



**US Army Corps
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Subject: USACE Learning Center announces training on High Performance Building Envelopes.

Applicability: Information

1. Course description: This course is designed for architects, mechanical engineers and project managers responsible for new construction and existing buildings retrofit. It will examine sustainable and energy efficient design strategies for the building envelope—the physical separator between a buildings’ interior and exterior. The course will focus on requirements to the High Performance Building Envelope and will introduce Passive House standard as an example of successful design. After an overview of building envelope barriers, the course will dive into heat, air and moisture movement control strategies through the building envelope, along with highlighting the calculations and software tools used by designers to predict energy use. Special attention will be dedicated to different wall assemblies to meet fire codes and prevention of thermal bridges with new construction and minimize their effects during building retrofits. Overall, this course will provide a deeper understanding of the building envelope and its interaction with other building systems. The training offers perspectives from industry experts in building envelope design and retrofit as well as an exposure to technology and analysis tools that are used in the most successful building projects. At the end of the course, the student will be able to apply a series of strategies in a variety of climate zones to optimize the building envelope for energy efficiency.

2. Training Objectives:

a. Building Envelope:

- Understand the relationship between building envelope systems and the other systems of the building
- Learn techniques for improving efficiency and durability of the building envelope in new construction and existing buildings retrofits
- Role, type, and location of thermal, air and vapor barriers for different climates
- Achieving thermal bridge-free construction: design and analysis tools

b. High Performance Building Envelope:

- Adapting high-performance envelope systems to U.S. climates
- Principles of high performance building envelope design and construction
- High Performance Building envelope products and their installation
- Window detailing and innovative window systems
- PHPP – the essential Passive House design tool

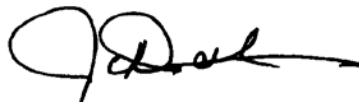
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- Non-residential Passive House projects: offices to swimming pools; new construction to retrofits.
 - Introduction to Passive House training for professionals and craftsmen
- c. Air Barriers:
- Principles of successful air-tightness requirements
 - U.S. Tri-Service air barrier design & testing specifications
 - Case studies: Air tightness design & testing in new and retrofitted buildings at Army installations
- d. Mechanical Systems:
- Exposure to energy efficient HVAC for buildings with low internal loads
 - Calculation of loads for energy efficient building envelopes
 - Balancing air quality and energy efficiency
- e. Quality:
- Tradesman certification
 - Building envelope commissioning
- f. High Performance Buildings Relationship to Sustainability and Energy Ratings:
- High Performance buildings comparison to LEED and ASHRAE 189.1
 - The relationship between ASHRAE 189.1 and 90.1

3. Logistics: This pilot course is open to all government and private sector participants. Tuition will be nominal and only used to offset any direct costs. The course will be held from 0800 to 1700 on 6-8 MAR 2012 in San Antonio, TX. The exact facility location and hotel information will be announced shortly.

4. HQUSACE POC for this action is Ms. Lyndsey Pruitt, HQUSACE (CECW-CE-D), 202-761-8900, Lyndsey.N.D.Pruitt@usace.army.mil

FOR THE COMMANDER:



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