

HERS Vocational Training Orientation

You're registered for our class, now what?

Agenda

A look at the orientation training in brief

Who is MEC?

What is Building U?

What is a HERS Rater?

Building Science 101

Math refresher resources

How to access the training and office hours

What to expect through the course and what comes after?

Questions

Metropolitan Energy Center

In the past five years alone, MEC has effectively managed \$25 million in federal grants to disperse training, resources, and new technology across Kansas and Missouri.



Kansas City area nonprofit since 1983

- 41 years of energy efficiency

Building Performance

- Commercial and residential buildings
- Project Living Proof demo home in heart of KC

Sustainable Transportation

- Kansas City Regional Clean Cities - 1998
- Central Kansas Clean Cities - 2013

Building U overview

- A Jobs training program for energy vocational positions, plus access to other types of construction jobs, which will offer:
 - Clear career progression
 - On-the-job training
 - Good wages and job benefits
 - Servicing your community
 - And opportunities to learn business management skills



What is a HERS® Rater (Home Energy Rating System Rater)?

- An individual who is certified by an accredited Rating Provider to inspect and test a home for energy efficiency. The individual will evaluate each of the minimum rated features of a home and complete a Home Energy Rating inspection according to the industry (RESNET) Standards.”
 - RESNET = Residential Energy System Network
 - Oversees the process and deliverables for homes to meet different certification requirements and any code-related work

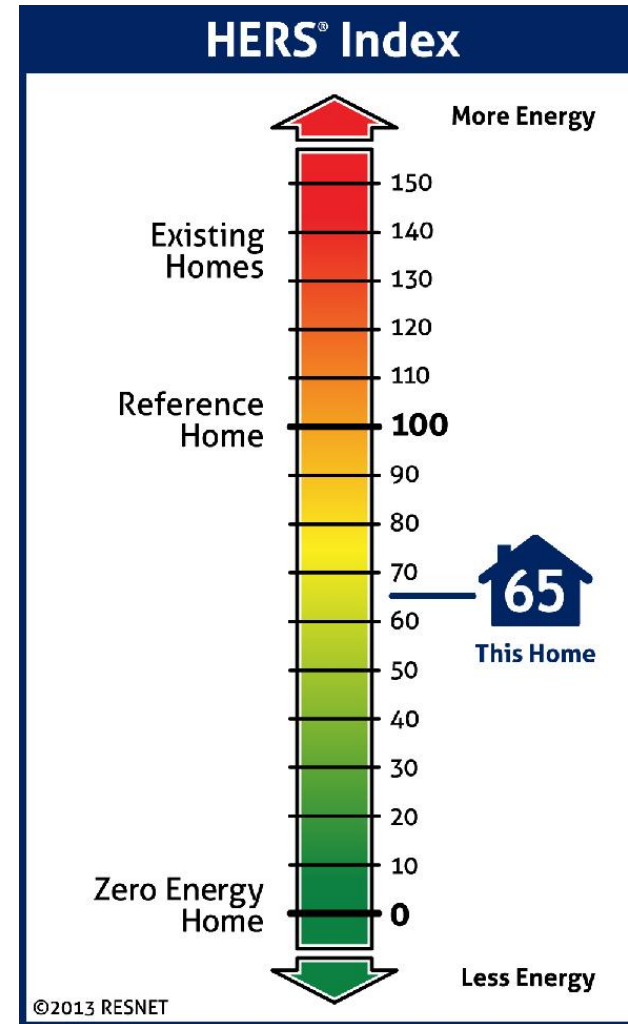


HERS – More Details

Duties	Energy modeling from blueprints for single family homes and multi-family Visual insulation and thermal bypass inspection on site Final testing of house and duct work as well as related appliances
Work examples	<ul style="list-style-type: none">• Calculate surface area of walls/ building shell• Inspect insulation installation pre-drywall• Know how to use a Blower Door (seen left) and Duct Blaster
Education and requirements	<ul style="list-style-type: none">• Home Energy Rater (HERS) Certificate
Experience	Understanding home construction basics a plus
Skills	<ul style="list-style-type: none">• Ability to work independently• Attention to detail and understand some math basics• Ability to be on your feet for long periods of time• Comfortable with heights and varying temperatures in attics and basements
Starting pay	\$18 to \$27 per hour / \$34,560 to \$51,840 per year

