**GSA GBAC Building Performance Labeling**

**Task Group Recommendations**

**September 10, 2014**

**Kevin Kampschroer**

**Director, Office of Federal High-Performance Green Buildings**

**U.S. General Services Administration (GSA)**

**RE: Recommendations for the Adoption of Net Zero Energy Buildings by All Federal Agencies**

**Dear Mr. Kampschroer:**

The Building Labeling Task Group was established by the GSA Green Building Advisory Committee in May 2013 to develop recommendations regarding the adoption of building performance labels. The Task Group today unanimously recommends that all Federal agencies adopt labels that display building performance metrics in several categories currently tracked by Federal agencies, including energy, water and waste. The Task Group further recommends that label content be expanded to include metrics related to Indoor Environmental Quality (including temperature, noise, light and air quality) that impact the health, productivity and wellbeing of building occupants. Together these recommendations provide a framework for reporting on existing federal requirements and for reporting on additional metrics consistent with these requirements. The recommendations are further detailed below.

**Background**

Federal agencies are required to measure and disclose energy data under the Energy Independence and Security Act, Section 432, and Executive Orders 13423 and 13514. Executive Order 13514 also sets waste diversion goals and requires annual reporting at the agency level. In addition, the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings (*Guiding Principles*) address topic areas for both new construction and major renovations including optimizing energy performance, protecting and conserving water, enhancing indoor environmental quality and reducing the environmental impact of materials.

The Task Group sees an opportunity to go beyond these minimum requirements through enhanced reporting of performance data at the building level using existing labeling systems and norms, where available, and developing new labeling systems where needed.

The GSA and all Federal agencies are stewards of the environment that can and should serve as role models for the public and private sectors. The Task Group believes that building labels will provide an opportunity for the Federal government to set an example for transparency and public accountability by measuring and reporting building performance. Labels will enable Federal agencies, facility operators and building occupants to better understand the multiple impacts of buildings in operation. Labels that clearly and concisely convey appropriate information will increase awareness, promote behavior change and allow informed decision-making to improve environmental and economic performance and improve the health and wellbeing of occupants.

**General**

The Task Group makes recommendations in four areas: 1) Energy, 2) Water, 3) Waste, and 4) Indoor Environmental Quality. The Task Group recommends that agencies implement labels for energy, water, waste, and currently measurable indoor environmental factors as soon as possible, and expand label content over time as new health and wellness metrics are developed.

Information should be presented in a consistent format that is clear, transparent and understandable to the general public. Data should be easy to access and actionable with a level of detail appropriate for each user group. Data should be disclosed at the building level wherever possible (in some instances reporting at the facility or campus level may be more appropriate). The data should be periodically updated and prominently displayed within the building itself to raise awareness among building occupants and on line to increase transparency and broad public access to data. For agencies where security is an issue, data should be collected for internal use and reported in such a way that security is not compromised. When in doubt about whether to disclose building data, the Task Group recommends that decision-makers should err on the side of disclosure.

While metrics based on gross square foot or per person normalization are common and effective, label designers should consider other appropriate metrics (e.g. per bed for hospitals or prisons, or per unit of production for industrial facilities). Reporting should be benchmarked against a baseline to monitor progress towards goals. Where benchmarks do not exist they should be established. As requirements, data availability, and understanding of building performance change, so should the labels.

The Task Group further recommends that GSA and other federal agencies establish requirements that they will not lease (or renew a lease in) a facility that does not provide the data required to populate the performance labels.

**Detailed Recommendations**

**Energy**

Improving energy efficiency in buildings is the primary driver of greenhouse gas (GHG) emissions reductions and operational cost savings. Clear and comprehensive information available in real time will enable facility staff and building occupants to maximize efficiencies thus reducing emissions and cost of operations.

1. Energy use data should be uploaded into U.S. EPA’s ENERGY STAR® Portfolio Manager® tool.
2. The energy label should disclose the ENERGY STAR score when available.
3. The energy label should report both Site and Source Energy Use Intensity (EUI) totals.
4. The energy label should report total monthly and annual energy use by fuel type (electricity, gas, steam, etc.) and by building system (e.g. base building, HVAC, lighting, plug load) to provide insight into potential operational changes that could improve performance.
5. Where known, cost data should be disclosed.
6. Where there is not security risk, interval (hourly, 15-minute) utility use data should be made public in real-time.
7. Historic trending information that clearly explains the trajectory of building energy use (getting better, getting worse, staying the same) should be included.
8. Additional energy use analytics should be considered for inclusion in label as deemed useful (e.g. energy related CO2/inhabitant).

