

Welcome to the 1<sup>st</sup> Annual

# Energy Design Concepts



*Advanced building science education focused on the core principles of energy-efficient building and responsible design.*

**FEBRUARY 20-21, 2024**

Duluth Entertainment Convention Center (DECC)  
350 Harbor Drive | Duluth, MN



**Thank you for attending the  
1<sup>st</sup> Annual Energy Design Concepts**

Your feedback is welcome. Scan this QR code for a brief survey.



Hosted by:



# Energy Design Concepts



Thank you for joining us for the first annual Energy Design Concepts, a reimagined Energy Design Conference hosted by Minnesota Power. We are looking forward to continuing the yearly tradition of the Energy Design Conference with a more targeted agenda and with energy efficiency best practices (and technologies) still at the forefront. In the future, it is our hope to expand our educational offerings to other parts of our service territory as well as offering virtual and remote educational opportunities. In addition, we look forward to partnering and supporting other educational offerings in our region. See some examples of upcoming events on the next page. We look forward to this new chapter of the Energy Design Conference and are grateful that you are a part of it!

## General Conference Information

- In order to receive CEU credits, you must be present for the entire session. Partial credit can not be given.
- Please wear your name badge at all times.
- Please turn off your cell phone during sessions.
- Available presentation materials will be posted the week following the conference at [www.DuluthEnergyDesign.com](http://www.DuluthEnergyDesign.com).
- You must have your lunch ticket in order to receive lunch.
- We are pleased to offer complimentary wireless service to our attendees. Find network EDC 2024, there is no password required.



Keep up with current updates and educational announcements by signing up for the mailing list here:



## Join us for the Evening Reception

**Tuesday, February 20, 2024, 4:30pm-7:00pm with our partners at BS + Beer!**

Stick around after the Tuesday session for building science trivia and win fabulous door prizes with our friends BS\* + Beer! BS\* + Beer is a local discussion group for builders, architects, engineers, tradespeople, and anyone interested in better building. Building Science\* is simply the laws of physics, thermodynamics and fluid dynamics applied to the building. The group gathers monthly in Duluth and Grand Rapids to discuss these topics in the industry, enjoy a few refreshments, and engage in the high performance building community.

## ENHABIT 2024

**SAVE THE DATE: March 21, 2024**



This all-day conference, at Klockow Brewing Company in Grand Rapids, MN features a range of speakers on sustainable building and design practices and their implementation in real time.

**BS + Beer event** to follow, featuring a round table discussion. Both events are open to the public and are not limited to tradespeople.



**SAVE THE DATE: April 8-11, 2024**

National Home Performance Conference & Trade Show



This conference is the premier industry experience for anyone in home and building performance.

7:30am Registration/Coffee/  
Light refreshments

8:30am Course Begins  
10:00am Morning Break\*  
12:00-1:00pm Lunch Break  
2:30pm Afternoon Break\*  
4:30pm Course Ends\*

4:30-7:00pm Evening Reception with  
BS + Beer

*\*times subject to change*

### Learning Highlights:

- Learn the elements of high-performance homes and how they help respond to code compliance and the many changes in the residential construction industry, as well as consumer expectations.
- Understand the fundamentals of air, heat and moisture flow, and see how they can be applied to make better material and methods decisions.
- Apply the building science to attics, walls, windows, foundations, and HVAC decisions to create high performance homes.
- Identify the building process changes needed to cost-effectively implement high performance homes.

## Houses That Work: A Full Day Building Science Course for New Construction

### Course description:

In this full day session, learn how complex changes in home design, building materials, mechanical systems, appliances, code compliance and consumer lifestyles and expectations make every builder, supplier, and trade contractor's job more demanding. This design workshop will cover the fundamentals of building science and how it is applied to create many different types of high-performance walls and assemblies. The session will address critical home performance elements that exist as a system and are part of energy efficient homes. The fundamentals of building science – air, heat, and moisture flow – will be outlined and applied to help participants make better choices with respect to construction materials and methods. Participants will also learn important information about indoor air quality and cost-effective strategies to be able to offer healthier indoor environments.

At the end of the session, attendees will have a thorough understanding of how to build better attics, walls, and foundations and how to choose HVAC systems that integrate properly into their homes. This session will also cover how building science principles improve the marketing position for building professionals, providing case studies of builders who have changed their building processes and gained return through communicating the value of high-performance homes.

