BEYOND SMART CITIES

COMMISSIONING SPECIALIST
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COMMISSIONING AUTHORITY

CXA OVERVIEW

ONLINE TRAINING BY KRISHNAJI PAWAR

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MODULE 3

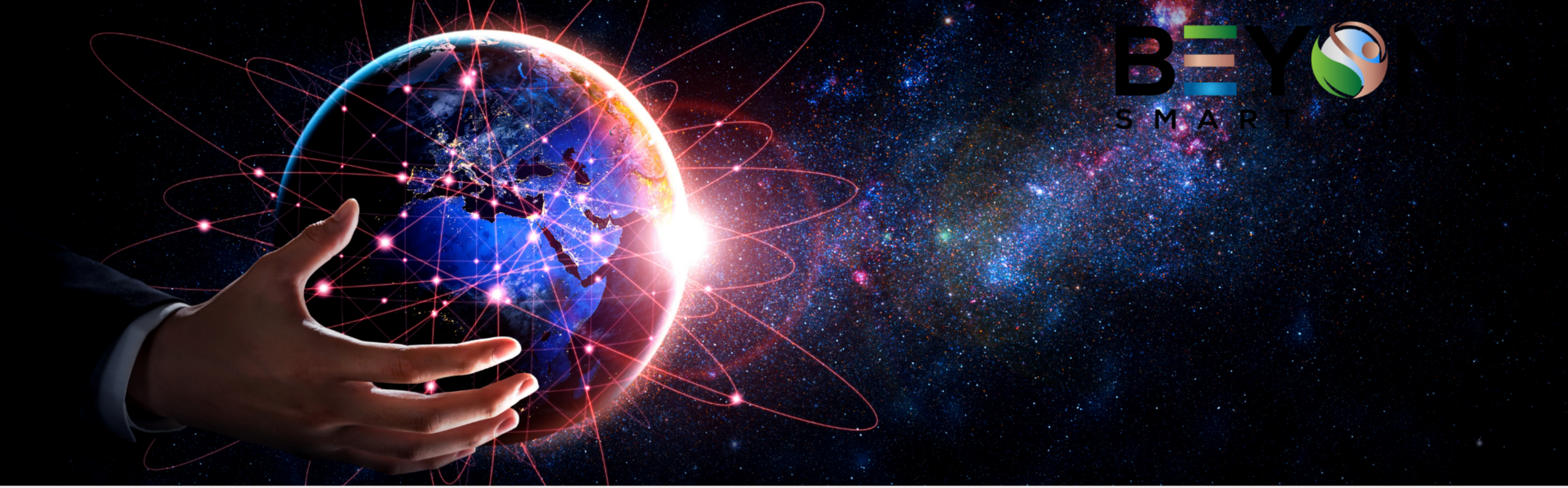
Why is CxA of buildings necessary?

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CXA OVERVIEW

Commissioning is critical for ensuring that the building design is successfully constructed and operated.

Learning Objectives

- Course Overview and Introduction
- Definition and History of Building Commissioning
- Why is building commissioning needed?
- Building Commissioning Process Overview
- Professional Certification in Commissioning
- Cost and benefits of building commissioning
- Summary and Resources
- CxA Sample Exam Question

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INTRODUCTION

- Commissioning is a systematic process to ensure a building meets design intent, contract documents, and owner's operational needs.
- It's crucial for the success of the whole-building design process due to the sophistication of modern building designs and systems.
- Commissioning evaluates claims about construction materials like durability and VOC emission content.

BUILDING COMMISSIONING IMPORTANCE

- It improves power quality by verifying that electrical building support and equipment perform as specified.
- Continuous commissioning ensures efficient operation and comfort throughout the building's life.
- It goes beyond traditional building operation and maintenance, involving scheduled and rigorous retesting of building systems.





WHAT IS COMMISSIONING, AND WHAT IS IT NOT?



Commissioning is the process of designing, installing, testing, operating, and maintaining all systems and components of a building according to the operational requirements of the developer, owner, or end user.

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WHAT IS COMMISSIONING, AND WHAT IS IT NOT?+

- It involves procedures to check, inspect, and test every operational component of the project, their individual functions and their integration as subsystems.
- It ensures proper system performance and provides the benefits of an efficient system design.
- Initial commissioning is a systematic quality assurance process that ensures the building meets the Owner's Project Requirements (OPR) and the owner achieves a successful construction project.
- Seasonal commissioning fine-tunes system operation in different seasons and ensures all operational failures are found and corrected during the first year of operation.





WHAT IS COMMISSIONING, AND WHAT IS IT NOT?++



- Ongoing commissioning helps to continuously monitor operation over a lifetime and plan corrective actions, improving the economy of operation and user comfort.
- Proper commissioning contributes to the user's health by preventing pollution outside the building.
- The commissioning provider conducts quality checks of design, installation, and start-up procedures and ensures proper operation.
- The commissioning process focuses first on system operation and second on the kind of equipment required to achieve the operation.
- It is not a replacement for the existing quality inspection process during design and construction, but an addition to these processes.

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COMMISSIONING BENEFITS AND IMPORTANCE

- Benefits all stakeholders: users, owners, developers, investors, designers, contractors, and manufacturers.
- Improved thermal comfort and indoor air quality boost occupant productivity, resulting in higher rent payments.
- Positive cash flow from reduced operating costs, increased rent, and increased building value increases owners' investment in commissioning and well-performing systems.
- Occupants are more efficient, productive, and healthier in well-performing buildings.





COMMISSIONING BENEFITS AND IMPORTANCE+



- Owners and developers receive specified benefits in the OPR, including high energy efficiency, good indoor conditions, and low operational costs.
- Investors benefit from lower operational costs, higher rent, or increased building value.
- Efficient commissioning process ensures fewer changes and delays during system takeover.
- Contractors can demonstrate product benefits during handover and Defects Liability Period (DLP).

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"WHY COMMISSIONING?"

- Ensures healthier, productive occupants.
- Increases value for owners and investors.
- Allows faster sales of well-performing buildings.
- Increases business for design and installation teams.
- Delivers manufacturer's promised benefits.
- Reduces energy use and environmental load.



'MANDATORY' COMMISSIONING FOR GREEN BUILDINGS AND BEYOND

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'MANDATORY' COMMISSIONING IN GREEN BUILDINGS AND BEYOND



- Most countries do not require commissioning activities, however LEED and IGBC Green applications must demonstrate minimal commissioning activities.
- Some green building certifications involve basic commissioning for design, construction, and operation.
- The owner must create an Owner's Project Requirements (OPR) document and designers must create a Basis of Design (BoD).

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'MANDATORY' COMMISSIONING IN GREEN BUILDINGS AND BEYOND+

- For mechanical, electrical, plumbing, and renewable energy systems, the commissioning provider must review OPRs, develop CX plans, checklists, and functional performance test procedures, confirm CX requirements in construction documents, and verify system performance. These activities contribute to building operation and meeting owner's project goals.
- Commissioning the building's thermal envelope is necessary because it has many materials and stakeholders.



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