

BUILDING GREENSBURG

A Building America Seminar Series on Affordable, Energy-efficient Construction Techniques

The US Department of Energy's Building America program will be offering a special, five-part training series for builders and homeowners involved in rebuilding Greensburg as a healthy, energy efficient and affordable town.

Each seminar will include a 1/2-day tour of current re-construction projects in Greensburg where participants will learn about and examine best practice construction methods. The field visit will be followed by a 1/2-day in-class training session lead by residential construction experts from Building America project teams.

Please note that the curriculum outlined below may change to best suit the registered participants. Interested parties are encouraged to enroll early.

Online registration is available at www.buildingamerica-greensburg.com or by contacting Jeff Melvin at jeff@buildingscience.com or (978) 589-5100.

CURRICULUM

Date		Schedule	Speakers
Sept 8	Part 1	House Design and Foundation Systems Course Introduction Module 1: House Design for a Mixed-Humid Climate Module 3: Foundations and Site Work	Joseph Lstiburek Building Science Corporation Alex Lukachko Building Science Corporation
tba	Part 2	Framing Module 2: Building America Systems Engineering Module 4: Framing Walk-through 1: Foundation Walk-through 2: Framing	Joseph Lstiburek Building Science Corporation (or) Alex Lukachko Building Science Corporation
tba	Part 3	Mechanical Systems and Airtightness Module 5: Water Management Module 6: Airtightness Walk-through 2: Framing Walk-through 3: Airtightness	Kohta Ueno Building Science Corporation Alex Lukachko Building Science Corporation
tba	Part 4	Enclosure Module 7: Mechanical System Design and Selection Module 8: Insulation Module 9: Exterior Cladding Systems Walk-through 3: Airtightness Walk-through 4: Insulation	Peter Baker Building Science Corporation (or) Alex Lukachko Building Science Corporation
tba	Part 5	Finishes, Testing and Commissioning Module 10: Measuring Building Performance Module 11: Mechanical System Commissioning Module 12: Owning an Energy-efficient Home Walk-through 4: Insulation Walk-through 5: Testing and Commissioning	Kohta Ueno Building Science Corporation

IN-CLASS TRAINING

Module 1: House Design for a Mixed-Humid Climate

- Climate-specific Design
- Building for a Mixed-Humid Climate
- Building Science for the Mixed-Humid Climate House
- Introduction to the Sample Plans
- Site and Orientation

Reading Material: *BSC BA Mixed-Humid Climate Case Study*

Module 2: Building America Systems Engineering

- Energy Analysis Overview
- Building Enclosure
- Mechanical Systems
- Choosing Appliances and Lighting

Reading Material: *BSC BA Mixed-Humid Climate Case Study*

Module 3: Foundations and Site Work

- Water Management – Drain Everything
- Foundation Systems Overview
- Ground Water, Capillary Rise and Soil Gas
- Slabs
- Safe-room Construction
- Finishing the Site

Reading Material: *Builder's Guide for Mixed-Humid Climates*

Module 4: Framing

- Advanced Framing
- Using Engineered Wood
- Using Wind Connectors
- Critical Seal During Framing
- Installing Drywall
- SIPS Construction

Reading Material: *Builder's Guide for Mixed-Humid Climates*

Module 5: Water Management

- Water Management – Drain Everything
- Building Form – Overhangs, Surface Water Control
- Drainage Planes
- Window Flashing
- Roofs

Reading Material: *Builder's Guide for Mixed-Humid Climates*

Module 6: Airtightness

- Controlling Airflow - Air Barrier Systems
- The Critical Seal
- Air Barrier Materials

Reading Material: *Builder's Guide for Mixed-Humid Climates*

Module 7: Mechanical System Design and Selection

- HVAC Systems and the Building Enclosure
- Mechanical System Design Overview
- Right-sizing Equipment
- Right-sizing Distribution
- Indoor Environmental Quality

Reading Material: *Builder's Guide for Mixed-Humid Climates*
Ventilation Guide

Module 8: Insulation

- Insulation Fundamentals
- Exterior Insulation
- Insulation Materials

Reading Material: *Builder's Guide for Mixed-Humid Climates*

Module 9: Exterior Cladding Systems

- Reservoir Claddings
- Rain-screen Systems
- Cladding Durability

Reading Material: *Builder's Guide for Mixed-Humid Climates*

Module 10: Measuring Building Performance

- Building Performance Review
- On-site Inspection and Quality Assurance
- Performance Testing Methods
- Trouble-shooting

Module 11: Mechanical System Commissioning

- Installation Best Practices
- Forced-Air System Commissioning
- Air Conditioning System Commissioning
- Ventilation System Commissioning

Module 12: Owning an Affordable, Energy-efficient, Durable Home

- Homeowner Energy Use Overview
- Building Service Life Overview
- The Homeowner's Manual

Reading Material: *Sample BSC Homeowner's Manual*

ON-SITE TRAINING AND DEMONSTRATIONS

Demonstrations will be arranged with product manufacturers where possible. On-site walk-throughs will take place in Greensburg at building sites volunteered by builders participating in the training seminar program.

Walk-through 1: Foundations

- Foundation Walk-through (slab insulation, capillary breaks, drainage)
- Superior Wall Demonstration
- ICF Demonstration

Walk-through 2: Framing

- Advanced Framing Walk-through
- Window Flashing Demonstration
- SIPS Demonstration

Walk-through 3: Airtightness

- Critical Seal Walk-through and Demonstration

Walk-through 4: Insulation

- Insulation Installation Techniques and Demonstration (Fiberglass, Cellulose, Spray Foam)
- Exterior Finish Walk-through

Walk-through 5: Testing and Commissioning

- Blower Door and Duct-Blaster Test with ENERGY STAR Rater
- HVAC Commissioning Walk-through



The U.S. Department of Energy's Building America Program is reengineering the American home for energy efficiency and affordability. Building America works with the residential building industry to develop and implement innovative building processes and technologies – innovations that save builders and homeowners millions of dollars in construction and energy costs. This industry-led, cost-shared partnership program uses a systems engineering approach to reduce energy use, utility bills, construction time, and construction waste.

For more information, visit our website at: www.buildingamerica.gov

For more information about NREL, visit: www.nrel.gov