The HERS Index

A scoring system established by RESNET in which a home built to the specifications of the HERS® Reference Home scores a HERS® Index of 100, while a net zero energy home scores a HERS® Index of 0.



A Quick Tutorial

Building science 101

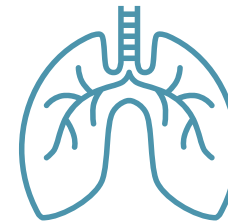
Concepts at Work in Building Performance



**Principals of Heat
Transfer**



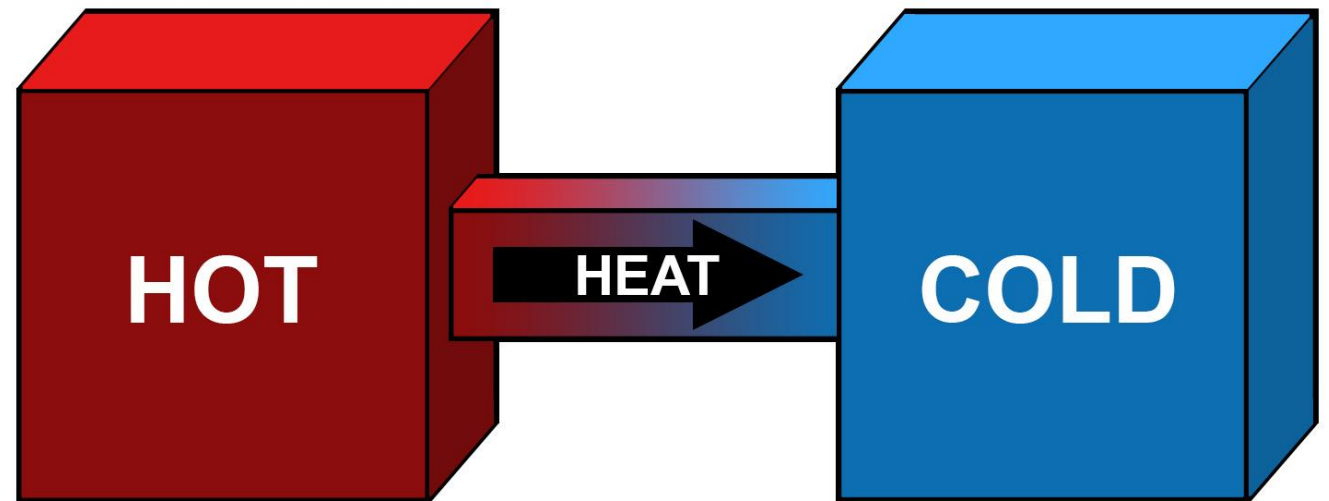
Pressure Differentials



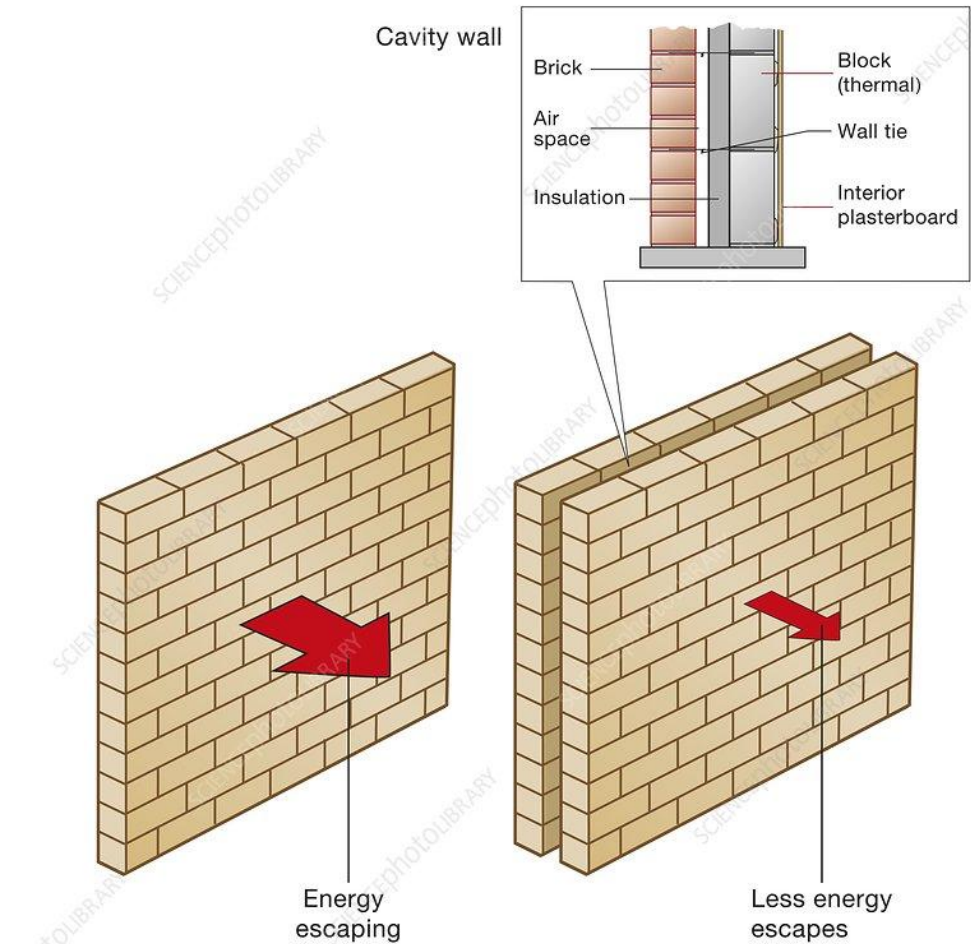
Fresh Air Exchanges

Science re: Heat Loss/Transfer

- Energy moves in one direction.
 - Speed of transfer depends on temperature difference and materials

