating compares to other policy options.
- District energy should not pre-empt the need to improve building energy efficiency.
- The Cascadia Region Green Building Council's pursuit of net zero carbon for electricity usage will be rendered obsolete if Seattle switches to hydronic heat.
- Most big commercial buildings move heat by heating and blowing air. There are energy savings to be had from switching to hydronic heat, but DPD is currently biased towards air-side economizers.
- By using our low-cost, low-carbon electricity for heating in Seattle, we are missing the opportunity to sell more power at a higher price in the market.
- According to Glenn Atwood, Seattle City Light, if electricity is purchased on the margin for heating it will have a larger carbon footprint than on-site gas combustion.

4. Should the recommendations to the Mayor include anything on this topic?

- This topic should be included in the recommendations to the Mayor. It could have a very meaningful impact on our energy use and carbon footprint, there are numerous examples of successful implementations of district heating and cooling, and this could be a ground-breaking change in infrastructure. However, this Task Force cannot give a specific policy recommendation because there is not enough information available, including information about the expected energy savings versus cost.
- This Task Force is focused primarily on the most efficient consumption of energy in buildings. That focus on efficiency is actually needed for the entire energy system, including generation, delivery and use. One of the Committee members suspects that Vancouver's series of mini boilers is 98% efficient at conversion of therms to energy use, and little is lost in transmission. This is not something this Task Force can fully explore, but it should be considered by the City.
- Staff should recommend a pilot project in the most suitable location to provide data about how a district system works in Seattle.
- The City would need to look at a variety of scenarios, not just one pilot project.
- Information about net carbon reduction, as well as energy savings, would be useful.

Jayson summarized the input he was hearing as being that the Committee members would like to see this topic considered as part of the City's overall energy strategy, but it needs its own analysis and process to develop a more concrete proposal. Recommendations to the Mayor could include further investigation of district energy opportunities and supporting policies, perhaps beginning with a pilot project and a study of opportunities for pairing loads and resources.

Continuous Monitoring of Performance

Jayson provided an overview of the Existing Building Committee's discussion of continuous monitoring of performance, a topic that the New Buildings Committee requested be added to its work plan. Jayson noted that the Committee would be discussing this topic in more depth at its November

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13 meeting. His PowerPoint presentation is available on the Green Building Task Force website. (not available yet).

In response to a question, Jayson said that the Existing Buildings Committee had not differentiated between historic and non-historic buildings in their discussion.

Energy Code Updates

Alastair provided an overview of energy code policy options. His PowerPoint presentation, the energy codes policy scorecard, and energy code case studies are available on the Green Building Task Force website.

At the end of his presentation, Alastair highlighted the following issues for the Committee to consider.

Issues for Committee Consideration

- Stringency of building requirements and the associated level of financial burden to impose on the developer industry.
- How should post construction and measured energy performance after occupancy be considered in policy design?
- Should a performance based compliance path be mandated or incentivized by the City?
- How far can Seattle's policies be developed independently of state and federal code development?
- Suggestions for improvements to the Washington State Codes end on March 31, 2008 (for the next 3 year cycle).

The City provided the following questions for the Committee to consider while discussing the energy code policy options:

1. Should the City be advocating for any particular changes in how the State controls the residential code, and if so what?
2. Is it appropriate/necessary for the Seattle Commercial Energy Code to independently push beyond the goals/approach of the anticipated WSEC updates?
3. If so, which of the following issues should be addressed, and how:
 - Mandatory performance targets
 - Energy vs. carbon targets (site vs. source)
 - Limit to specific sectors, building size or other thresholds
 - Post occupancy evaluation
 - Plug loads and other behavioral or "non-permanent" changes to a building
 - Embodied energy
4. What other thoughts, comments, ideas do you have on these policy options?

Committee member comments included the following:

1. Should the City be advocating for any particular changes in how the State controls the residential code, and if so what?

