

Benefits of CxA for Entertainment Venues



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Introduction

Welcome everyone! Today we're going to talk about an important concept in building design and construction: Which is the Commissioning Authority, or CxA for short.

Essentially, the role of the CxA is all about making sure that buildings work the way they're supposed to. And when it comes to entertainment venues like cinemas, water parks, and indoor theme parks, it is especially important.

We all want to have a good time when we go to these places. Well, CxA helps make sure that everything from the lighting to the HVAC system to the life safety systems are all working together seamlessly to create a safe, comfortable, and enjoyable experience for everyone.



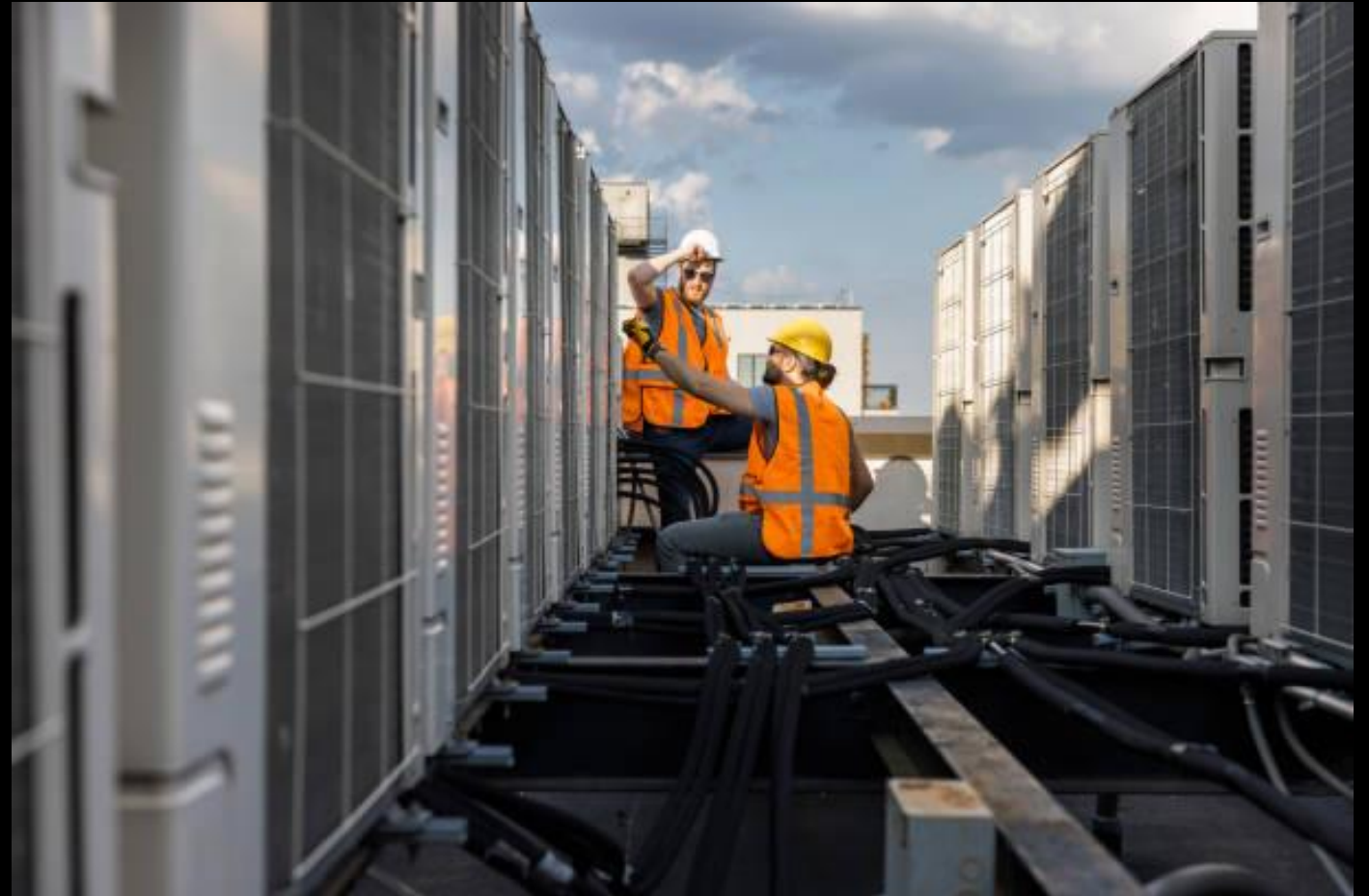
What is a Commissioning Authority (CxA)?

