

**GSA Green Building Advisory Committee**  
**1800 F Street, NW, Washington, DC, Room 1153**  
**Wednesday, June 7, 2017**  
**Meeting Notes**

**Committee Chair**

Greg Kats\* Capital E

**Committee Members**

Ash Awad	McKinstry
Charlene Bayer	Hygieia Sciences LLC
Stephanie Stuckey Benfield**	City of Atlanta Office of Sustainability
Paul Bertram	PRB Connect
CJ Córdova**	U.S. Department of Veterans Affairs
Ralph DiNola*	New Buildings Institute
Projjal Dutta*	New York State Metropolitan Transportation Authority
Jennifer Frey	Sellen Construction
Chris Garvin*	Terrapin Bright Green LLC
Dave Gibson	U.S. Environmental Protection Agency
Jonathan Herz	U.S. Department of Health and Human Services
David Kaneda	Integral Group
Yvonne Medina**	U.S. Department of Transportation
Victor Olgay**	Rocky Mountain Institute
Brendan Owens	U.S. Green Building Council
Andrew Persily	National Institute of Standards and Technology
Kent Peterson	P2S Engineering
Jane Rohde	JSR Associates
Sarah Slaughter*	Built Environment Coalition
Maureen Sullivan	U.S. Department of Defense
Cyndi Vallina	Office of Management and Budget

**GSA Participants**

Kevin Kampschroer	Chief Sustainability Officer and Director, Office of Federal High-Performance Buildings (OFHPB)
Ken Sandler	Designated Federal Officer, OFHPB
Jeremey Alcorn*	Public Buildings Service, Office of Facilities Management
Michael Bloom*	OFHPB
Brian Gilligan*	OFHPB
Don Horn*	OFHPB
Alexandra Kosmides	Public Buildings Service, Office of Leasing
Bryan Steverson*	OFHPB
Walter Tersch	Public Buildings Service, Office of Design & Construction

\* denotes those who attended via web conference

\*\* denotes those not present at the meeting

## Opening Remarks and Introductions

Designated Federal Officer Ken Sandler welcomed the Green Building Advisory Committee (hereafter “the Committee”). The Committee was established to provide independent advice and recommendations to the General Services Administration (GSA) Office of Federal High-Performance Buildings (OFHPB), as required by the Energy Independence and Security Act of 2007, to improve federal buildings (assets, operations, use, and resilience) to enhance human health and performance, and safeguard social, economic, and environmental security.

Ken provided a brief update that GSA is following up on the [occupancy and energy use study](#) conducted by the Pacific Northwest National Laboratory (PNNL) in support of the [Committee's recommendations on the energy use intensity \(EUI\) metric](#). GSA is currently running additional calculations on the two GSA buildings that were part of the PNNL study in order to be able to say more about the actual energy and cost impacts of staff consolidation into them.

The Committee Chair, Greg Kats, welcomed the Committee members and encouraged them to ground all of their recommendations in a solid business case considering cost impacts.

Kevin Kampschroer, GSA Chief Sustainability Officer and Director, OFHPB, expressed his appreciation for the hard work of the Committee and its Task Groups. As a noteworthy example, the work performed by the EUI Task Group has been useful in supporting policy on energy savings through building consolidation. The Committee's work and accomplishments have positively influenced the work of the government and he encouraged the group to continue along the same lines.

## Health and Wellness: Task Group Report & Discussion

*Chris Garvin, Terrapin Bright Green LLC, Task Group Co-Chair*

*Jane Rohde, JSR Associates, Task Group Co-Chair*

Chris Garvin and Jane Rohde presented the Health and Wellness Task Group's findings and progress to date.

- Definition of Health
  - The Task Group chose to borrow the World Health Organization (WHO) definition of health as: "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."
- Task Group Background
  - Original motion: Propose evidence-based criteria to integrate health and wellness into all government facilities programs, drawing from approaches including buildings and health rating systems and biophilic design strategies.
  - Benefits:
    - Enhance employee health and performance and support agency mission achievement through the adoption of health-focused building design and operations strategies
    - Identify a compelling business case for building-owning or managing agencies to adopt such practices
- The Task Group sought to identify health and wellness provisions, practices and approaches of buildings and health rating systems to help agencies fulfill health and wellness requirements of the [2016 Guiding Principles for Sustainable Federal Buildings](#)
- The Task Group heard a number of presentations on [Fitwel](#) and the [WELL Building Standard](#) to improve its understanding of these health-oriented building rating systems

