

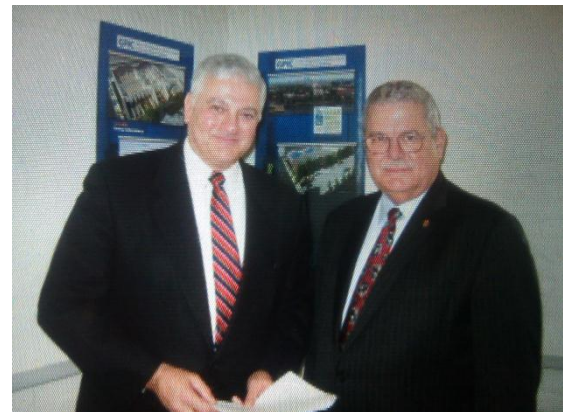


Forging Strategic Alliances

An important component of the EEB Hub's engagement efforts involve creating strategic alliances with key stakeholders in order to influence the acceleration of advanced energy retrofit activity in Greater Philadelphia and nationally. The Hub has quickly established relationships with several organizations that would generate momentum and adoption of technology strategies and policy approaches as well as provide important knowledge to inform our efforts.

ASHRAE

The American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) determines industry standards related to energy efficiency practice and implementation and therefore has a large influence on key technologies for the Hub's integrated approach to retrofit. ASHRAE signed an MOU with the HUB that outlines their willingness to assist in several areas, including research, education, certification, standards and guidelines, and by applying the society's Building Energy Quotient (bEQ) program to buildings at the Navy Yard. ASHRAE may also help obtain As-Designed and In-Operation bEQ ratings for buildings in Greater Philadelphia and can ensure that the Hub considers use of ASHRAE certifications to support its objectives.



EEB Hub Executive Director Dr. Henry Foley with ASHRAE President Ronald Jarnagin

The United Kingdom's Chartered Institution of Building Services Engineers

The Chartered Institution of Building Services Engineers (CIBSE) has developed TM22 Energy Assessment and Reporting, which is a method for assessing the energy performance of an occupied building, based on metered energy use, and includes an inverse-based software implementation of the method. Recent UK and European legislative initiatives support the benefits of performance assessment. TM22 and its software provide support for these assessment needs. CIBSE and the Hub will explore a collaborative effort in determining the best pathway forward with respect to hybrid inverse model and assessment development. Focused follow-up activities will begin with a discussion with the developers of the TM22 software.

CIBSE is interested in following EEB Hub work on energy disclosure laws, which require buildings to publicly share their energy consumption. The Hub is interested in the results derived from a variety of UK programs that have a longer track record than their American counterparts. Policy documents will be exchanged and additional areas of common interest will be pursued and shared.



Hywel Davies of CIBSE

The Joint Initiative on Urban Sustainability



This Joint Initiative brings together public and private leaders from the U.S. and Brazil to serve as a platform for actions addressing the challenges and opportunities of developing urban infrastructure that promotes sustainable development with concrete economic, social, and environmental benefits. The City of Philadelphia has been participating in the JIUS initiative due to its leadership in urban sustainability.

In January of 2011, JIUS participants from the U.S. and Brazil attended a full day of working session at the Navy Yard in Philadelphia, hosted by the EEB Hub. Welcoming remarks were given by Will Agate of PIDC and Laurie Actman of Penn State. There were several roundtable discussions held during the day in which Hub members participated, including one on the Navy Yard/Hub and Fundao Green Tech Park Portfolio Development Process, which discussed proposed projects, community engagement, funding options, synergies between Philadelphia and Rio, and actions moving forward with a focus on social inclusion. The Fundao Green Tech Park in Rio is a technology park that serves as a hub for research centers related to energy and other sectors. PIDC will pursue an MOU with the Fundao Office Park to collaborate on areas of common interest, such as recruitment and retention strategies, sustainability efforts, research and technology programs and financing.



Mayor Michael Nutter, EPA Administrator Lisa Jackson and Brazilian Minister of the Environment Izabella Teixeira tour the Knight Green Jobs Training Center in Philadelphia.

Grid Smart Training and Applications Resource Center (GridSTAR)

Both the EEB Hub and DOE GridSTAR Center have common goals of increased energy efficiency in buildings, boosting regional economic development, and training the workforce with relevant skills. There are many opportunities for best practices to be shared. One major goal of the Hub is to improve the advanced energy retrofit design and delivery process so as to make retrofit more affordable. While much of the savings can be obtained by optimizing the building design and operation itself, additional savings can be obtained by how the building gets connected to a smart electrical distribution network. This “building to grid integration” known as B2G can involve greater use of concepts such as thermal energy storage and conservation-voltage-reduction (CVR). If a building energy management system is connected to a smart grid, the building can participate in delivering services to the electricity market that can generate a revenue stream on an ongoing basis. If the present value of these services is applied toward a building retrofit, a deeper green renovation can be economically possible. The uniqueness of the Navy Yard unregulated micro-grid supports both programs objectives.