Commissioning Authority (CxA) is a process used to ensure that a building's systems are designed, installed, and tested to meet the owner's requirements.

The CxA acts as an independent third-party that oversees the entire commissioning process, from pre-design to occupation.

The role of the CxA is to ensure that all building systems, including HVAC, plumbing, electrical, life safety systems, and all other ELV systems are functioning as intended, interfaced and that they meet the owner's requirements.

This includes testing and verifying the performance of each system, identifying any issues or deficiencies and ensuring that they are corrected before the building is occupied.



The Stages of Commissioning

Commissioning Authority (CxA) consists of four stages: pre-design, design, construction, and occupancy.

During the pre-design stage, the CxA works with the owner and design team to establish the project requirements and develop a commissioning plan.

In the design stage, the CxA reviews the design documents and specifications to ensure that they meet the project requirements.

During the construction stage, the CxA observes the installation and testing of the systems to verify that they meet the project requirements. The CxA also manages the interfacing and handover of all systems.

Finally, during the occupancy stage, the CxA verifies that the systems are operating as intended and provides training to the building operators.



Life Safety Systems

Life safety systems are critical in any building but especially so in entertainment venues such as cinemas, water parks, and indoor theme parks. These systems include fire alarms, sprinklers, emergency lighting, and smoke control systems.

The CxA will ensure that these systems are designed, installed, and tested to meet the relevant codes and regulations. The CxA will also verify that these systems are integrated properly and function as intended during an emergency.

The CxA should witness 100% of the life safety tests such as device and interface operation. The Cause & Effect testing and the Integrated Systems Testing for projects should be planned managed and verified by the CxA.

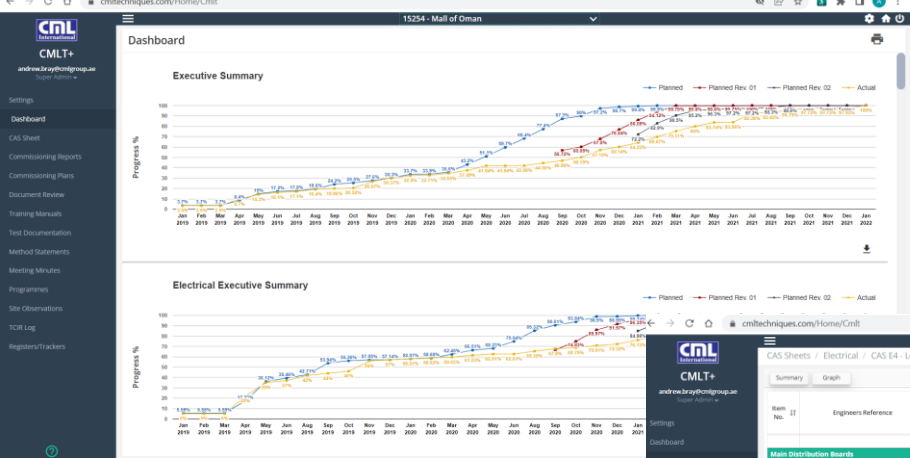


Web-based CxA Systems

A web-based Commissioning system is a powerful tool that can help streamline the commissioning process for any project. By providing a centralized platform for communication, collaboration, and documentation, a web-based CxA system will help ensure that all stakeholders are on the same page throughout the commissioning process.

One of the key benefits of using a web-based CxA system is improved communication. With real-time updates and notifications, all stakeholders can stay informed about the progress of the commissioning process and any issues that arise. This can help prevent delays and ensure that everyone is working together towards a common goal. Additionally, a web-based CxA system can improve collaboration by providing a centralized location for all project-related documents and data.

Finally, a web-based CxA system can be designed to correctly streamline the handing over of projects.



The screenshot displays the 'Testing & Commissioning Inspection Reports' table in the CMLT+ web interface. The table has columns for 'Item No.', 'Discipline', 'System', 'Received Date', 'Engineers Reference', 'TCR No.', 'TCR Description', 'Inspection Planned', and 'Contact Person'. The table lists several inspection items, including Public Health, Specialist Systems, and Electrical. The 'TCR Description' column provides detailed information about each inspection, such as 'Inspection for testing and commissioning of odour control system & external sewage pumping station' and 'Inspection for testing and commissioning of access control system door type AC1, AC2, AC3, AC4 from heading viewing graphics at PCE room & level -04.00.02 external IT server room 2702.02.02 wall as attached list & drawings, grid N/A'. The table also includes a '2,701 records found' indicator at the bottom.