- From the information gathered, the Task Group created a detailed Existing Buildings Crosswalk, and then a more simplified Checklist, tying the different rating systems and standards to areas of positive health impacts and related Guiding Principles, for use by facility managers and designers:
  - Rating systems and standards included in the Crosswalk include: Fitwel, WELL Building Standard, Department of Defense (DOD) Unified Facilities Criteria, Green Globes, LEED v4, and ASHRAE 189.1
  - Topics highlighted because flagged by the Centers for Disease Control & Prevention (CDC) as having the greatest impact on public health include: diet, exercise, and smoking cessation
- The Task Group also considered how to incorporate health and wellness goals in commercial leasing documents
- Possible Next Steps:
  - Review model leasing provisions to see what is directly or indirectly included in leasing language regarding health and wellness attributes
  - Expand the Checklist into more of a design guidance and reference document, which can link to other more detailed resources and potentially be incorporated in the [SFTool](#)
  - Clarify which systems offer third party verification or certification
  - Consider costs associated with recommendations included in the Checklist
  - Evaluate additional guidelines, standards, or rating systems that should be added into the listing

### **Health and Wellness Task Group – Committee Comments**

- Consider the challenges for design professionals in achieving positive health impacts:
  - Designers to date have focused most on health-impacting factors over which they have the most control – e.g., low-emitting materials and ventilation to improve indoor air quality
  - The interventions that CDC has found to have the greatest impact on public health require occupant behavior change, which building professionals can influence (e.g., with more accessible stairways) but can't control
- Provide more background on Fitwel and the WELL Building Standard
- Discuss potential impacts of health-promoting workplaces on occupant performance and productivity
- Research international health-oriented building programs as well
- Consider the extent to which costs and benefits of health and wellness accrue to individual employees vs. to the organization

### **High Performance Building Adoption: Task Group Report & Discussion**

*Kent Peterson, P2S Engineering, Task Group Co-Chair*

*Sarah Slaughter, Built Environment Coalition, Task Group Co-Chair*

Kent Peterson and Sarah Slaughter presented the High Performance Building Adoption Task Group's findings and progress to date.

- Task Group Objective
  - Accelerate the deployment of technologies and practices to upgrade existing Federal facilities towards high performance levels

- As technological solutions are widely available, the group is focusing more on how to overcome financial and process barriers to large scale implementation in the Federal context
    - The objective takes into account:
      - The business case, including utility cost savings, resource conservation, and supporting local economies with job creation and workforce development
      - Improved Federal workplace environments, improved occupant performance and agency effectiveness in fulfilling missions
      - Improved Federal resilience, greater Federal building energy and water security
- Progress to Date
  - Gathered information on Federal high performance building progress to date
  - Heard presentations from several Federal agencies (DOE FEMP, DOD, GSA) on energy financing and deep energy retrofits
- Based on data reported to DOE FEMP, the Task Group reviewed energy use intensity (kBTU per GSF) of the top 10 largest property-holding agencies from 2003 to 2015
  - EUI trends from 2003 to 2015 show a clear and steady reduction, though several agencies with challenging building types like labs and hospitals (DOJ, VA, NASA, DOE) generally remained above average governmental EUI levels
- Federal building energy return on investment and energy and water cost avoidance:
  - Savings return of \$43.4 billion by 2030, payback before 2020
  - \$20.3 billion investment equivalent to 162,000 job-years
  - Approximately \$10 billion of *cost-effective* investment potential available
  - Federal agencies have achieved substantial water savings as well (\$188.7 million in 2016)
- Alternative financing options
  - For on-site renewable energy projects with government ownership
    - Appropriated funding
    - Alternative financing
      - Energy Service Performance Contracts (ESPCs)
      - ESPC ENABLE (for photovoltaics (PV) only)
      - Utility Energy Service Contracts (UESCs)
  - On-site renewable energy projects with private ownership
    - Power Purchase Agreements (PPAs)
    - Real property arrangements (e.g., extended use leases)
- Alternative financing: initial findings
  - Current success is very dependent on agency goals and local champions
  - Between Dec 2011 and Jan 2017, US Federal Government awarded \$4.2B of energy performance contract investment (ESPCs & UESCs)
    - Of that amount, DOD accounted for over \$2B, the Army executing \$1.1B of that
    - GSA has put in place \$540M of ESPC contracts
  - For Army, every dollar of seed money leverages \$75M in third party investment
- Federal deep energy retrofit barriers & solutions
  - GSA has shown that deep energy retrofits achieving double the energy & cost savings can be implemented with no more work than typical ESPCs
  - Solutions include:
    - Bundling projects, taking integrated whole building approach