- The State should provide two residential codes, a regular version and a high-performance version. This would ensure code consistency across the state, which is helpful to builders, but local jurisdictions would be able to choose a more stringent code if they desire.
- Yes, the City needs to be advocating for more stringent residential code.

2. Is it appropriate/necessary for the Seattle Commercial Energy Code to independently push beyond the goals/approach of the anticipated WSEC updates?

Jayson asked the Committee to consider whether it was appropriate for the City to pursue an entirely different approach to code than the State, as opposed to simply enacting more stringent variations of the State's code.

- Yes. I like the graphic in the PowerPoint presentation that shows progress over time needed to reach carbon neutrality by 2030, but I think bigger steps need to be taken earlier. Making more progress at the end of the timeline does not have the same effect as making more progress in the near future. There is limited time to effect change.
- Yes, it is appropriate.
- Seattle's energy code leadership has been successful and should continue. The State follows the City's lead.
- It makes sense for the City to take an entirely different approach than the State if the City code is incentive-based. It could be problematic to have a different mandatory approach.
- Whatever approach the City takes, please collaborate with the City of Bellevue. The City of Seattle needs to take care not to push builders out of Seattle.
- I would be interested in aggressive codes if the additional costs to developers can be offset, perhaps by transferring utility savings into cost offsets. As the region gets more connected, other area cities are becoming more competitive with Seattle, and costlier energy code compliance could impact development.
- Does the Urban Land Institute have data on whether factors like energy code have a significant impact on where builders and businesses locate?
- Anecdotally, businesses in the market for office space view real estate in Seattle and Bellevue as comparable, and part of a single market.
- People thought earlier versions of the Seattle Commercial Energy Code would drive development out of Seattle, but that did not happen.
- City of Seattle and King County have a partnership to address climate change as part of the State Environmental Policy Act (SEPA) review process. This work will trickle into suburban King County cities. Associations like the Urban Land Institute could help this and other efforts to reach suburban cities.

3. If so, which of the following issues should be addressed, and how:

○ **Mandatory performance targets**

- **Energy vs. carbon targets (site vs. source)**
- **Limit to specific sectors, building size or other thresholds**

- The approach for smaller buildings should be different than the approach for larger buildings. It seems appropriate to use incentives to help builders get used to a performance-based approach.
- Because specific technologies change so rapidly, performance-based requirements should be allowed and encouraged at all scales, but mandated at larger scales.
- San Francisco has a 25k square feet cut-off for performance-based code. That might be a good threshold in Seattle.
- One of the Committee members would like to know what portion of the total amount of building in Seattle would be included in an exemption for buildings 25k square feet and smaller.
- Energy should be the target, not carbon, because people have no control over their source of fuel.
- If the objective is to meet the intent of the 2030 Challenge, the target has to include carbon. It cannot be about only energy.

○ **Post occupancy evaluation**

- Post occupancy of actual energy performance is absolutely necessary if we are going to make realistic and quantifiable progress toward our goals.
- Building information is typically modeled during design then provided to building operators. This provides an opportunity to incorporate energy modeling into this process and get feedback on the actual building performance.
- Any prescriptive-based requirements should be tied to performance. Construction should be inspected to make sure it is done properly.
- It is a good idea to do post occupancy evaluation at a set point, because building operators sometimes turn building systems off, misuse them, or the systems do not function properly.
- Utilities have records of historical energy use, but privacy issues limit the extent to which that information can be shared. How much of this information can be made public?
- The idea that building developers and owners are poor stewards is offensive. If an investment is made in energy efficiency, owners will try to get value by operating the building efficiently. If a developer fulfills requirements for energy efficiency, the City should take a leap of faith that the people who invested will manage their investment properly.
- It makes sense that building developers and owners would be good stewards if they have made an out-of-pocket investment in energy efficiency, rather than receiving funds for the investment. If a builder receives money upfront, the incentive for extracting value out of the investment is lessened and the need for performance verification is greater.
- Standards need to be predictable, not based on performance that is evaluated only after the building is completed. If the requirement is to be certified Energy Star or Leadership in Energy and Environmental Design (LEED) Silver, that should be the final measure.