The screenshot shows the 'CAS Sheet' for the '15254 - Mail of Oman' project. The table lists various CAS items, including Main Distribution Boards. The table has columns for 'Item No.', 'Engineers Reference', 'Asset Code', 'Building / Zone', 'Category', 'Floor Level', 'Seq. No.', 'Location', 'Fed From', and 'Provides Power to'. The table lists several items, including 'MDR-01', 'MDR-02', 'MDR-03', 'MDR-04', 'MDR-05', 'MDR-06', 'MDR-07', 'MDR-08', 'MDR-09', 'MDR-10', 'MDR-11', 'MDR-12', 'MDR-13', 'MDR-14', 'MDR-15', 'MDR-16', 'MDR-17', 'MDR-18', 'MDR-19', 'MDR-20', 'MDR-21', 'MDR-22', 'MDR-23', 'MDR-24', 'MDR-25', 'MDR-26', 'MDR-27', 'MDR-28', 'MDR-29', 'MDR-30', 'MDR-31', 'MDR-32', 'MDR-33', 'MDR-34', 'MDR-35', 'MDR-36', 'MDR-37', 'MDR-38', 'MDR-39', 'MDR-40', 'MDR-41', 'MDR-42', 'MDR-43', 'MDR-44', 'MDR-45', 'MDR-46', 'MDR-47', 'MDR-48', 'MDR-49', 'MDR-50', 'MDR-51', 'MDR-52', 'MDR-53', 'MDR-54', 'MDR-55', 'MDR-56', 'MDR-57', 'MDR-58', 'MDR-59', 'MDR-60', 'MDR-61', 'MDR-62', 'MDR-63', 'MDR-64', 'MDR-65', 'MDR-66', 'MDR-67', 'MDR-68', 'MDR-69', 'MDR-70', 'MDR-71', 'MDR-72', 'MDR-73', 'MDR-74', 'MDR-75', 'MDR-76', 'MDR-77', 'MDR-78', 'MDR-79', 'MDR-80', 'MDR-81', 'MDR-82', 'MDR-83', 'MDR-84', 'MDR-85', 'MDR-86', 'MDR-87', 'MDR-88', 'MDR-89', 'MDR-90', 'MDR-91', 'MDR-92', 'MDR-93', 'MDR-94', 'MDR-95', 'MDR-96', 'MDR-97', 'MDR-98', 'MDR-99', 'MDR-100'. The table also includes a '44 / Page 1 / 1' indicator at the bottom.

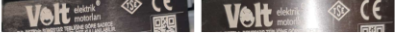
Microsoft Word - STO-15144-02462

CML International (Dubai) L.L.C.		SITE TEST OBSERVATION	
Project: City Centre Al Zahia, Sharjah		Package: Mechanical	SITE TEST OBSERVATION

Date: 15/09/2021
TCR Ref: UAE022-CCIC-SIU-ME-CIR-00673
Subject: Performance test of Fresh Air handling Unit FAHU-R-06 (FAHU/3F/M05/R06/01). Location: 3F & 1F/ M5, M1 & M6

Test Results:
FAHU-R-06 Performance Test was verified and was found to *acceptable* with comments subject for compliance before final approval.

FAHU-R-06 Fresh Air Supply Fan Performance test				FAHU-R-06 Extract air Fan Performance test					
Running Current		Operating Voltage		Running Current		Operating Voltage			
R	25.6 A	RY	407 v	R	25.1 A	RY	407 v		
Y	28.9 A	RB	408 v	Y	25.2 A	RB	408 v		
B	28.7 A	B	407 v	B	24.0 A	RB	407 v		
Average Amp		28 A	Average v	407 v	Average Amp		24.7 A	Average v	407.3 v
OLR Setting				OLR Setting					
35 A (30 A to 40 A range)				29 A (23 A to 32 A range)					



Recommissioning

Recommissioning is the process of evaluating and optimizing a building's systems after they have been in operation for some time. It involves identifying areas where performance has degraded or where energy efficiency can be improved, then taking corrective action to restore the system to its optimal state.

CxA plays a critical role in the recommissioning process by providing expertise and guidance on how to evaluate and optimize building systems. By working closely with building owners and operators, CxA's can help identify opportunities for improvement and develop a plan to implement changes that will improve performance and reduce operating costs.



Case Study: Cinema

A cinema recently underwent a recommissioning process that resulted in significant improvements to its performance, reliability, and safety.

