Buildings Technology Research and Development Subcommittee Meeting

November 19, 2009

Location: 950 L'Enfant Plaza DOE
Time: 1:30-3:30 p.m.

Attendees[1]	**Agency/Office**	
Shyam Sunder	DOC/NIST	BTRD Co-chair
Dru Crawley	DOE/EE-Buildings	BTRD Co-chair
Kevin Hurst	EOP/OSTP	
Paul Domich	DOC/NIST	BTRD Ex-Sec
Brian Holuj	DOE/EE-Buildings	
Alan Schroeder	DOE/EE-Buildings	
Patrick Hughes	ORNL	
Dale Manty	EPA	
Bill Swietlik	EPA	
Joni Tetter	EPA/GSA	
Diane Stewart	HHS	
Robert Chapman	NIST	
Ewa Lewandowski	Smithsonian	
Bob Kollm	US Postal Service	
Renee Tietjen	VA	
Sarah Ryker	STPI	
Stephanie Shipp	STPI	
John Taggart	STPI	
Julio Arrocho	USACE	
Martin Sovoie	USACE	

Next Meeting: December 17, 2009 1:30 - 3:30 PM, 950 L'Enfant Plaza DOE

Meeting Calendar:

January 21, 2010 (pending)	July 15, 2010
February 18, 2010	August 19, 2010
March 18, 2010	September 16, 2010
April 15, 2010	October 21, 2010
May 20, 2010	November 18, 2010
June 17, 2010	December 16, 2010

Introductions: Subcommittee Co-chairs Dru Crawley (DOE) and Shyam Sunder (NIST) opened the monthly meeting of the Subcommittee for Buildings Technology Research and Development (BTRD) welcoming the agency

[1] Active Members not attending identified in light gray

representatives and thanking them for their participation. Participants provided self-introductions.

Review of Minutes: Informal review of Minutes for September 17, 2009 was performed prior to the start of the meeting.

ENERGY STAR Qualified New Homes: Dean Gamble of the Building Energy Analytics group of ICF International presented on the next generation requirements for Energy Star Qualified New Homes. The first set of Energy Star guidelines for new homes was issued in 1996. A subsequent update was performed in 2006. Due to the increased performance requirements appearing in model building codes, the guidelines once again must be updated. The next set of guidelines have been released for review and comment and are expected to be finalized in early 2010, and implemented for new homes permitted after January 1, 2011. The Energy Star Qualified New Homes guidelines are designed for new construction; EPA promotes the Home Performance with ENERGY STAR program to address the unique challenges of existing structures.

The new guidelines target five broad strategies for building energy-efficient homes: controlling air flow, controlling thermal flow, controlling moisture flow, using efficient HVAC systems, and incorporating quality assurance. The *Thermal Bypass Checklist* was the most significant addition to the 2006 requirements and addressed proper air barriers and insulation alignment for improved thermal control. Key changes proposed for the 2011 guidelines include: 1) increased savings, expanded building science checklists, a variable HERS index, and variable performance requirements linked to house size. Taken together, the 2011 Guidelines will be at least 15% more stringent than the 2009 International Energy Conservation Code (IECC) requirements.

Within the 2011 categories, pressure balancing will be used to improve air flow control, minimized thermal bridging and improved insulation installation will improve thermal flow control, and moisture control will be improved through ventilation requirements, dehumidification in hot/humid regions, and water management systems. The water management system requirements primarily refer to the removal of rainwater and ground moisture from the roof, wall, and exterior foundation - they do not address domestic water consumption. The added requirement for whole house mechanical ventilation systems that circulate fresh air has been added in response to the increased envelope integrity, which reduces uncontrolled natural infiltration.

Inspection checklists will be expanded to encompass design and installation of HVAC systems (including fresh air ventilation systems), as well as the new thermal enclosure and water management system requirements.

