

Agenda

Presented by Michael B. Duclos

Understanding the Energy Efficiency of Conventional Construction

History of low energy homes, the new Stretch and Opt-In Energy Codes
History of energy-conserving residential construction
Energy language primer/review, and introduction to thermal bridging
Building code requirements, HERS, energy efficiency incentives

Passive House Standard: Purpose, Principles and Development

Passive House Deliverables: low energy, IAQ, comfort, durability
Energy calculations: how and when to perform them
Energy calculation tools: introduction and functionality
Design features of single and multifamily Passive Houses
Why floor planning can make or break certification - with examples
Passive House certification process
Assembling and managing a team to ensure quality and performance

Architectural Elements of Passive Houses

Passive survivability, with data from three homes
Siting, sizing, insolation, shading and orientation
Super-insulated envelope with minimized thermal bridging
Critical elements - windows, ventilation, dehumidification
Ultra-efficient lights and appliances
Multifamily design considerations
Winter solar gain and heat retention strategies
Integrating renewable energy – single and multifamily

Mechanical Systems in Passive Houses

Heat/Energy recovery and exhaust ventilation systems

- Ventilation system design and commissioning
- Cooktop exhaust hood capture efficiency

Space heating systems, DHW generation methods
Air source heat pumps – important differences
Multifamily mechanical systems considerations

Evaluating Passive House Case Studies

Climate specific passive building standard
Client, planning, and construction considerations
Case studies: single and multifamily projects
Why Passive House now?
Discussion

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Passive House: Planning, Design and Construction

Live, Interactive Webinar - Tuesday, May 24, 2022

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Learning Objectives

You'll be able to:

Discuss the history of energy-conserving residential construction.

Review the new current energy codes, including stretch and opt-in codes.

Examine the Passive House Standard, including energy calculations and design features.

Improve energy efficiency with siting, sizing and isolation.

Explore requirements for windows, ventilation and dehumidification.

Take a closer look at HVAC system design and explore different types of heat pumps.

Learn construction considerations for single and multifamily projects.



HalfMoon Education Live Webinars

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Review facts and figures on residential energy use

Discuss the Passive House certification process

Explore considerations for single and multifamily Passive Houses

Learn about mechanical systems for passive houses

Evaluate climate-specific passive building standards

Review Passive House case studies

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Faculty

Michael B. Duclos *Principal and Founder of THE DEAP Energy Group, LLC*
Mr. Duclos is a principal and founder of THE DEAP Energy Group, LLC, a consultancy providing a wide variety of deep energy retrofit, zero net energy and Passive House-related consulting services. He is a founder, on the board of directors, and director of education of Energy Raters of Massachusetts, Inc., a RESNET-certified HERS Provider specifically catering to independent HERS Raters in New England. Mr. Duclos also founded Energy Efficiency Associates, LLC, to provide conventional home HERS, energy audit, Stretch Code, tax certification and associated verification and consulting services.

Mr. Duclos was an energy consultant on the Transformations, Inc., Massachusetts Zero Energy Challenge entry, which was awarded the second prize of \$15K. He has worked on a variety of Zero Net Energy, DER and Passive House projects, including two National Grid DER projects which qualified for the ACI Thousand Homes Challenge, Option B, both of which have certified with a year of energy consumption data to use less energy than specified by THC Option B. Mr. Duclos conducted a feasibility study of a retrofit to the Passive House new home performance standard. He assisted with the design and preparation of the PHPP for the first EnerPHIT certified home in the US.

Mr. Duclos also worked on the design and certification of the first National Grid DER project to successfully qualify for the Zero Net Energy incentive, which completed a year of use with a surplus of 500 KWHR. He served on the NESEA Zero Energy Task force which analyzed utility bill data from applicants for the annual \$10K award for the best zero net energy home. Mr. Duclos is a founding member and was on the board of directors of Passive House New England, Inc., a non-profit promoting high performance building, including Passive House. He is a member of the Northeast HERS Alliance Technical Committee and was on the MassSave New Construction Program HERS Rater Panel.

Mr. Duclos monitors the delivered performance of his projects using a variety of real time electricity monitors, temperature, RH and CO2 loggers and correlates this data to the expected performance predicted by his energy models. The actual data, and the stories behind the data are made available to the public in speaking engagements in a variety of public venues, and in publications like *Home Energy Magazine*.

Mr. Duclos is an ITC-certified building science infrared thermographer, and he is the Certified Passive House Consultant responsible for the design and certification of the second Passive House in Massachusetts. He holds a B.S. degree in Electrical Engineering from UMass Lowell, and two patents.

Mr. Duclos consulted on the first multifamily Passive House certified in New Hampshire, a 24-unit affordable senior housing facility near Laconia, New Hampshire.

Added Value:
Enhance your learning - a recording of this webinar will be available for attendees to stream online for two weeks after the program date.
(live webinar attendance required to receive live webinar credit)

Webinar Information

Log into Webinar 8:00 - 8:30 am CDT	Break 11:45 am - 12:45 pm CDT
Morning Session 8:30 - 11:45 am CDT	Afternoon Session 12:45 - 4:30 pm CDT

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Continuing Education Credit Information
This webinar is open to the public and offers 6.5 PDHs to professional engineers and 6.5 HSW continuing education hours to licensed architects in all states.

The American Institute of Architects Continuing Education System has approved this course for 6.5 LU|HSW (Sponsor No. J885). Only full participation is reportable to the AIA/CES.

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The International Code Council has approved this event for .65 CEUs in the specialty area of Energy (Preferred Provider No. 1232).

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Additional Learning

Designing to Withstand Tornadic Loads on Buildings with ASCE 7-22
- Tues, April 26, 2022 | 9:00 am - 4:00 pm CDT

Construction Cost Estimating and Value Engineering
- Fri, April 29, 2022 | 8:30 am - 3:20 pm CDT

HVAC Primer for Design Professionals
- Tues, May 3, 2022 | 8:30 am - 4:30 pm CDT

2020 National Electrical Code Update
- Fri, May 6, 2022 | 8:30 am - 4:00 pm CDT

Design Considerations and Mixed Occupancy Options for Speculative Buildings
- Tues, May 10, 2022 | 9:00 am - 3:40 pm CDT

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