The CxA team identified several issues with the building's HVAC system, including inadequate ventilation and poor air quality. They also found that the fire alarm system was not functioning properly, therefore putting patrons and employees at risk.

To address these issues, the CxA team worked closely with the building owner and the design and construction teams to implement solutions that improved the building's systems and ensured compliance with local codes and regulations. They installed new HVAC equipment, improved the ventilation system, and upgraded the fire alarm system.

As a result of these improvements, the cinema saw a significant reduction in energy costs and an increase in patron satisfaction.



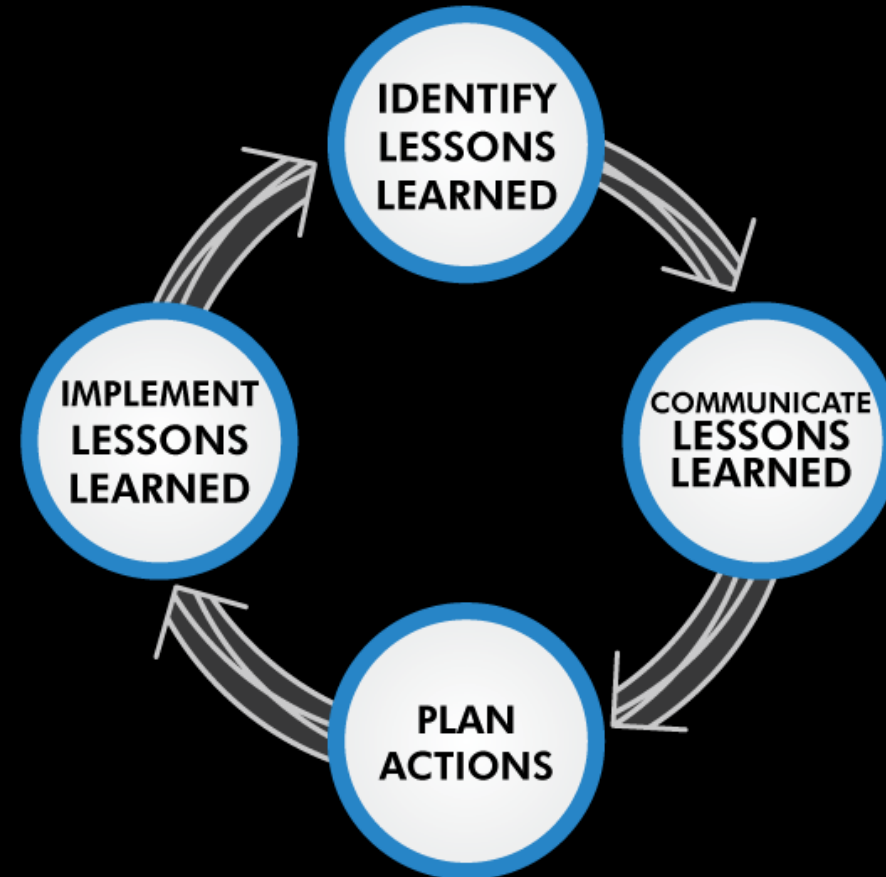
Lessons Learned

Unfortunately, all projects tend to suffer the same issues that delay installation, testing and commissioning.

An experienced CxA will bring up to date pertinent lessons learned to the project. The project will benefit from the implementation of these lessons during the design stage which will mitigate delays during the installation, commissioning and handover phases. Therefore, reducing delays and escalating construction costs.

Examples include:-

- Missing Fire Alarm interfaces.
- Balancing valves and damper positioning
- BMS IO schedules not coordinated
- Generator load shedding
- District cooling control philosophy
- IST interface requirements



Conclusion

Commissioning Authority (CxA) plays a crucial role in ensuring that entertainment venues such as cinemas, water parks, and indoor theme parks are designed, installed, and tested to meet the owner's requirements. By using CxA, these venues can improve the performance, reliability, and safety of their building systems, while also reducing energy and maintenance costs.

The stages of commissioning, including pre-design, design, construction, and occupancy, are all important in ensuring that a building's systems are functioning properly. CxA can help ensure that each stage is completed successfully, and that the building's systems continue to meet the owner's requirements over time.

By using a web-based CxA system, communication, collaboration, and documentation can be streamlined, further improving the commissioning process.

Lastly although difficult to measure, the benefits that a good CxA bring to a project will save more than his fees in completing in a timely manner, let alone the savings for ongoing operational costs post completion due to more efficient systems.



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Q and A Session



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