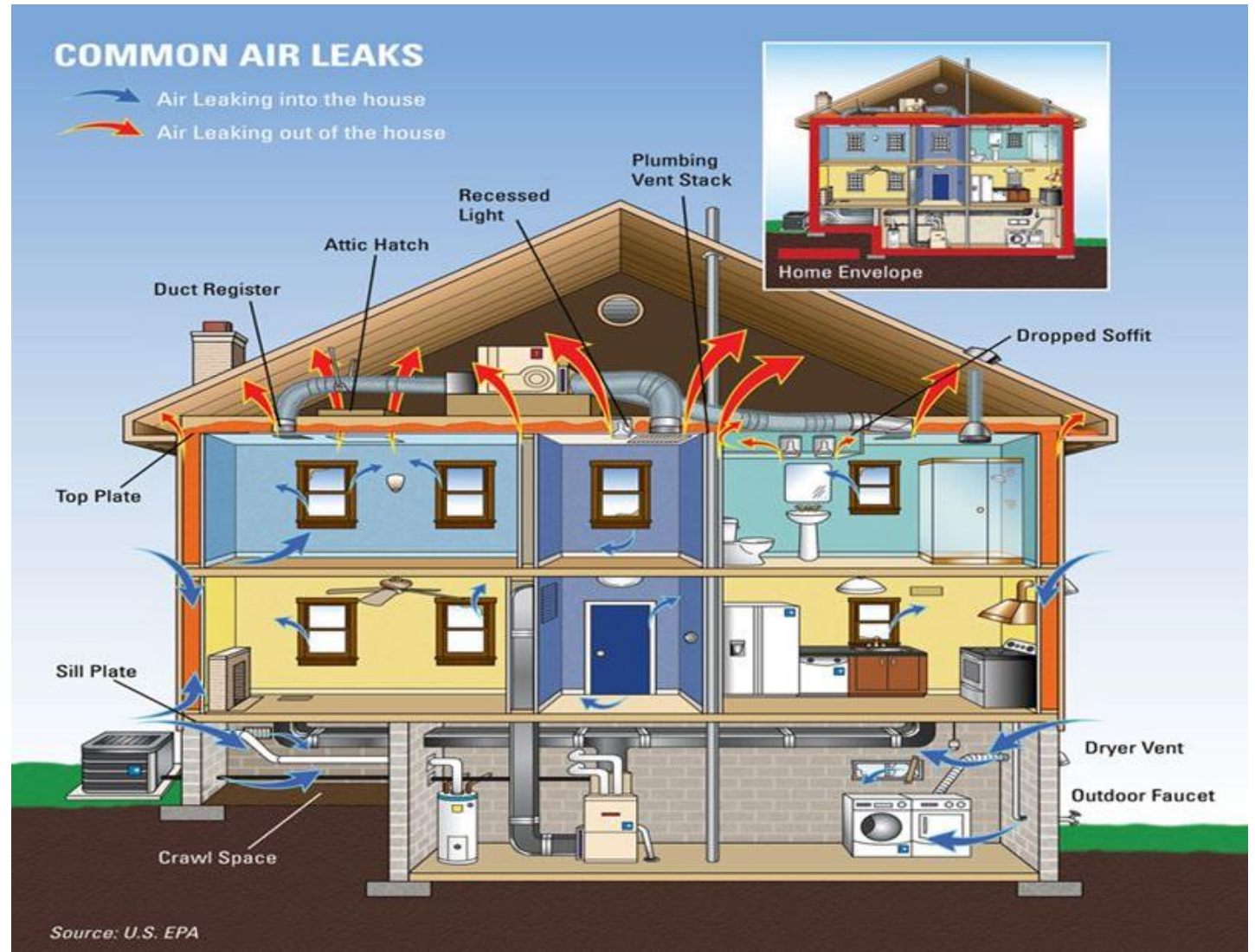


- Insulation's effectiveness is classified as "R-Value" (or U but this gets technical)
- Higher value = more effective at slowing heat transfer in winter and summer



Checking for Air Leaks

- Think of a building as something that “breathes.”
- Or, especially in colder weather, think of it as:
 - Inhale 22 degrees
 - Exhale 70 degrees

