

Agenda

Presented by Michael B. Duclos

Understanding the Energy Efficiency of Conventional Construction

History of low energy homes, the new Mass. Stretch and Opt-In Codes
Global Warming Solutions Act and Climate Act of 2021
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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Massachusetts Passive House: Planning and Design

Live, Interactive Webinar - Monday, April 25, 2022

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Learning Objectives

You'll be able to:

Discuss the history of energy-conserving residential construction.

Review the new Massachusetts stretch and opt-in codes.

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

Explore requirements for windows, ventilation and dehumidification.

Take a closer look at ventilation system design and commissioning for passive houses.

Learn construction considerations for single and multifamily projects.



HalfMoon Education Live Webinars

Massachusetts Passive House: Planning and Design

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Review facts and figures on residential energy use

Discuss the Passive House certification process

Explore considerations for a multifamily passive house

Learn about different mechanical systems for passive houses

Evaluate climate-specific passive building standards

Continuing Education Credits

Professional Engineers
6.5 PDHs

International Code Council
.65 CEUs (Building)

Architects
6.5 HSW CE Hours
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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, as well as 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 credit)

Webinar Information

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

Tuition
\$319 for individual registration
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Cancellations: Cancel at least 48 hours before the start of the webinar, and receive a full tuition refund, minus a \$39 service charge for each registrant. Cancellations within 48 hours will receive a credit toward another webinar or the self-study package. You may also authorize another person to take your place.

Continuing Education Credit Information
This webinar is open to the public and offers 6.5 PDHs to professional engineers, and 6.5 HSW contact hours to architects in most states, including Massachusetts. Educators and courses for Massachusetts architects are not subject to preapproval.

Architects and engineers seeking continuing education credit in other states will be able to apply the hours earned at this event, in most cases. Refer to specific state rules to determine eligibility.

The American Institute of Architects Continuing Education System has approved HalfMoon Education as a sponsor of continuing education (Sponsor No. J885). This course is approved for 6.5 HSW learning units. Only full participation is reportable to the AIA CES.

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

Completion certificates will be awarded to participants who complete this event, respond to prompts, and earn a passing score (80%) on the quiz that follows the presentation (multiple attempts allowed).

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Additional Learning

Parking Structure Design, Construction, and Maintenance
- Mon, April 4, 2022 | 8:00 am - 3:30 pm CDT

Adopting and Complying with the Zero Code 2.0
- Tues, April 5, 2022 | 8:30 am - 4:30 pm CDT

International Building Code 2021
- Tues, April 12, 2022 | 8:00 am - 4:00 pm CDT

IBC Building Classification, Occupancy and Mixed Occupancies
- Wed, April 13, 2022 | 9:00 am - 4:30 pm CDT

Structural Forensic Engineering
- Tues, April 19, 2022 | 9:00 am - 3:50 pm CDT

Designing and Constructing a Net-Zero Energy Home
- Tues, April 26, 2022 | 8:30 am - 1:00 pm CDT
- Wed, April 27, 2022 | 8:30 am - 1:30 pm CDT

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Registration

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