

Education and Workforce Platform Meeting David Riley

Department of Architecture Engineering The Pennsylvania State University June 20, 2012 Funded by U.S. DOE



Energy Efficient Buildings Hub

A U.S. Department of Energy Innovation Hub www.eebhub.org







Task 7: Education and Workforce Development

Objective: To inform, train, and educate people about proven energy saving strategies and technologies whether they design, own, construct, maintain or occupy buildings.







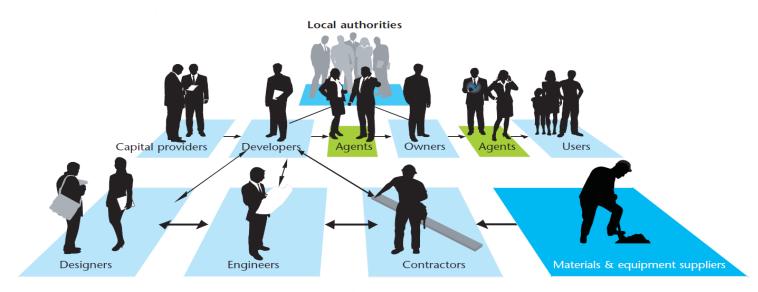


Hub Solves a Complex Problem Regionally

The issues impeding energy efficient retrofits are intrinsically regional in nature:

- Design
- Materials of construction
- Infrastructure
- Energy supply
- Economics

- Public policy
- Existing building stock
- Workforce
- Weather





EEB-Hub Education and Workforce Development

Approach:

Explore and test high leverage point strategies for regional transformation

Engage and learn from the market

Deploy competencybased career map Develop,
adapt,
accelerate
key programs

Train & educate to connect skills to jobs



Shaping EEB-HUB Ed. And Workforce Strategy: Guiding Lessons / Observations

- Energy efficiency workforce sector is larger than new building sector
- Education and workforce needs are vertically distributed across professional and skilled trades
- Trends in development of standards and increased numbers/types of credentials across professional and skilled trades
- Simultaneous need to address energy priorities and create jobs
- Climate of high unemployment, low confidence, failing green jobs programs
- Talent needed to feed new age of energy literacy and independence
- Existing workforce has experience and belief system that will create barriers to change





EEB-Hub Education and Workforce Development

Year 2 Priorities

- Building operator training and certificate programs
- Entry-level energy assessment training and apprenticeship program
- Cultivate integrated design competencies for industry professionals
- Explore schools as can transformational leverage points in regional building energy efficiency
- Design business-focused resource center
- Build partnerships / awareness with national training delivery channels
- Develop competency map for AER Marketplace





Base Competency Model

Occupation Specific Requirements

Energy Operating Commissioning
Auditor Engineer Authority
Energy Energy/Sustain- Facility
Modeler ability Manager Manager

Industry-Sector Competencies

Energy Calculations MEP Measurement People & O&M Efficiency Analysis Systems /Monitoring Process

Industry-Wide Technical Competencies

Bldg Design/ Regulations & Materials & Cost Health, Safety,
Construction QA Resources Estimating Security

Workplace Competencies

Checking & Creative Critical Customer Planning/ Problem Teamwork

Examining Thinking Focus Organizing Solving

Academic Competencies

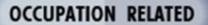
Basic Computer Communication Math & Science Writing Reading

Personal Effectiveness Competencies

Professionalism Initiative Integrity Dependability Interpersonal Skills



Base Competency Model



INDUSTRY RELATED

FOUNDATIONAL

Building Energy Assessment

- New professionals
- Service / Maintenance Workforce
- AEC Professionals

Building Operators

- Energy literacy
- Operational strategies
- Advanced "tuning"

Building Commissioning

- Measure and Verify
- Continuous Commissioning

Integrative Design Leadership

- ANSI Standard
- Process design / facilitation





EEB-Hub Education and Workforce Strategic Goals

 Embed building energy education programs into tactical industry leverage points that create demand and reduce activation energy for AER services

Integration of training and business development

 Accelerate development of wholebuilding perspective of occupants, operators, and AER professionals

Immersive and hands-on experiences

 Tiered approach for engaging next generation of building occupants, owners, and citizens

Schools as
laboratories
Home -> system
-> building





Education and workforce engagement entry points

- For job seekers
 - Training program advising
 - Career alignment
- For building owners
 - Building operator training
 - Energy assessment pilot programs
- For colleges and universities
 - Train-the-trainer support
 - Curriculum design / integration
- Trade associations
 - Train-the-trainer support
 - Business development support





Thank You

- Contact: driley@psu.edu
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