The new 2011 requirements will treat the building as a complete system, defining minimum requirements for the thermal enclosure system, HVAC system, and

water management system. The changes will help ensure that qualified homes perform as expected and provide meaningful energy savings without sacrificing indoor air quality or durability. The variable HERS index will help improve the parity between the performance and prescriptive compliance paths of the program. Additionally, larger homes will have more stringent performance requirements to offset their increased energy consumption. The 3rd party verification requirement will continue to help ensure that Energy Star guidelines are properly implemented.

Please see the attached presentation for the complete details of the presentation by Dean Gamble and also refer to http://www.energystar.gov/homes.

EISA-Mandated GSA/DOE Clearinghouse: Corey Buffo provided a short presentation on the recently created technology clearinghouse under development in partnership with GSA and in coordination with the Zero Energy Commercial Building Consortium. The challenge is to provide the "right" information in an easily accessible web-based portal. Significant effort will be focused on collecting, coordinating and disseminating information through the clearinghouse. Alliances with other groups will help provide resources and links to information.

NIBS Report: Building Rating and Certification in the U.S. Building Community: Shyam Sunder (NIST) provided a brief overview of a recent National Institute of Building Sciences (NIBS) report that identifies key issues and barriers pertaining to rating and certification systems for buildings in the U.S. Barriers include financial liability, unrealistic expectations by the owner/ architect, confusing, overly abundant, and incomplete rating/certification systems, lack of metrics and consistent methodologies, lack of data correlating ratings with actual performance, absence of benchmark information, increasingly stringent requirements without regard to feasibility, among others. The BTRD Federal R&D Agenda report and subsequent policy recommendations support development of metrics, data, and a uniform methodology that can be verified and adopted at a national level.

Senior Leader Briefing and Workshop on Net-Zero Energy, High-Performance Green Buildings: Paul Domich (EPA) and Dale Manty (EPA) provided an overview of the current status of a spring senior policy briefing and workshop for federal high-performance green buildings. Per direction given by the subcommittee at the September Meeting, Domich and Manty contacted Lynda Stanley (NAS) and invited the Federal Facilities Council to cosponsor the workshop. Stanley welcomed the invitation and indicated that the workshop aligns well with plans by the FFC for the coming year and their goal of hosting a workshop that discusses the full range of federal sustainability requirements. Subsequent to that discussion, Stanley informed the BTRD that GSA was also considering a similar workshop that the co-sponsorship with GSA was possible. The Subcommittee recommended that the Federal Interagency Sustainability

Working Group, the Federal Real Property Council, and the Council on Environmental Quality also be invited as cosponsors. Manty, Domich, Stanley and Joni Teter (EPA/GSA) will develop a draft agenda that incorporates the goals and objectives of all the identified cosponsors.

Briefing to the DOD Deputy Undersecretary for Installations and Environment: Sunder and Domich briefed Mr. John Conger, Assistant Deputy Under Secretary of Defense for Installations and Environment on the BTRD activities. Conger was joined by Dr. Barbara J. Sotirin (USACE), Maureen Sullivan, Director Environmental Management, Lt Colonel Barton Barnhart, and the director of DOD facilities.

The DOD has a large number of buildings (345,000) of varying age and across the full spectrum of climate areas. A majority of the buildings were built in the 1970's and lack modern resource efficiency technologies. Many of the buildings require replacement of existing systems that are beyond their useful lifespan. Significant ARRA resources have been used to replace these aging systems but without a focused intent on improved overall energy efficiency. The DOD is currently installing electricity meters on many of their buildings. This effort will take multiple years to complete. Concerns exist on the security of SmartGrid information and necessary precautions will be needed to ensure confidentiality and data integrity.

The DOD is willing to partner with the BTRD and its member agencies in using DOD facilities as testbeds for new energy efficient technologies and strategies for retrofitting existing buildings. Conger and Barnhart will be invited to participate in the spring workshop.

Action Item: Domich will contact ERDC, NAVFAC and NIST on possible interest in demonstration and testbed projects with the DOD.

Closure: Sunder closed the meeting at 3:30 p.m. and thanked the agency representatives for their participation.