



Workshop Results

Market Tenant Occupied Buildings



World Business Council for Sustainable Development

CBI

COMMERCIAL BUILDINGS INITIATIVE

| Solution | Description | Potential Barriers |
|---|---|---|
| Think of a different metric – e.g. energy/employee Different metrics for owner, occupants, tenants, etc. | Think about what's in the denominator Tenants as consumer and producer on info | Need to change long running business practices. |
| Creating a buyer demand for EE buildings | e.g. IBM – willing to pay a premium; particular to large tenants | Does not apply to smaller tenants |
| Performance benchmarking and disclosure | Similar to programs in Europe and others where buildings are clearly graded and identified by level of efficiency / cost. | Need to figure out what/how to communicate/expose performance Many diff programs |
| Simple to include in lease acquisition | How does a tenant request efficiency as part of a lease evaluation? Including accurate energy costs into lease selection. | Need to educate tenants. Standard, believable measurements. |
| How to aggregate “added value” for various stakeholders – utilities, etc. | Opportunity to change roles. For example selling comfort, on (or off site) renewables. | Existing business models may be hard to change. Need to build and prove the right models and mechanisms. |
| Appropriate price signals to various stakeholders | Costs and benefits are properly accrued and paid | Present model has the systems investment from the owner (developer) and energy paid by tenant. No incentive to save. |
| Risk minimization strategies | Make the development of ZEB a low risk venture. | Better documentation, process, lower cost, case studies, proven models. |



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| Building energy accountability across the board | Improved performance for the design, construction and operation of buildings. For example: Bonus \$\$\$\$\$ for design team | Develop criteria and mechanisms to measure and reward / penalize. |
| Technology development on heating side | In some climates lighting and plug load provides necessary heating. Reducing these loads makes heating a larger need. Potential to heat more efficiently using gas or ground source. | Fixing one problem now causes another one. Need to solve for both issues at once. |
| Sub metering of tenants and spaces | Automatically meter and bill tenants for actual energy usage when net leases are used. Eliminates the need for allocation of energy bills. | More expensive |
| Awareness and marketing of EE programs | e.g. LEED silver = x% energy savings Building equivalent of a Prius Point-based score | Education and market awareness. Changing the buying process and expectation. |
| Making EE buildings "cool" (hip) | Convince buyers to want to buy energy efficiency like they buy marble and location today. | For many tenants (buyers) this may not hold any appeal. Developers hesitant to change business practices and take risk. |
| Mandate life-cycle costing | Require that projects include calculation and analysis using life cycle costing, not first cost. | More soft costs to calculate. Also LCC may not match the owners business model. |



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| Change definition of “class a” to include energy and carbon | Change expectations for buyers. | Requires a fundamental market change. Buyers may be interested in energy but this is not what they purchase today. |
| Building located renewable energy sources. | Develop wind, solar, or other renewable energy sources on site at the building. | Not economical today. Requires operational skills and staffing. |
| Harvesting ambient energy within the building. | Capture existing energy sources within the building including radio, solar, and kinetic energy. | Energy sources are very diffuse and difficult to collect. Need to concentrate economically. |
| Smart skins | Intelligent façades that react to daylight changes to provide daylight, and shading. | Cost and complexity. Not well understood. |
| Define reach or stretch goals | Push the industry | Requires change to buyers. May not be realistic. |
| Energy prices | Energy is a minor cost for the owner and tenant today when compared to the costs for rent, personnel, etc. | Economics. |
| Integrated design and operations – include occupants | Involve building occupants in making smart choices regarding energy. | Lack of skills, appropriate tools, feedback and interest. |
| Cost effective technology | Too expensive today | Economics. |



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| Make it tenant visible – extension of the “cool factor” | Expose the use of energy to tenants. Involve them in decision making | No interest or perception. Contrary to the concept of high class space rental. |
| Financial metrics and standards | Worker guidelines, incentives, codes, etc. For example the German standards for lighting and ventilation | Cost! |
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| Barrier | Strategy | Actions | How | Who | Schedule |
|--|---|---------|---|-----|----------|
| Lack single point of accountability for system integration | Appropriate, comprehensive Cx Assure that owners ask for it Enforcement Mechanisms Educate designers, operators | | Need to task ...someone (architect? No extra fee) | | |
| Egrs not rewarded for taking risks | Performance based fees (req clear, recognized baselines) Feedback on performance | | | | |
| Risk avoidance reinforced by prof. liability insurance practices | Owner or project-level policy? | | | | |
| Lack of perf. Info | Easy to understand benchmarks – bldg + component levels Penalties for under-performance by bldg or components (property tax, utility charges?) | | | | |



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U.S. Department of Energy
Energy Efficiency and Renewable Energy



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| Barrier | Strategy | Actions | How | Who | Schedule |
|---|--|---|--------------------------|-----|----------|
| Better modeling tools for integrated design | Make em (work) | | | | |
| Split incentives | New leasing model(s), e.g., incl. tenant responsibility. Utility to cost-share retrofit based on tenant effects (e.g., slower HVAC payback) | | e.g., BOMA "green lease" | | |
| Submetering | Expand utility rebated to submetering | | | | |
| EE not valued in market | Energy performance labeling (EU, CA, DC, Feds...) | Extend E* to other bldg types, etc. Simulation based or consumption based (convergence?) | | | |



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| Mkt doesn't value EE (cont.) | Create stronger tenant demand for EE and HPB | More studies, incl recruitment + retention | | | |
| New business model | Tenant education and feedback | Understand market. "Field Experiments" Durable? Repeatable? Impact of turnover. | | | |
| | Sub-metering | Code requirements Sub-meter ready Scale / distribution | | | |
| | Scale to separate out office space | More RD&D on advanced systems Technology solutions? | | | |
| | Tenants organization? Organize to develop market aggregation | | | | |
| Value Engineering | Evenly weigh changes | Look at early in project | | | |



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ALLIANCE TO SAVE ENERGY
Creating an Energy-Efficient World



U.S. Department of Energy
Energy Efficiency and Renewable Energy



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