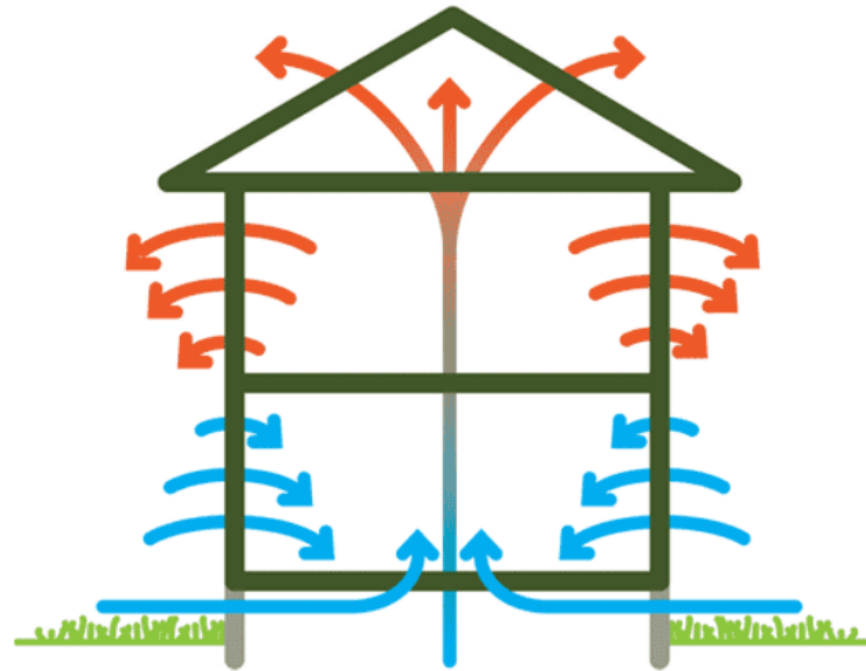


Science re: Heat Loss/ Transfer

We need to talk about pressure changes.

- High to Low

STACK EFFECT (Winter)



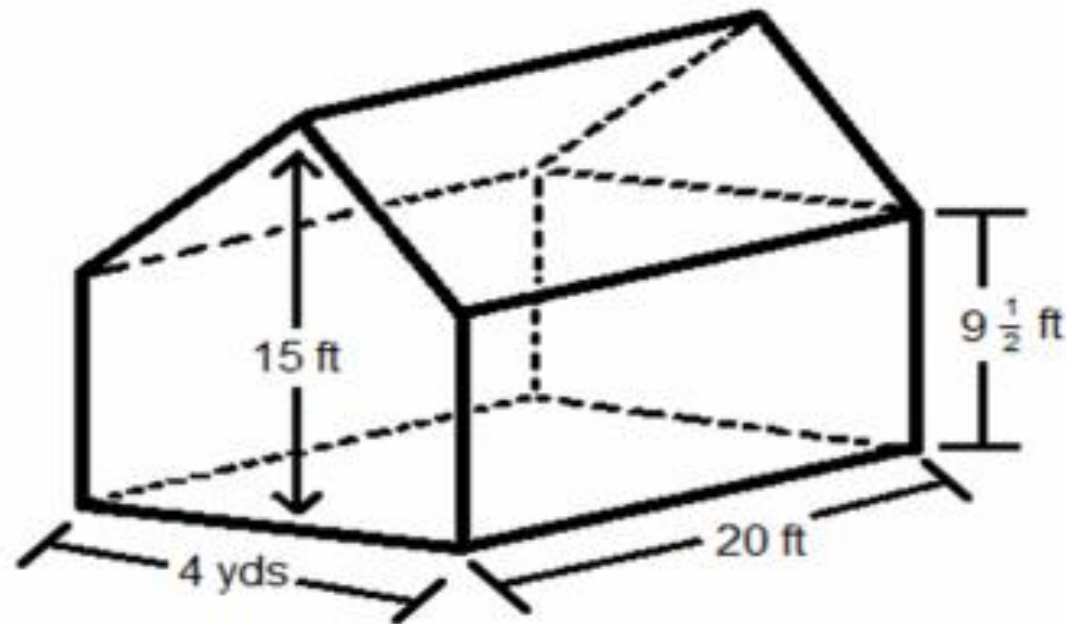
Cold air enters the bottom of the house and rises through air leaks.

The top and the bottom of the house have the highest pressures and are most important to seal.

