



Student performing a blower door test to measure building airtightness.

LEARNING CENTRE FOR  
ZERO ENERGY BUILDINGS

**ENERGY EFFICIENCY  
FOR A COMPLEX WORLD.**



**High Performance Building Lab**  
School of Construction and the Environment  
Concerned with the natural environment, the built environment and the relationship between them.

## CONTACT US

To learn more about ZEB programs, the facilities, or to schedule a tour, contact:

zeroenergy@bcit.ca

[bcit.ca/zeroenergybuildings](http://bcit.ca/zeroenergybuildings)

**BCIT School of Construction and the Environment**

Building NE3, 3700 Willingdon Ave,  
Burnaby, BC V5G 3H2

In partnership with



BRITISH COLUMBIA  
INSTITUTE OF TECHNOLOGY

## ABOUT ZEB

The Learning Centre for Zero Energy Buildings (ZEB) was created to help the construction industry transition to the latest energy efficient building codes, such as the Province of British Columbia's Energy Step Code as well as the City of Vancouver's Zero Emissions Building bylaws.

The ZEB suite of short courses were created for trades people, builders, architects, designers, inspectors, engineers, and other working professionals looking for practical, hands-on training to upgrade their skills to meet the new energy efficient building codes and succeed in high performance construction projects.

Courses are certified and count towards Continuing Professional Development hours for BC builders. Curriculum is based on teaching five principles of high performance buildings:

- Superior insulation to reduce the need for heating systems.
- Airtight construction to control air, heat, and moisture.
- Continuous insulation that interrupts thermal bridges.
- High performance windows that let heat in only when you want it to.
- Balanced ventilation to ensure fresh air, heat recovery, and humidity control.

## COURSES

### Energy Step Code Training

Your Step Code construction training starts with an Applied Building Science Fundamentals (ABSF) course, where you will refresh your knowledge and skills in a construction environment. Upon completion of ABSF, you can personalize your education by taking any of the other courses such as Assembly Details, Airtightness, Mechanical Systems, or Commissioning of HRV Systems.

### Passive House Trades Training

The five-day Passive House Trades Training course provides you with the knowledge and skills you need to build to the international ultra-low energy Passive House standard. The course focuses on building enclosure optimization and provides an introduction to building systems, including heat recovery ventilators.

Visit [bcit.ca/zeroenergybuildings](http://bcit.ca/zeroenergybuildings) for the full curriculum and course dates.

### Customized Courses for Your Organization

Customized programs are also available for corporations and organizations through our Industry Services department. This customized training is designed around existing ZEB curriculum, but with the option to take partial programs. Personalized ZEB courses can be half-day, full-day, or multi-day.

For more information, contact us at [zeroenergy@bcit.ca](mailto:zeroenergy@bcit.ca).

Students learn how to seal wall penetrations to ensure building airtightness.



Students practice creating air barriers for high performance window systems.

## TEACHING FACILITIES

### BCIT High Performance Lab

The High Performance Building Lab has been developed in partnership with BC Housing and BC Hydro in order to provide practical training in zero energy buildings using an envelope-first approach. The lab's teaching spaces include display cut-away assemblies, practice walls, an airtightness teaching house, new HRV installations for testing, and a lecture area.

### Lab-in-a-Box

Portable lab boxes are designed for offsite training in communities across BC. The boxes contain a full suite of sample materials to enable instructors to deliver hands-on experience anywhere, from a conference room to an active construction site.

## FACILITY TOURS

ZEB offers free tours of the High Performance Building Lab plus six surrounding buildings, which have all reduced their carbon emissions by 50%. Tours range from 30 minutes to 1.5 hours and can accommodate groups of up to 30 participants.



The Lab contains a sample Heat Recovery Ventilator (HRV) used for heat recovery and ventilation in passive houses.