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- “Commissioning” may be a better term than “post occupancy evaluation.” The idea is that systems are not always operated optimally, and some policing is good. Perhaps if the utility goals for a building are being met, that building can be exempted from the commissioning requirement.
- I am not comfortable with holding the development community responsible for occupant habits, but I like the idea of commissioning.

Sandra Mallory, DPD, noted that she had recently attended an information session about disaggregating energy consumption information when evaluating building performance. The idea is to separate plug load from heating/cooling if there is a way to meter them separately, which allows the evaluation of building performance to focus on the aspects regulated by code.

○ **Plug loads and other behavioral or “non-permanent” changes to a building**

- Plug loads are too challenging to address at this time.
- This Task Force should focus on the more permanent aspects of buildings that will be around for 50 years. As long as we make sure systems and infrastructure are done right, a future committee can consider how to reduce energy usage related to behavior and plug loads.
- Plug loads are challenging, because you don’t want to punish someone for being successful. For example, a successful cocktail lounge will require more energy than an unsuccessful one.
- Models do not necessarily capture plug load well, but post occupancy evaluation can account for plug load.
- Plug loads may best be addressed through education. Also, we should make it easier for people to make the “right” decisions. For example, it is not currently possible to easily turn off all plugs or a set of plugs in a building. Perhaps this Task Force could recommend switches to turn off plugs.

○ **Embodied energy**

- Embodied energy is a difficult issue and makes up only a small fraction of energy used. It should not be allowed to distract from more important issues.
- Embodied energy must be recognized for demolition, otherwise preservation efforts will be punished.
- Recognizing embodied energy will not necessarily save historical buildings. It may be necessary to have explicit disincentives for demolition to help with preservation.
- Embodied energy means different things to different people, and it is difficult to incorporate into this Task Force’s conversation. It requires a life cycle assessment approach.

4. What other thoughts, comments, ideas do you have on these policy options?

- The quicker the City can get to carbon neutrality, the more the area will draw businesses that can operate here profitably. That will attract jobs.
- Benefits to businesses and jobs should be evaluated against the cost of getting to carbon neutrality.
- The Task Force needs to recommend a road map to the Mayor, including objectives and the policy steps to reach them.

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- How sensitive are buyers of homes and non-residential buildings to energy costs? If there is research available on this topic (not just anecdotal evidence) it would be helpful to know how much effort is needed to move the market.
- Buyers and tenants have shown interest in LEED certification, but not specifically in energy use. This is probably because energy information is not presented in a consistent and comparable manner.
- The sensitivity of buyers to energy costs depends on the market cycle and if the seller can demonstrate the cost savings.

Jayson said that some of the Existing Building Committee's materials include information about the sensitivity of the market.

Wrap-Up

Public Comment

There was no public comment.

Open Discussion on New Building Issues

Michael invited the Committee to discuss any topics pertinent to achieving the Mayor's energy efficiency goal for new buildings. A Committee member said that it would be important to have performance-based codes rather than prescriptive codes to allow flexibility for innovation. This Committee member noted that innovation may occur faster if the Obama administration invests in green technology. Another Committee asked if performance-based code would make DPD's job more difficult.

Maureen Traxler, DPD, said that performance-based code would be more complicated for DPD, as well as for builders and designers, for a couple of years before everyone could get up to speed. She said that having different requirements for large and small buildings would not be difficult for DPD to handle, as DPD already does this for residential vs. non-residential.

A Committee member asked that the Committee be able to address "big picture" questions at its November 13 meeting, such as the following: to what extent is any mandated cost acceptable? What should the source of funding be for incentives, if any? To what extent can a specific technology be mandated?

A Committee member commented that the City is doing a good job of educating the public and that commercial buyers have become more interested in sustainability and LEED ratings. This Committee member said that the market can tolerate additional costs if they can be passed along, but that the willingness to pay in the marketplace is finite. Another Committee noted that education in the commercial sector is further along than in the residential sector.