EnergySmartOhio.com
Designed by RachelAdkinsDesign

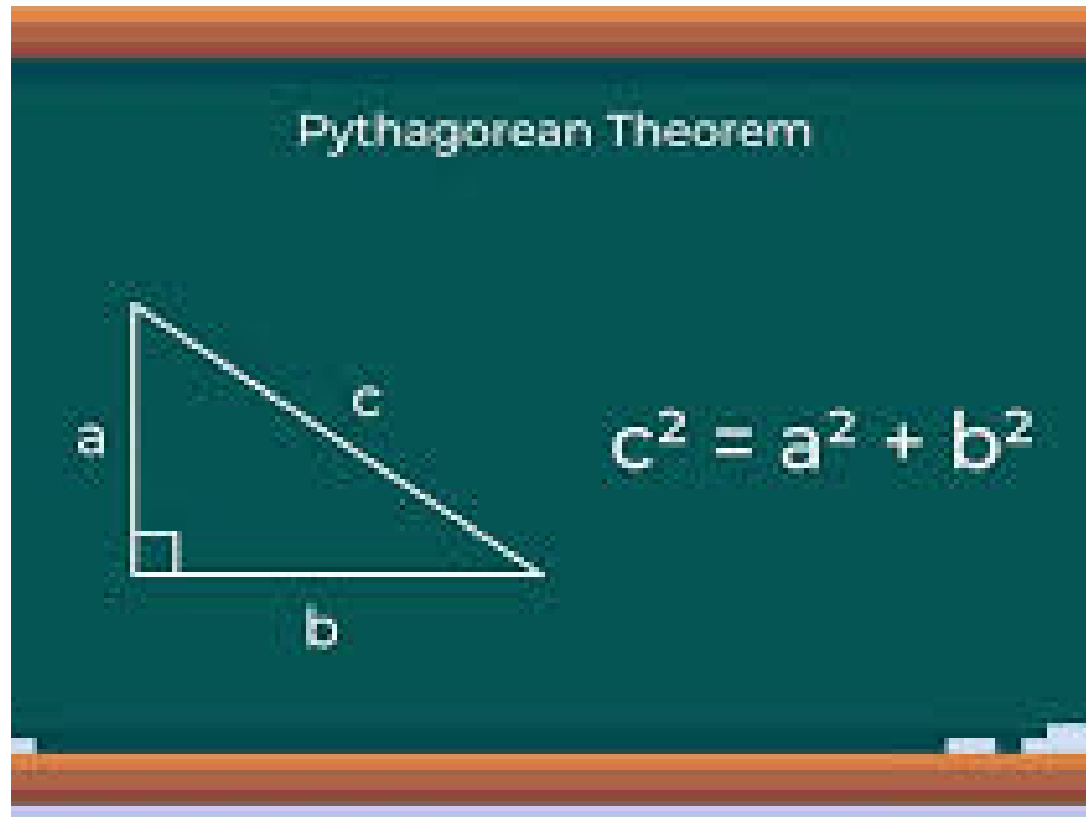
EnergySmartOhio.com
Designed by RachelAdkinsDesign

How much math is involved?



- Basic Geometry and HS Algebra
 - Floor Area
 - Surface area
 - Volume
 - Percentages
 - Understanding formulas

Online Resources for Math Refreshers



Algebra:

[khanacademy.org/math/algebra/a-basics](https://www.khanacademy.org/math/algebra/a-basics)

Geometry:

[khanacademy.org/math/geometry](https://www.khanacademy.org/math/geometry)

Attending Class

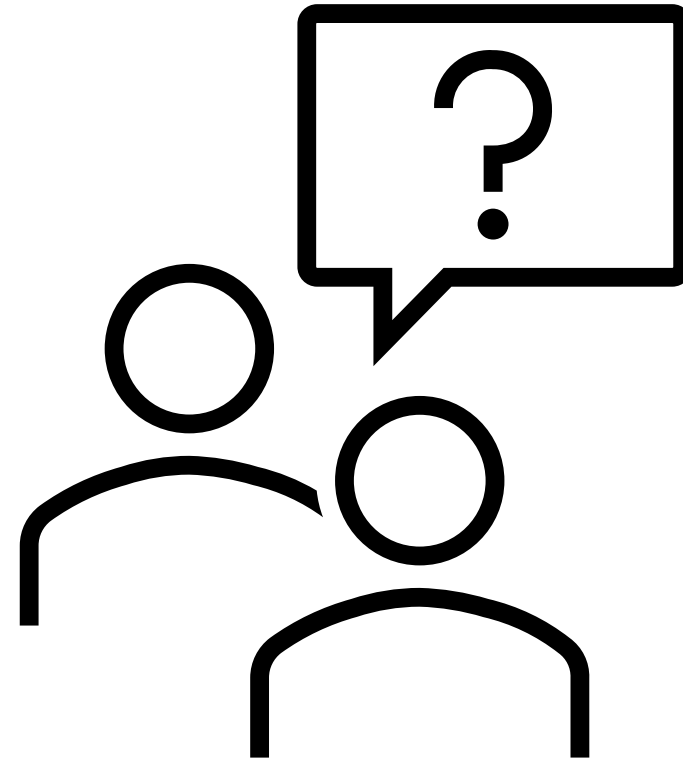
What you need to know to be ready for the first training session

