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Ms. Holly Velez
National Institute of Building Sciences
1090 Vermont Avenue, NW
Suite 700
Washington, DC 20005

Subject: Data Needs to Achieve High-Performance Buildings

Dear Ms. Velez:

Please accept our gratitude for this opportunity to voice our concern about the apparent interruption of the Commercial Buildings Energy Consumption Survey (CBECS) data gathering initiative. During this interval between the advent of global climate change as a universal threat, on the one hand, and the muster of design, construction and building management professionals' awareness that they can, indeed must, do something effective about climate change, we need more high-quality data about building energy performance, not less.

The recent announcements, that lack of budget would necessitate termination of most recent CBECS data analysis, and that the previous data would not be analyzed further, threatens to undermine the best of the approaches mobilized to help the industry guide building design construction and operations toward greater efficiency. In fact, the impact stands to be much worse than undermining: A seven or eight year gap in data may throw all that has been done in prior years into doubt, effectively hitting the 'reset button' for LEED, ASHRAE, NBI and other very powerful consensus efforts. Instead of only depending on energy models (whole-building energy simulations), the industry has been developing plans to turn more to actual performance data subsequent to commissioning, comparing consumption with CBECS data on facilities of similar type and scale. 'Energy Star' ratings have been demonstrated to be highly credible for buildings. Even when we don't know precisely why performance shapes up as we find it does, we have a quantitative basis for 'drilling down' causally, and thereby for instigating improvements over time. Without this knowledge, we are guessing, and the Planet suffers along with our pocket books.

The lessons from LEED-Existing Buildings: Operations & Maintenance, which uses Energy Star Portfolio Manager to index a building against CBECS data, have exerted a powerful influence on the directions the building industry wants to go. Without carefully gathered, refined and shared CBECS data, we are crippled at the most promising moment. Conjecture is no substitute for knowledge. The conjunction of modeling with operational performance data, on an increasing scale for all building types (including cities and whole industries), will initiate an age of accelerating progress in energy and resource efficiency. The benefits reach far beyond the nexus of the argument of whether rapid climate change is human induced (clearly, it is), into the realm of individual and organizational financial responsibility.

Occasionally, inadvertent impacts occur when well-meaning policy-makers make quick decisions. We have to assume that this is one of those occasions. Now, however, it is critical that CBECS not only be restored to appropriate full funding, a miniscule cost in the general scheme of things, but also that the data gathered over other recent episodes be completed, suitably analyzed, and made available as another in the invaluable CBECS stepping stones.

As 'green building' certifier for EDA Architects and for other clients in the region, Weber Sustainability Consulting is a LEED-focused services provider, located in Salt Lake City. On behalf of EDA Architects, we manage ten or more LEED certification projects at any given time, usually for university, local government, and private clients, generally in the 25,000 to 300,000 square feet range. Projects are most often office and classroom buildings, but also include justice and recreational facilities. Weber Sustainability also offers community-scale regenerative economic development planning services, particularly for damaged-lands communities, but always encompassing applications of energy-efficient building planning and renewable energy as a primary bases of community prosperity. Ivan Weber, Principal/Owner, was the founding chairman of USGBC-Utah Chapter, and has been a LEED-Accredited Professional (AP) since 2002, with more than one billion dollars of construction and environmental management in his career portfolio.

The rate of change toward green building in the industry, as a whole, and in both public and private sector support for LEED, is almost incalculable. Nearly 85% of new construction and major office remodeling work requires at least an evaluation of LEED certification options, if not LEED registration. We find this largely to be the case due to interest in accelerating improvement toward energy efficiency and environmental responsibility, substantially for fiscal motivations. Not only is climate change a compelling concern; apprehension that energy utility rates approach a series of rapid rate increases grows. Events of the day in Public Service Commission processes bear out this latter concern, with significant rate increases imminent in both electricity and natural gas generation. Coal-fired power plant cleanup and decommissioning threatens to burden electrical rate-payers with precipitous rise in electrical rates, particularly, as do issues such as management of coal combustion byproducts as hazardous wastes. Carbon taxes may --- should --- alter our choices of energy sources, if we are to 'decarbonize' energy supply within the narrow window before us, after which we enter the dark unknown of an overheated planet. The future will not under-value energy in the same way it has been under-valued before. We can proceed into a new age of more precious energy in a state of knowledge, or we can proceed in a state of ignorance. Lack of mature data is ignorance.

Renewable energy is on the brink of affordability, and yet, we know so little about the types and quantities of renewable generation incorporated into or utilized in our building stock, much less about their relative energetic or economic effectiveness. This is one of several additional data categories we would request, were the opportunity presented. Distinguishing quantitatively among the types of building electrical and thermal loads, particularly among lighting, plug loads and HVAC, would be extremely helpful. Gathering data on building envelope, fenestration and glazing types, fenestration as percentage of envelope area, daylighting utilization, and the basic descriptive information that goes into the usual energy code calculation, or COMCheck analysis, would be extremely helpful. Projects that choose to do LEED 'measurement & verification,' or even somewhat less thorough systems monitoring, could contribute greatly to our accumulating understanding of what are the cost-effective attributes of complex building systems, versus those that may be less effective.

As primarily architectural sustainability service providers, we and the architects we serve are dependent on our mechanical, electrical and energy specialty engineers. The data they need constitutes the data we need. With billions of square feet of commercial buildings poised to be remodeled, wholly or in part, and billions more to be designed and constructed anew, it is imperative that we collectively sophisticate the information we gather and share about what we have done, are doing, and will set out to do. If we cannot rely on 'Target Finder' and the 'EUI' data characteristic of primary building types, then we are at sea in setting performance goals and objectives, and will remain so.

What seems most advisable is the development of a comprehensive data quality plan for building energy performance. In any other field of environmental science, this would be a critical step, one that may affect the choices made by owners, design teams and operators about the technologies and extent of application of data gathering in buildings. We have been flying by the seats of our pants for all human history, with only a few notable exceptions, of which we have learned from organizations such as NBI, NIBS and NEBB. An energy performance data quality plan should be devised to create tools that will be made optimally useful for planners, designers, engineers and operators/managers. We need effective tools, rather than just 'more tools.' Being able to learn of case studies, and of an extensive list of variables in those cases, would be a fantastic service, beyond the collection of aggregated, more generalized data about various classes of buildings. Office and retail buildings, particularly, as well as multi-unit housing, are likely to become more and more important fields for refinement of our energy performance knowledge. Some specialized building types, such as recreational facilities and natatoria, would be helpful, but the effort to make our work statistically significant should be kept in mind in the design of a data quality plan.

The low-hanging fruit for instigating dramatic improvements in building energy efficiency are unparalleled: Lower and larger than any other 'fruit' in the economy. Automobile fuel efficiency receives enormous attention, by comparison, and disproportionate information resources, probably symptomatic of our love affair with vehicles. As the Tom Hanks character states in the movie, "Big," when asked about his feelings about a toy that consists of a transformable building, "Who wants to play with a building?" Indeed. But this isn't play. It's serious business, possibly life-or-death business. We need all the best data NOW. Furthermore, we need groups like the those sponsoring this gratifying hearing process to transform these data into guidances for locating, planning, designing, engineering and operating the responsible buildings of the future, the buildings that will make up our cities, towns, neighborhoods and even our homes.

Please accept our sincere gratitude for allowing this opportunity to reinforce the critical nature of this discussion, and of CBECS and other data necessary to achieve high-performance buildings.

Gratefully yours,



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Principal/Owner

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