**Water**

Water use in buildings is an often-overlooked optimization opportunity. Tracking and analyzing water use information can identify and pinpoint system leaks for repair, identify building use patterns and provide insight into long-term infrastructure planning. Water use labels that provide easily understandable information can be used to maximize efficiency and educate building occupants about ways they can contribute to improved performance.

1. Water use data should be uploaded into U.S. EPA’s ENERGY STAR® Portfolio Manager® tool.
2. If EPA develops a “WaterSense” score, analogous to the ENERGY STAR score, this should be discussed and highlighted over the raw water use data.
3. The water label should report total monthly and annual water use by type (potable/non-potable, indoor/outdoor, domestic/process)
4. Additional water use analytics should be considered for inclusion in the label as deemed useful (e.g. water use/inhabitant)
5. Water use should be reported by building system (sanitary, process, irrigation) to provide insight into potential operational changes that could improve overall performance.
6. The GSA should develop labels which report water withdrawals by source and water discharges to various receiving bodies. These data should be used as a basis for detailed water risk management.
7. Historic trending information that clearly explains the trajectory of building water use (getting better, getting worse, staying the same) should be included.

**Waste**

Tracking waste generation and diversion is a fundamental measure of a building’s operational performance. A waste label will inform individual and agency actions and identify when operational changes are necessary. Waste labels can provide easily understandable information to educate building occupants about ways they can increase diversion and recovery of valuable materials and reduce the absolute volume of waste. The following data should be reported:

1. Absolute volume of waste generated (in tons and/or cubic yards)
2. Absolute volume of waste sent to landfill, absolute volume diverted by type (in tons and/or cubic yards) and the resultant diversion rate (percentage)
3. Type(s) of Municipal Solid Waste (MSW) generated listed by major waste streams including but not limited to food waste, paper/cardboard, plastics, metal and e-waste. C&D waste generated during construction and renovation work and hazardous waste should be reported separately.
4. Relative volume of waste generated per person and per Gross Square Foot (GSF).
5. Historic trending information that clearly explains the trajectory of building waste management (getting better, getting worse, staying the same) should be included.

**Indoor Environmental Quality (IEQ)**

Evaluating Indoor Environmental Quality metrics can improve the efficiency of building systems and increase occupant health, satisfaction and well-being. While some metrics for IEQ are currently available, the Task Group recommends that new methodologies to benchmark data for health and wellbeing of occupants be developed. The Task Group recommends that:

1. Relevant metrics that are currently available (e.g. noise, temperature, light levels, air quality, etc.) be incorporated as soon as possible.
2. Building occupant satisfaction surveys be utilized and incorporated into the IEQ label.
3. Research be undertaken to understand physiological effects of the built environment on occupants and the results of this research be used to develop appropriate metrics for inclusion in future iterations of the label. Methodology would require Federal Agencies to institute pilot project(s) at the building level and that case studies be prepared based on the pilot projects to inform the future development of the labels.
4. Historic trending information that clearly explains the trajectory of building IEQ (getting better, getting worse, staying the same) should be included.

**Conclusion**

Documenting, analyzing and acting on building performance information are essential steps to achieving and sustaining high performance in buildings. On-going assessment of use patterns and trends provides key information useful for increasing operational efficiency, informing long-term planning, implementing new technology and making changes in building use that may necessitate operational adjustment. Access to information in real time enables facilities’ staff to address anomalies and continuously fine tune building systems for maximum efficiency, cost savings and occupant comfort, health and wellbeing. Performance labels that provide easily understandable information can be used to educate building occupants about ways they can contribute to improved performance.

Sincerely,

Building Labeling Task Group

Michael Deane and Brendan Shane, Co-Chairs

Members:

Brendan Owens, Esther Sternberg, Jane Rohde, Maureen Sullivan, Bob Fox, Marshall Duer-Balkind