This training is all online and on-demand

- Contractor: EnergySmart Institute
energysmartinstitute.com/resnet-hers-rater-training-registration
 - Once you have submitted the student intake form on Building U site.
 - Once confirmed, EnergySmart Institute will send you a username and password
 - If you don't see the email, please check your spam folder
 - or go to the website, click LOG IN and follow the "forgot password" prompts using the email address this notice was sent to.
- ✓ You may take it from anywhere at any time; whatever is convenient for you.
 - ✓ Once logged in, click on "My Training Classes" in the top menu bar and choose your training from there.
 - ✓ You can enter and complete a training unit by clicking on it or by navigating to it once you complete the previous unit.

How to book office hours

- You can schedule a meeting with your instructor at any time to ask questions, discuss building science, or just to put a face with the voice.
- Request a meeting by following this link:
calendly.com/esiinstructor/sriead



You've finished the modules, then what?

- ✓ Schedule, take, and pass the exams
- ✓ Respond to scheduling request to set up field and equipment use training.
- ✓ Once these two steps are completed, your instructor will reach out to you about how to proceed with your 5 probationary ratings.



Important Note:

The tuition costs associated with the 100 hours of online coursework are funded by Building U.

Please note:

All coursework must be completed by **June 30, 2025**. If you fail to complete all coursework* and/or miss any on-site fieldwork training, you, the student, will be responsible for reimbursing Building U **\$1,295.00** for the full cost of your participation in this program.

**Note: a 7 business-days grace period will be allowed from date of first module to exit course/training without penalty. Student must alert Building U/ MEC of the intended exit from the course/training.*

Important Note #2:

To reiterate, these 100 hours of online coursework tuition are paid by Building U.

The following activities are scheduled to be paid by Building U, but due to unknown factors at this time, these requirements may require student payment:

- The HERS Testing Fee (for one series* of tests)
- The Field and Equipment in-person training day
- The 5 “probationary” rating oversight by the trainer

* Residential Combustion Safety Testing - RESCAZ Simulation; RESNET Practical Simulation =two exams;
RESNET Written HERS Rater Exam

Building U can help you with:

- Finding another apprenticeship program if need be
- Assessing the type of vocational training that fits best with your preferences and skillsets
- Linking with other types of mentors and instruction



Types of Employers that need Energy Professionals:



NONPROFIT
ORGANIZATIONS



GOVERNMENT
AGENCIES



NON-GOVERNMENTAL
AGENCIES



PRIVATE INDUSTRY



SCHOOLS/UNIVERSITIES

Helpful Education/Certifications

ASHRAE Building
Energy Modeling
Professional
Certification (BEMP)

Commercial
Building Inspector
B2 Certification

BPI (Building
Performance
Institute)

North American
Technical Excellence
(NATE) HVAC license
certifications

MEP contractor

[indeed.com/career-
advice/finding-a-
job/contractor-
certifications](https://www.indeed.com/career-advice/finding-a-job/contractor-certifications)



Questions?



MEC's energy efficient demo-home, Project Living Proof.

Contact Us

Mary English

Building Performance Manager
mary.english@metroenergy.org

Adrien Townsend

Building Performance Project Manager
adrien.townsend@metroenergy.org

Building U General Email

General Email Address
building-u@metroenergy.org