

# Agenda

## Introduction

Change everywhere

## Passive House Roots in the US and Canada

The 1973 oil embargo and first efforts at energy efficiency

“Mass & glass” vs. improved envelope

Synthesis in first Passive House

## Passive House Standard: Purpose, Principles and Development

Adoption of US energy efficiency standards

Passive House: voluntary, measured performance-based building energy standard

Overview of PH standard's criteria

Common elements in achieving the criteria

Energy calculation tools: an introduction to tools and their functionality

Certifying agencies in US: PHI and PHIUS

CPHC training

Integrated design process

## Architectural Elements of Passive Houses in our Climate

Size and form

The building envelope

- Super-insulated envelope
- No thermal bridges
- Airtight

Solar orientation

Summer shading and cooling strategies

Winter solar gain and heat retention strategies

Energy recovery ventilation

High efficiency mechanical equipment

High efficiency lights, fixtures and appliances

Integrating renewable energy technologies

## Mechanical Systems in Passive Houses

Return to less reliance on active measures

- Effects of better envelopes
- Effects of internal gains
- Attention to glazing percentage
- Energy recovery ventilation
- Dehumidification
- Air distribution
- Domestic hot water
- Energy-efficient appliances

## Passive Houses in Mixed Humid, mid-Atlantic

Limitations on design

Spec house

Zero and positive energy houses

Basement construction

Modular houses

Multi-family

## Retrofits

Single family retrofit

Multifamily retrofits

## Passive + Direct Current Microgrids to Facilitate Net Zero Energy

## Questions

**Passive House: Planning and Design**  
Richmond, VA - Wednesday, July 24, 2019

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# Learning Objectives

## You'll be able to:

**Study** the roots of the Passive House standard in the US and Canada.

**Explore** the Passive House certification process and review energy calculation tools.

**Discuss** architectural elements and mechanical systems of Passive Houses.

**Adapt** Passive Houses for the mixed humid, mid-Atlantic region.

**Review** single family and multifamily retrofits.



# Passive House: Planning and Design

Richmond, VA - Wednesday, July 24, 2019



**Study** the roots of the Passive House standard in the US and Canada

**Explore** the purpose, principles and development of the Passive House Standard

**Discuss** architectural elements and mechanical systems of Passive Houses

**Adapt** passive houses for the mixed humid, mid-Atlantic region

**Review** single family and multifamily retrofits

## Continuing Education Credits

**Professional Engineers**  
6.5 Continuing Ed. Hours

**Contractors**  
Non-Credit Continuing Ed.

**Architects**  
6.5 Continuing Ed. Hours (HSW)  
6.5 AIA LU|HSW



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# Faculty

**David Peabody LEED-AP, CPHC** *Peabody Architects in Alexandria, VA*  
Mr. Peabody has led Peabody Architects, in Alexandria, Virginia, since 1992, designing more than 100 homes and additions. Witnessing and participating in the growth of sprawl in the suburban DC area through the ‘90’s led to awareness that the way building is done today is not sustainable, and a conviction that architects cannot sit on the fence on environmental issues. Since committing the practice to sustainable design in 2000, he has become increasingly active in issues regarding architecture and the environment, and he has made these issues central to the way the firm approaches its work. In 2004, he became a LEED accredited professional, and in 2009 he became a Passive House certified consultant– one of the first architects in the country to achieve this certification. Mr. Peabody earned his Master of Architecture degree in 1977 from Yale School of Architecture.

**Matthew S. Fine LEED-AP, CPHC** *Project Manager at Peabody Architects*  
Mr. Fine has over 10 years of experience in project design, management, and production services. His responsibilities have ranged from conceptual design through contract administration to project closeout. Much of Mr. Fine’s knowledge and expertise centers on multi-family residential, mixed-use, urban infill, interior fit-out and adaptive re-use. Mr. Fine received his Bachelor of Arts in Architecture degree from the University of North Carolina, Charlotte. As a LEED® accredited professional, he continually seeks to push sustainable and innovative building solutions while addressing the most basic, but often overlooked, role of architecture. Mr. Fine is a certified Passive House consultant (PHIUS). Previously, Mr. Fine served as director of ZA+Dpassiv, a division of Zavos Architects. He was the project leader of that firm’s very successful 2015 Weinberg Commons project, a Passive House retrofit of three 1950’s multifamily housing units. He also has experience in high-performance single family homes. He designed Arlington’s first Passive House in 2012, and two Passive House townhouses (Habitat Empowerhouse) in Ivy City 2014.

# Seminar Information

**Hyatt Place Richmond/Arboretum**  
201 Arboretum Place  
Richmond, VA 23236  
(804) 560-1566

**Tuition**  
**\$289** for individual registration  
**\$269** for three or more registrants from the same company at the same time.