- Creating a project management office at GSA HQ to streamline contract award and management
- Ensuring major project goals include achievement of deep energy savings

### High Performance Building Adoption Task Group – Committee Comments

- Recommend agencies perform deeper energy retrofits and set minimum efficiency enhancement goals
- Research other financing providers and options besides ESCOs, such as PPAs, community choice aggregation (CCA), and district energy programs
- Look into other potential funding solutions such as establishing a Federal green revolving fund
- Explore opportunities to negotiate new arrangements with utilities, taking advantage of the government's buying power
- Look into the experiences of states in moving their portfolios to high performance, e.g., California Department of General Services)
- Consider the framework to systematize commercial building energy efficiency projects used by the [Investor Confidence Project](#)
- Take into account recent economic trends – rapid drop in cost of renewables, growth in use of long term PPAs – as well as changes in industry infrastructure such as the increasing development of a smart grid
- Be open to strategies that look beyond the boundaries of single buildings, in response to trends such as district energy and heating, considerations of location efficiency, etc.
- Employ forms of analysis that consider all lifecycle costs and benefits, e.g., total cost of ownership
- Leverage the knowledgeable, experience-based voice that GSA brings to Federal policy

### Working Lunch with Presentation: New GSA High-Performance Buildings Study

*Don Horn, GSA Office of Federal High-Performance Buildings*

Don Horn presented findings from a new study to be published by GSA called *The Impact of High-Performance Buildings*

- Background and Approach:
  - The report will be released on GSA's website once it receives final approvals
  - For the purposes of this report, *high-performance buildings* are defined as GSA-owned buildings that meet the Guiding Principles for Sustainable Federal Buildings, while all other buildings are referred to as *legacy stock buildings*
  - The 206 buildings included in the study were federally-owned, GSA-managed office buildings or courthouses distributed across all GSA Regions
  - GSA evaluated five metrics:
    - Energy efficiency
    - Water efficiency
    - Operating costs
    - Municipal solid waste generation
    - Tenant satisfaction
  - GSA compared its buildings' performance with key industry benchmarks from sources including the Commercial Building Energy Consumption Survey

- (CBECS), ENERGY STAR Portfolio Manager, and Building Owners & Managers Association (BOMA)
- Data for building operating expenses are further broken down into operations & maintenance (O&M), janitorial, and utility expenses
- The report includes a section on each of the five metrics including background, data results, and a relevant GSA high performance building case study
- Findings:
  - The study's key finding is that high-performance buildings perform better than their legacy stock counterparts
  - Actual quantitative impacts, including savings in both resources and costs, will be announced when the report is released
- Recommendations to decision-makers in deciding which upgrades will best maximize performance on each measure:
  - Examine in detail the existing conditions and performance of specific legacy stock buildings, to identify opportunities for improvement
  - Maintain a portfolio-wide approach to reducing excess costs of legacy stock buildings via updates or replacement with high-performance buildings
  - Prioritize improvement opportunities within a single building according to net present value, savings to investment ratio, and net operating income
  - Leverage external financing wherever possible, as through ESPCs and UESCs

### **GSA Study on the Impact of High-Performance Buildings – Committee Comments**

- Estimate net present value, and net job creation if possible, of broader high performance building adoption across GSA and Federal building portfolios
- Calculate the costs of GSA's deferred maintenance and the return on investment (ROI) of addressing it proactively
- Provide key tables and graphics from the report for readers to download separately

### **Public Comment Period**

There were no public comments from visitors.

### **Closing Comments & Adjournment**

Kevin Kampschroer thanked all of the Committee and Task Group members for their continued dedication and hard work. Mr. Kampschroer is eager to see how the two Task Groups will move forward with their work based on the comments and feedback from today's meeting. He also thanked everyone for their constructive feedback on the GSA high-performance buildings study.