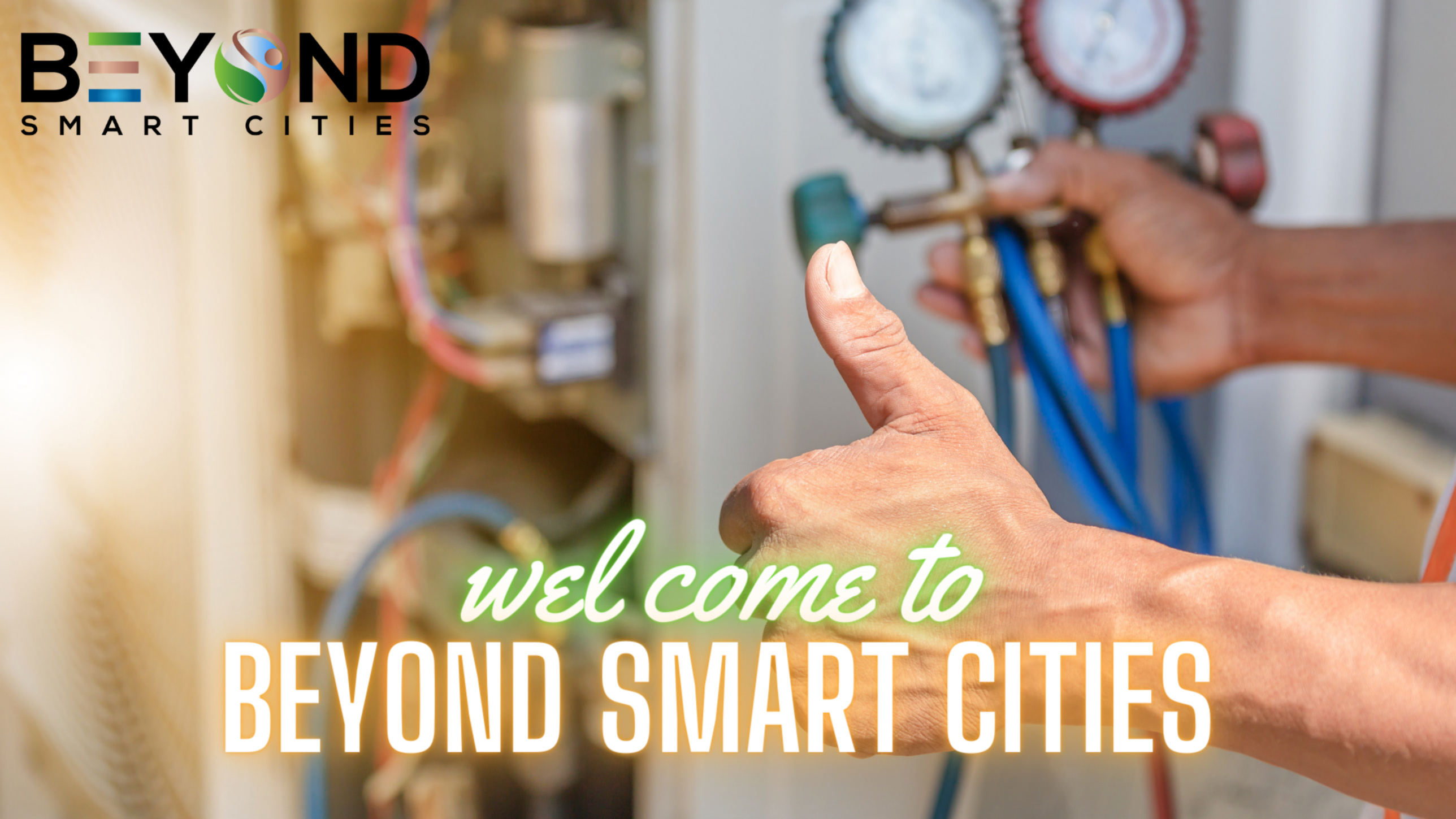

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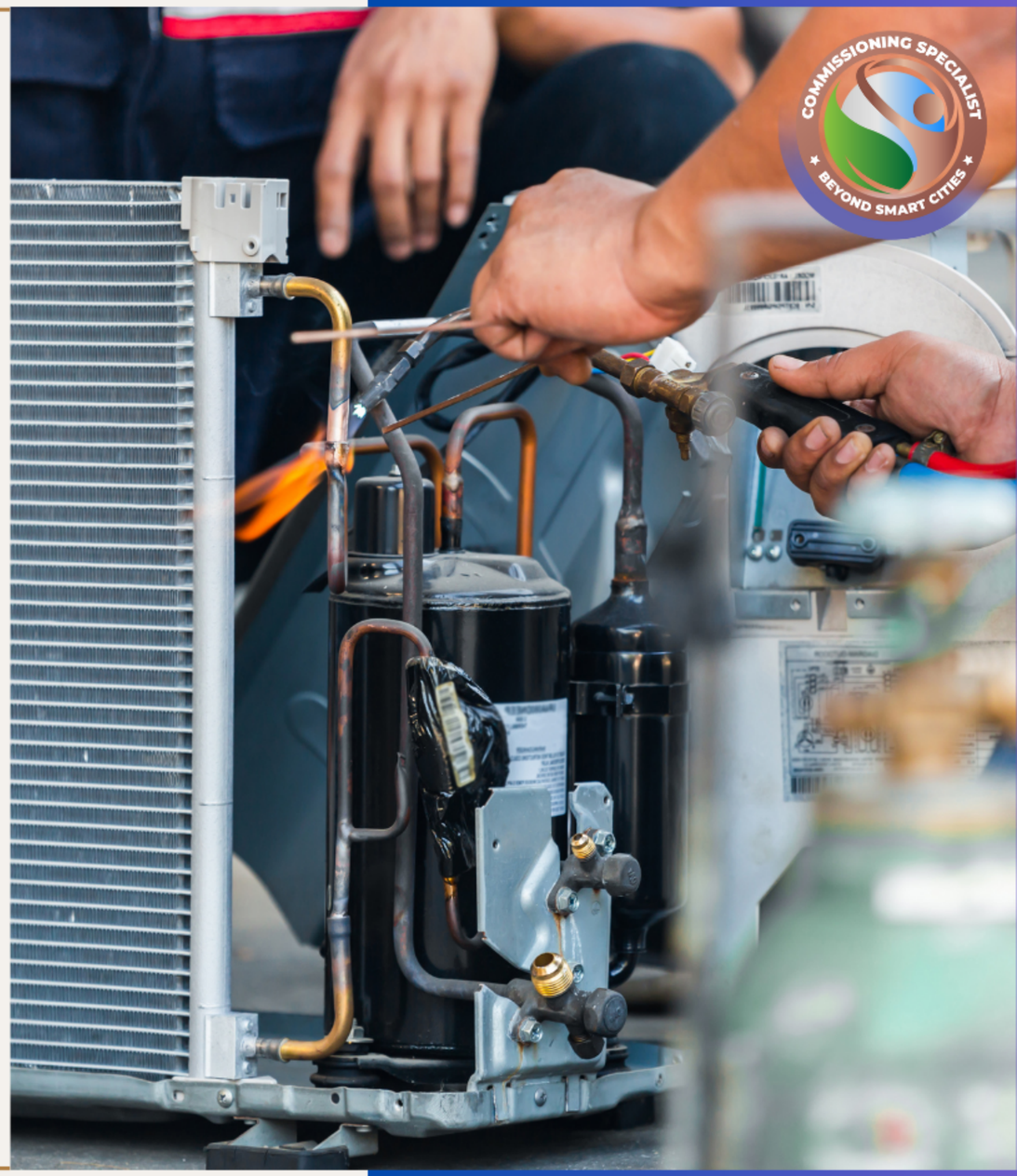
MODULE 12

Basics and TAB Review

KRISHNAJI PAWAR - CEO & FOUNDER

LEED AP(BD+C),GSAS CGP,GCP,ISO 14001

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CERTIFIED COMMISSIONING AUTHORITY CXA EXAM PREP OVERVIEW

A TAB specialist is essential for your building's environmental systems to work properly. A certified TAB service will ensure that your system is installed properly and operating within allowable parameters for optimal efficiency and performance. This lecture will explain TAB and its importance to your business.

Learning Objectives

- Introduction
- What is testing, adjusting and balancing?
- Who Is Responsible for the TAB Process?
- Why is a TAB Inspection So Important?
- Benefits of TAB

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INTRODUCTION

- Ongoing Commissioning (OCx) is a method for monitoring, analyzing, and improving the performance of building systems over time.
- As a continuation of the commissioning process typically implemented after NCCx or EBCx, OCx verifies that a facility continues to meet CFR (OPR for new construction) (OPR for new construction). As the CFR and system technologies evolve, OCx also makes it easier to enhance the efficiency and environmental performance of buildings and systems.
- Ongoing Commissioning (OCx) is a method for monitoring, analyzing, and improving the performance of building systems over time.

WHAT IS TESTING, ADJUSTING AND BALANCING?

Testing, adjusting, and balancing temperature and environmental control systems ensures they heat or cool according to design and at peak efficiency. Test instruments, sensors, and monitors verify HVAC system temperatures, airflow, and other characteristics.



Who Is Responsible for the TAB Process?

- Typically, the building's responsible system engineer will initiate the TAB process.
- They will request a certified TAB specialist to conduct the initial testing. When testing is complete, the technician will provide the engineer with a formal TAB report addressing any system-related issues.

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Who Is Responsible for the TAB Process?

