



Penn State AE leads Research Consortium that has been awarded more than \$129 million for DOE Energy Innovation Hub

The Department of Architectural Engineering is providing the technical leadership on the recently awarded Department of Energy Innovation Hub for Energy Efficient Buildings. This initiative was led on behalf of the Department by **Dr. James Freihaut**, who will be the technical director of the Hub. According to the Department Head, **Dr. Chimay Anumba**, 'It is particularly appropriate that, in its Centennial Year, the Department should be playing a pivotal role in the development of the next generation of energy-efficient buildings'. The funding for the Hub includes \$129 million from Federal sources and an additional \$30 million from the Commonwealth of Pennsylvania. This is the largest ever grant in Penn State's history.

As the project proposed to DOE developed in discussions with potential state, municipal and corporate partners, it became abundantly clear how well respected the Architectural Engineering Department is throughout the building industry as well as governmental building and economic development planners. As one city planner, architect said: "This is the opportunity for Penn State Architectural Engineering to accrue the resources and cement the relationships it needs to fully actualize its already significant impact on the building industry. When practicing as an architect we hired as many PSU AE graduates as we could. "

The program seeks to transform the building industry into a virtual, vertically integrated industry that designs and delivers *integrated systems* having innovative, dynamically integrated and interacting subsystems. New integrated team design processes and user friendly thermal load and energy utilization simulation model tools are to be developed by interdisciplinary teams of building industry, university and national lab partners. Building *system* performance requirements will drive the research and development of novel materials for energy efficient buildings, load dampening and flattening façade designs, dynamic control systems and hybrid, on-site combined heat and power technologies. The goal is to create a systems approach to design and deployment of buildings that is similar to that utilized in product developments in the aerospace, manufacturing and transportation industries. Along with technical challenges, the program seeks to address the public policy, workforce development and education - elementary through university - issues inhibiting energy efficiency progress in building designs. These issues were addressed in transportation, aerospace and manufacturing sectors decades ago. In many ways, due to the nature of the building industry and existing governmental policies, the challenge here is far greater than that ever encountered by the automobile or manufacturing industries, which had clear cut policy and economic competition drives pushing them to systems approaches. The Philadelphia Navy Yard and the partnership established with the City of Philadelphia and other Hub partners provides many buildings for demonstration and refinement of the new design processes and technologies that will lead to a transformation of the building industry.

As Dr. Freihaut indicates "Making the building industry better is what AE already does by providing the best Architectural Engineers in the world. But now it has the opportunity to create the tools and technologies the industry needs to truly transform the building industry and radically improve the energy efficiency of building systems."

See below for the official Penn State Press Release:

<http://www.engr.psu.edu/newsevents/newsdetail.aspx?NewsID=8636&NewsDate=8/24/2010#8636>

For formal DOE Press Release visit: <http://www.energy.gov/news/9380.htm>