**Included with your registration:** Complimentary continental breakfast and printed seminar manual.

**Receive a reduced tuition rate of \$101** by registering to be our on-site coordinator for the day. For availability and job description, please visit [www.halfmoonseminars.org](http://www.halfmoonseminars.org).

## How to Register

- Visit us online at [www.halfmoonseminars.org](http://www.halfmoonseminars.org)
- Mail-in or fax the attached form to 715-835-6066
- Call customer service at 715-835-5900

**Cancellations:** Cancel at least 48 hours before the start of the seminar, and receive a full tuition refund, minus a \$39 service charge for each registrant. Cancellations within 48 hours will receive a credit toward another seminar or the self-study package. You may also send another person to take your place.

## Continuing Education Credit Information

This seminar is open to the public and offers 6.5 continuing education hours to professional engineers and architects (HSW) in most states. Educators and courses are not subject to preapproval in Virginia.

This event has been approved by the American Institute of Architects for 6.5 HSW Learning Units (Sponsor No. J885). Only full attendance can be reported to the AIA/CES.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida, Indiana (License No. CE21700059), Maryland, New Jersey (Approval No. 24GP00000700), North Carolina, and North Dakota.

This seminar offers a non-credit continuing education opportunity to construction contractors; it has not been approved by any state contractor licensing entity for continuing education purposes.

Attendance will be monitored, and attendance certificates will be available after the seminar for most individuals who complete the entire program. Attendance certificates not available at the seminar will be mailed to participants within fifteen business days.

# Additional Learning

## Webinar Series

### Fire Protection and Building Codes

- **Introduction to Fire Protection and Life Safety Design**  
Thurs., June 6, 2019, 11:00 AM - 12:30 PM CDT
- **Occupancy Classifications**  
Thurs., June 6, 2019, 1:00 - 2:30 PM CDT
- **Means of Egress**  
Fri., June 7, 2019, 11:00 AM - 1:00 PM CDT
- **Fire Protection Features and Occupancy Exercises**  
Fri., June 7, 2019, 1:30 - 3:30 PM CDT

### Distributed Battery Webinar

- **The Distributed Battery Webinar, Part I**  
Wed., June 12, 2019, 11:00 AM - 2:15 PM CDT
- **The Distributed Battery Webinar, Part II**  
Thurs., June 13, 2019, 11:00 AM - 2:15 PM CDT

For more information visit:  
[www.halfmoonseminars.org/webinars/](http://www.halfmoonseminars.org/webinars/)

**Can’t Attend? Order the Manual and Audio from the Live Seminar as a Self-Study Package!**  
Audio recordings of this seminar are available for purchase starting at \$269. See registration panel for more information and please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit..

# Registration

## Passive House: Planning and Design

Richmond, VA - Wednesday, July 24, 2019

| How to Register                                                                          | Registrant Information                                                                                                                                              |
|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Online:</b><br><a href="http://www.halfmoonseminars.org">www.halfmoonseminars.org</a> | Name: _____                                                                                                                                                         |
| <b>Phone:</b><br>715-835-5900                                                            | Company/Firm: _____                                                                                                                                                 |
|                                                                                          | Address: _____                                                                                                                                                      |
| <b>Fax:</b><br>715-835-6066                                                              | City: _____ State: _____ Zip: _____                                                                                                                                 |
|                                                                                          | Occupation: _____                                                                                                                                                   |
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| <b>Mail:</b><br>HalfMoon Education Inc.,<br>PO Box 278, Altoona, WI<br>54720-0278        | <b>Additional Registrants:</b>                                                                                                                                      |
|                                                                                          | Name: _____                                                                                                                                                         |
| <b>Complete the entire form.</b> Attach duplicates if necessary.                         | Occupation: _____                                                                                                                                                   |
|                                                                                          | Email: _____                                                                                                                                                        |
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|                                                                                          | Name: _____                                                                                                                                                         |
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|                                                                                          | Email address is required for credit card receipt, program changes, and notification of upcoming seminars and products. Your email will not be sold or transferred. |
| ( )  I need special accommodations. Please contact me.                                   |                                                                                                                                                                     |

## Tuition

- ( ) **I will be attending the live seminar.** Single Registrant - **\$289.00**. Three or more registrants from the same company registering at the same time - **\$269.00** each.
- ( ) **I am not attending.** Please send me the self-study package:
  - ☐ Downloadable MP3 Audio/PDF Manual for **\$269.00**.
  - ☐ CD/Manual Package for **\$289.00**.(S&H included. Please allow five weeks from seminar date for delivery)

**Checks:** Make payable to HalfMoon Education Inc.

**Credit Card:** *Mastercard, Visa, American Express, or Discover*

Credit Card Number: \_\_\_\_\_

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