GridSTAR is building a smart grid test loop-circuit at the Navy Yard in close proximity to the buildings that will be used by the EEB Hub. This loop will have a net-zero-energy residential structure, solar-energy teaching structure, electric vehicle charging stations, community and grid-scale batteries, and a small solar farm. After the initial period, it will be possible to connect nearby existing commercial buildings into the loop for further demonstration and study of B2G approaches that should benefit both GridSTAR and the EEB Hub.





Delaware Valley Green Building Council (DVGBC) and GreenBuild

The GreenBuild Conference and Expo will be held in Philadelphia in 2013, bringing 30,000+ green building industry professionals to the Hub region. Overall conference planning and management, including agenda creation, is handled by the GreenBuild team at the U.S. Green Building Council (USGBC), with input from the local host chapter DVGBC. It is the world's largest conference and expo dedicated to green building, featuring 3-days of expert speakers, networking opportunities,

industry showcases, workshops and tours of the host city's green buildings.

DVGBC has taken a proactive approach to planning for GreenBuild 2013. On February 2, 2012, DVGBC convened a group of over 50 regional stakeholders to begin planning for the arrival of the conference. Their overall goal is to increase investment in the region and position it as a vibrant, sustainable, and culturally rich place that people want to live, work, and learn.

The GreenBuild conference being held in Philadelphia is a great opportunity for the EEB Hub to educate and engage a wide variety of energy efficient building professionals to share our technology strategies and to highlight demonstration projects as learning opportunities. Opportunities include serving on the host committee, conducting a track of workshops related to the EEB Hub, offering keynote or panel speakers, providing tours of the Navy Yard and Hub facilities, hosting events in the days before and after the event, and more.

Greater Philadelphia Chamber of Commerce

The EEB Hub has partnered with the Greater Philadelphia Chamber of Commerce (GPCC) to deepen our regional engagement with retrofit stakeholders and the business community during our first year of membership. The EEB Hub joined the GPCC in the summer of 2011 and EEB Hub Executive Director Hank Foley was invited to serve on the GPCC board of directors. On June 5, EEB Hub Executive Director Hank Foley gave a presentation to the GPCC's Board of Directors- a unique opportunity to articulate the economic development opportunities that the Hub could bring to the City and region.

On June 13, the EEB Hub co-hosted an event "Energy Management Strategies: Energizing Profits and Calculating Risks" that featured presentations from EEB Hub member United Technologies Corporation, as well as Viridity Energy, PECO, Stradley Ronon and Brandywine Realty Trust. The event was the first of a 4-part series of events that will be held in partnership with GPCC to engage the regional business community in the work of the EEB Hub.

Green Lease Library

The EEB Hub joined with a number of stakeholders, including the U.S. Department of Energy, IMT, Rocky Mountain Institute, BOMA International and Natural Resources Defense Council, to create the Green Lease Library. The website's purpose is to consolidate green leasing resources to provide a one-stop-shop for all audience types-- from building owners and tenants to lawyers and building raters. The green lease library is organized by resource type, and resources are tagged by relevance to audience and building types. On the site, users can browse best practices, toolkits and guidance on how to develop,

negotiate and implement a green lease, which is an important tool in aligning financial and energy incentives between building owners and tenants. Visit the library at <http://www.greenleaselibrary.com/>.

Institute for Market Transformation

The mission of the Institute for Market Transformation (IMT) is to promote energy efficiency, green building and environmental protection in the United States and abroad, primarily by focusing on ways to shift entire market sectors toward a more efficient product mix. The EEB Hub has engaged IMT on a variety of issues and has invited representatives to speak at several EEB Hub workshops.

In recent years, IMT has played a critical role in the work of energy data access and benchmarking and disclosure legislation. They have studied the impacts of a national benchmarking and disclosure policy, as well as best practices from cities that have pursued legislation. IMT has provided assistance to the EEB Hub and other allies in Philadelphia as the City has pursued its own benchmarking and disclosure ordinance. The EEB Hub is also engaging IMT on the topic of green leases, in order to better promote their use to close the split incentive between landlords and tenants and to find ways to improve existing green lease products.



Cliff Majersik of IMT, on the far left, participates in the EEB Hub Data Access Working Group meeting

Alliance to Save Energy

Representatives of the Alliance to Save Energy (ASE) first visited the EEB Hub in August of 2011, along with a delegation of Congressional staff members who were interested in learning more about our work. See a video created by ASE during their visit here: <http://youtu.be/xHBFQudnKYs>.

More recently, ASE invited EEB Hub investigator Dr. Mark Alan Hughes of the University of Pennsylvania to join the Alliance Commission on National Energy Efficiency Policy. The commission is a diverse and bi-partisan group of leaders from business, government, academic and non-profit sectors that aims to identify and reach consensus on a set of public policies that would make the United States one of the most energy-efficient economies.

Finally, the EEB Hub will be working with ASE to develop strategies related to building energy code adoption.