Building Analyst Technician Training - Course Syllabus

Course Description
Addressing energy use in residential housing is an important step to advancing a better energy future while creating economic growth, supporting jobs, and increasing our energy security. As a certified Building Analyst Technician, you will have the framework to consistently collect home performance data and conduct residential building science based diagnostic tests. This foundation will help you develop a comprehensive home energy audit which is invaluable in implementing a cost-effective scope of work and critical to the continued improvement of our existing housing stock.

Alignment
The Building Analyst Technician Training aligns with the Building Performance Institute (BPI) Building Analyst – Technician certification scheme handbook, field guide, and job task analysis (JTA).

Course Goal
To accurately, efficiently, and safely collect information and conduct diagnostic tests in support of completing a comprehensive home energy audit according to ***ANSI/BPI 1100-T Home Energy Auditing*** and ***ANSI/BPI 1200-S Standard Practice for Basic Analysis of Buildings***.

Learning Objectives
As a result of this interactive workshop, participants will have the skills to:

- Develop a repeatable, comprehensive, and safe process for accurately and efficiently collecting home performance data and completing diagnostic tests required as inputs into a comprehensive home energy audit.
- Identify health and safety concerns common in many existing homes including recommendations on how to address them.
- Define building, building component and household appliance performance characteristics through physical inspection and/or other data collection methods.
- Recognize the requirements for combustion, combustion equipment, and the types of diagnostics tests or inspection procedures used to assess their operation.
- Determine the air tightness of building enclosures and performance of any ducted systems including ventilation system type and capacity.
- Complete tasks as identified in the Building Analyst Technician field guide.

Who Should Attend
Individuals with interest in pursuing a career in energy auditing, residential building performance, weatherization, or energy retrofits. This course is intended for entry level students

Prerequisites
BPI Building Science Principles Certificate of Knowledge

Class Size
Class size is limited to 10 students to ensure an effective trainer to student ratio.

Length of Session
3.0 days

Note: The 4-hour Building Performance Institute – Building Analyst Technician field exam will be scheduled separately post training.

Agenda
Day One | 9:00 am – 5:00 pm
Day Two | 8:00 am – 5:00 pm
Day Three | 8:00 am – 5:00 pm

Light snacks will be provided throughout the day. Lunch will be on your own each day.

Course Content
Module 1 – Auditing 101: Defining the Process
As a result of this interactive module, participants will:

- Define the goals of an energy audit.
- Identify the information required to achieve audit goals.
- Recognize the order of auditing steps to ensure safety, timely completion, accuracy, consistency, and thoroughness.

Module 2 – Health and Safety: Auditing Priorities
As a result of this interactive module, participants will:

- Identify potential pollutants commonly found in homes, their sources, and potential impact on occupants.
- List other safety hazards that may be present in the household.
- Define specific remediation steps or resources to address identified health, safety, and moisture issues.

Module 3 –The House as a System: Essential Parts and Subsystems
As a result of this interactive module, participants will:

- Identify the essential parts of the house as a system, their interactions, and subsystems.
- Recognize key building enclosure inputs to identify in the field when completing an energy audit.
- Collect building, building component and mechanical equipment, including ventilation, lights, and household appliances characteristics in-field.

Module 4 – Combustion: Requirements, Inspection and Testing
As a result of this interactive module, participants will:

- Recognize the requirements for combustion, combustion by-products, and basic combustion equipment (vent) types.
- Identify combustion equipment type, basic components, vent requirements, and required testing including steps for greatest depressurization achievable test conditions.
- Define forced-air vs hydronic distribution heating systems, system components and (maintenance) issues that can impact performance.
- Complete combustion equipment combustion safety testing, diagnostic and performance testing in-field

Module 5 – Airflow Testing: Building Tightness and more
As a result of this interactive module, participants will:

- Define the steps for preparing the house and completing blower door testing, both a depressurization, and when and how to complete a pressurization test.
- Identify addition inspection protocol for finding leaks with a blower door including interior door check and zone pressure diagnostic testing of adjacent zone and interpretation of results.
- Identify types of duct testing including room to room and pressure pan testing, (test set-up, steps, interpretation, and applicability of tests.
- Identify ventilation system types, controls, requirements, and test procedures using an Exhaust flow meter.

Suggested Websites – General

Building Analyst – Technician – access this site for details on the BPI BA-T scheme handbook, field guide, and various standards.

Building Performance Association – access information on home performance, gain knowledge and access to training, and connect with peers.

Green Workforce Connect – connect with training entities and weatherization agencies nationwide.

Student Handouts

A course participant packet will be provided to each student.

Student Assessment

Participants will be assessed for competencies by utilizing informal question and answer periods conducted by instructors at the start of each day and throughout the course. Participants will also complete quizzes at the end of each module; complete activities using diagnostic and performance testing tools and props; and hands-on data collection and testing to assess a building's enclosure and performance and inform the audit. Each participant will receive a data collection form which requires individual and team activities to complete and is designed to reinforce the subject matter from the course. The instructors will ensure all participants are engaged during these activities and all entries are completed. At the end of the training, participants will take the BPI Building Analyst – Technician Field Exam and receive certification from BPI if successful.

Specific Assessment Tools:

- Pre-training formative assessment on Building Science Principles and terms
- Four formative module assessments with review
- Formative verbal/practical assessments (in-field) based on BA-T field guide.

Classroom Rules of Conduct

Refer to the Training Code of Excellence.