7:30am Registration/Coffee/  
Light refreshments

8:30am Course Begins  
10:00am Morning Break\*  
12:00-1:00pm Lunch Break  
2:30pm Afternoon Break\*  
4:30pm Course Ends\*

*\*times subject to change*

### Learning Highlights:

- Learn the elements of high-performance renovations and how to apply building science to the decision matrix.
- Apply the building science to renovating attics, walls, windows, foundations, and HVAC decisions to create high performance EXISTING, near-zero homes.
- Assess the impact of adding renewables and/or battery storage.
- Identify the building process changes needed to cost-effectively implement high performance renovations.

## Retrofits That Work: Building Science Lessons for Near Zero Renovations

### Course description:

In this full day session, learn how renovating homes to near zero energy can benefit from using building science-based design priorities through:

- Selecting building materials and enclosure options
- Considering new mechanical systems
- Assessing the impact of renewables like PV or storage

This design workshop will cover the fundamentals of building science and how it is applied to assess durable and efficient enclosure upgrades and renovations. This session will also explore efficient, reliable, and resilient HVAC selection procedures and equipment selection and testing.

The fundamentals of building science - air, heat, and moisture flow – OR house-as-a-system – will be outlined and applied to help participants make better choices with respect to construction materials and methods. Participants will also learn important information about indoor air quality and cost-effective strategies to be able to offer healthier indoor environments.

Attendees will gain a thorough understanding of how to approach deep energy or near zero renovations, while ensuring the outcome of a durable, safe, efficient, and comfortable residence.

# 2024 EDC Continuing Education Credit Guide

## Continuing Education Credits Instructions

- Refer to the grid below to see which credits are offered for each course.
- You must attend the full session to receive credits. Partial credit cannot be given.
- At the end of each day, CEU sign-in sheets will be available in the Harborside lobby. Stop by to fill out the sign-in sheet at the end of the course in order to receive credit.
- All CEUs will be facilitated by EEBA. You are responsible for providing the appropriate builder numbers on the sign-in sheets to receive credit.
- Check the box on the CEU sign-in sheet if you'd like to receive a course completion certificate.

Please direct any questions about Continuing Education Credits to:

**Nancy Bakeman**  
nancy@eeba.org

Tuesday, February 20, 2024		Houses that Work				
AIA	NAHB	NATE	RESNET	NARI	MNDLI	WI-DSPS
8	7	4	5	6	5.5	5.5

Wednesday, February 21, 2024		Retrofits that Work				
AIA	NAHB	NATE	RESNET	NARI	MNDLI	WI-DSPS
6	7		5	6	6	6

<b>AIA</b> = The American Institute of Architects	<b>MNDLI</b> = Minnesota Department of Labor and Industry
<b>NAHB</b> = National Association of Home Builders	<b>WI-DSPS</b> = Wisconsin Department of Safety and Professional Services
<b>NATE</b> = North American Technician Excellence	
<b>RESNET</b> = Residential Energy Services Networking	
<b>NARI</b> = National Association of the Remodeling Industry	

**Please note:** Due to the new format of Energy Design Concepts in 2024, BPI Continuing Education Credits will not be offered. If you are in need of BPI credits, visit [www.building-performance.org](http://www.building-performance.org) for a resource to obtain your credits online.

## 2024 Presenter - Andrew Oding



Andrew Oding is partner at Construction Instruction and Vice President and Director of Building Science with Building Knowledge Canada. With an extensive background as a builder for 20+ years, Andrew brings a real-life practicality to building science principles and their in-field applications. As a recognized building science trainer by the government of Canada-Office of Energy Efficiency, Building Science Specialist (University of Toronto), and HVAC designer, Andrew is working closely with the development of the new National Building Code of Canada: Standing Committee on Energy Efficiency in Housing and Building, the re-development of ASHRAE 90.2 SSPC Energy efficiency standard for low-rise residential buildings. 90.2 and many advanced building programs (i.e. ENERGY STAR®, Net Zero, LEED for Homes™, etc.) across North America.

Andrew is:

- National Building Code Canada Standing Committee Energy Efficiency in Buildings and Homes, committee member. 2018-present
- ASHRAE 90.2 Residential Energy Efficiency Standard committee member. 2016-2019
- Chair of the Canadian Homebuilders Association Technical Research & Code Committee (TRC). 2017-2019
- Chair of the Canadian Homebuilders Association Zero Housing Council. 2014-2018
- Past-Chair of the CaGBC LEED for Homes Technical Committee. 2008-2011
- Past Chair of Canadian Green Building Council LEED for Homes. 2007-2011
- Past-Chair of Ontario Home Builders Association Technical Committee.
- ENERGY STAR® for New Homes Technical Standing Committee member and past-Chair.

# Notes