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- The HVAC installer or repairman will need to address any significant issues. After these issues have been resolved, the TAB service provider can retest the system to ensure that the issue has been resolved.
- Once the system has been rebalanced, they will issue a final report detailing any manual adjustments made during the process, as well as any future issues that must be addressed.

Why is a TAB Inspection So Important?

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- TAB inspections by specialists have many advantages. TAB focuses on safety and cost, while most system work improves comfort. Installed or unbalanced systems wear out quickly.
- This costs you monthly operations but more in repairs in the long run. System imbalances and leaks can also compromise building safety. If you need to make a warranty claim on a system component, you may need to show that it was properly installed and maintained. TAB reports document system changes and installation practices.





Why is a TAB Inspection So Important?

- If your environmental control systems aren't improving after regular maintenance and repairs, you may need a TAB specialist. A small imbalance can make your space uncomfortable and increase your operating costs.
- Testing, adjusting, and balancing will reveal hidden issues when troubleshooting a mechanical issue. A TAB report can also help you install your system according to design. It provides the most complete environmental system overview.





Why is a TAB Inspection So Important?

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Installing and turning on a heating and cooling system is not enough. A forced-air furnace, air conditioner, or heat pump alone will heat and cool, but indoor comfort will be poor.

The HVAC system will also operate less efficiently, wasting energy and money. Testing, adjusting, and balancing HVAC equipment ensures optimal performance.

NEXT →

TAB benefits:

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- Obtain real energy savings after a TAB process.
- Complete the air-Side and Water-Side TAB of the building’s HVAC system operations to achieve optimal and repeatable performance.
- Comprehensive review of design documents to ensure HVAC systems operate as intended
- Expert Observations of the Installation Process
- Complete the air-Side and Water-Side TAB of the building’s HVAC system operations to achieve optimal and repeatable performance.
- Produce an incisive report covering the whole HVAC system's design intent and actual performance.
- Troubleshoot problem areas and make adjustments to the HVAC systems to ensure prime performance.





Applications of testing, adjusting and balancing

- New HVAC systems: New HVAC systems should be tested, adjusted, and balanced during commissioning. This ensures that HVAC equipment will perform at its best when the building opens. In new construction, HVAC testing, adjusting, and balancing ensures heating and cooling equipment provides the indoor comfort designers, planners, owners, and builders intended.
- Existing HVAC systems: Season-to-season use degrades heating and cooling systems. Testing, adjusting, and balancing HVAC systems improves indoor comfort and system efficiency.





Ductwork is key.

Air is distributed to your home through ductwork. Your heating and cooling equipment's air travels through the ductwork. Air leaks, unsealed connections, damaged ductwork, and other issues can affect indoor comfort and system efficiency. Before testing, adjusting, or balancing, check the ductwork and seal and insulate as needed. Testing results and adjustments will be wrong otherwise.

NEXT

Testing, adjusting, and balancing will address factors such as:

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- Airflow quantities from the HVAC unit
- Amount of air flowing through the ductwork and exiting into the building from registers, vents, and grilles
- Pressure levels, including air velocity, barometric pressure, static pressure, differential pressure, and total pressure
- Mixture levels and temperatures of air in plenums
- Air turbulence and stratification within the system
- Fan and blower operation, including motor amperage and voltage
- Fan speed and rotation
- Proper operation and sequencing of automatic control systems





TAB benefits:

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Measurement and calibration of the HVAC systems to meet the design air flow and chilled water flow as required, achieving the optimum thermal comfort, energy, and IAQ performance.

- Balances Air Flows within Occupied space, increasing thermal comfort and ventilation effectiveness.
- Hydronic balancing of chilled water flows reduces pumping energy.
- Tuning the HVAC system: Good system design and right-sizing equipment are not enough.







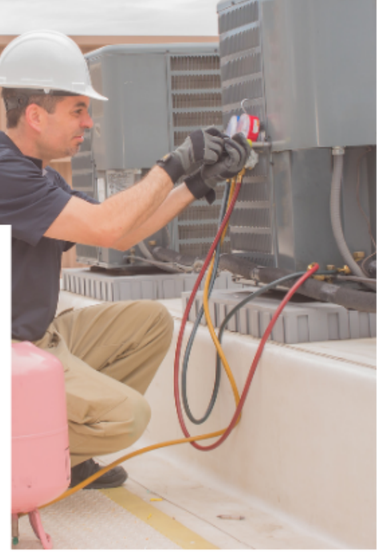
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IN SUMMARY

- TAB is the process of Testing, Adjusting & Balancing (TAB) to make sure your HVAC system is functioning as intended.
- Hermanson technicians use specialized, tightly calibrated instruments to measure equipment and system performance, developing a full operational profile of your HVAC systems.
- Using this profile, our technicians then adjust and balance the system to correct any problems and optimize operations.

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