



### **Building Construction Technology Extension Program**

Building operator training will help “re-tune” buildings for quick and cost-effective energy efficiency results

The National Institute of Standards and Technology (NIST) awarded \$455,000 to the Energy Efficient Buildings Hub (EEB Hub) and several of its members to train building operators in the commercial, industrial and educational sectors so that they can more efficiently and economically operate their facilities. The award helps boost the EEB Hub’s objective to inform, train and educate people about proven energy-saving strategies and technologies towards the goal of reducing energy use in the Greater Philadelphia commercial building sector by 20 percent by 2020.

The pilot program will take place over two years and is a part of the Building Construction Technology Extension Program (BCTEP), which is focused on “re-tuning”- a process that can help existing buildings quickly and affordably achieve energy efficiency results. During re-tuning, data is collected from the building automation system to identify opportunities to improve the building operations and guidance is provided on implementing corrections at no or low cost, leading to reduction in the overall energy consumption.

The specific objectives of the pilot project are to: a) Develop a High Performance Building Operator Competency Map that defines the operation, auditing and energy management skills needed to operate high performance buildings; b) enhance curriculum; c) conduct building re-tuning projects; d) conduct professional development for instructors to aid in the deployment of the curriculum and; e) conduct re-tuning projects to demonstrate and evaluate the curriculum and competency map.

The project will be led by EEB Hub members Delaware Valley Industrial Resource Center (DVIRC), Drexel University, Penn State University- who leads management of the EEB Hub- as well as new partners City University of New York, Penn State’s Facilities Engineering Institute and the Pennsylvania College of Technology. An existing re-tuning curriculum and support materials are available from the Pacific Northwest National Laboratory (PNNL), which were developed with support from the U. S. Department of Energy’s Building Technology program. PNNL will participate in this effort as an advisor to NIST on re-tuning curriculum and materials, as well as in-building techniques and methods of re-tuning buildings. The EEB Hub will help to engage the regional commercial real estate community, including Liberty Property Trust, and other large and small property owners.

The proposal focuses on “training the trainers”, who will then be deployed to re-tuning teams that include representatives from the School District of Philadelphia, Liberty Property Trust, DVIRC and their clients and others. These teams will then conduct 35 re-tuning projects for regional industrial, commercial and school buildings, taking before and after measurements that will be analyzed and reported. This work will help create a model that will then be used by Manufacturing Extension Partnerships (MEPs) nationally. The process is outlined in Figure A.

The program will expand the capacity of commercial and industrial facility managers in the Greater Philadelphia region to apply building energy management and re-tuning expertise for the more efficient operation of commercial and industrial facilities which will contribute to the success and relevance of the EEB Hub.

Figure A.

