(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

The Commissioning Process (Cx) is a quality-focused process for enhancing the delivery of a project. Cx focuses on evaluating and documenting that all of the commissioned systems and assemblies are planned, designed, installed, tested, operated, and maintained to meet the Owner's Project Requirements (OPR).

Cx assumes that Owners, programmers, designers, contractors, and operations and maintenance (O&M) entities are fully accountable for the quality of their work. The Commissioning Team uses methods and tools to evaluate that the project is achieving the OPR throughout the delivery of the project.

Cx begins at project inception (during predesign) and continues for the life of the facility (through occupancy and operations). Because this standard details a process, it can be applied to both new and renovation projects. Cx includes specific tasks to be conducted to evaluate whether the design, construction, testing, documentation, and training meet the OPR. This standard describes the overall minimum Cx necessary to provide a uniform, integrated, and consistent approach for delivering projects and providing an Owner's operating staff/contractor with the information for operating facilities that meet the OPR.

Due to inherent variations in the planning and data gathering process for existing buildings and ongoing commissioning, this standard and process is intended for projects including construction and renovation (sometimes called "capital projects"). During Existing Building Cx (EBCx), if the project is making capital improvements that require construction, this standard would be appropriate to use for the existing building implementation phase. The OPR may transition to the Current Facility Requirements (CFR), and the Cx Plan may transition to an Ongoing Cx (OCx) Plan. If these documents do not exist, EBCx would be used to develop the necessary documentation.

Cx is a quality-based method that is adopted by an Owner to achieve successful construction and renovation projects. It is not an additional layer of construction or project management. Its purpose is to reduce the cost and Owner risk associated with delivering construction projects and to increase value to Owners, occupants, and users. This standard has been developed to assist those who are adopting or plan to adopt a quality-based and cost-effective process.

Development of guidelines for Cx began formally in 1982 when ASHRAE formed a committee to document best practices to provide and operate facilities that performed according to the OPR. ASHRAE published its original commissioning guideline in 1989 and an updated version in 1996. The Cx detailed in these guidelines is the result of experience gained on projects that required systems and assemblies to work from the first day the project was turned over to the Owner. This Cx is further based on experience with projects that met the requirements of Owners, occupants, users of processes, and facility operating-maintenance-service organizations at a high level of satisfaction and that reduced the cost to deliver the project.

In 2008, it became evident that a standard with minimum requirements for Cx was necessary to support many other standards and programs. ASHRAE/IES Standard 202 presents the minimum requirements for Cx without focusing on specific building types, systems or assemblies, or on specific project sizes. Supplementary technical guidelines continue to be developed to provide specific and detailed information on how to implement Cx for each major building/facility, system, or assembly, and for various stages of facility development and operation. The scope and budget for Cx is set by the Owner for each project at the beginning of the development process.

Due to the integration and interdependency of facility systems, a performance deficiency in one system can result in less than optimal performance by other systems. Implementing Cx is intended to reduce the project capital cost through the warranty period and also reduce the life-cycle cost of the facility. Using this integrated process results in a fully functional, finely tuned facility, with complete documentation of its systems and assemblies and trained O&M personnel.

Emphasis is placed on documentation of the OPR at inception of the project and the proper transfer of this information from one party to the next. Owners adopt Cx to achieve their stated objectives and criteria at the beginning of a project rather than after a facility is occupied.

While circumstances may cause Owners to adopt Cx during the Design or Construction Phase of a project, such later implementation must capture the information that would have been developed had Cx begun at project inception. Beginning Cx at project inception will achieve the maximum benefits.

This standard describes Cx; the roles of the Cx Provider (CxP) and CxP Team; and a framework for developing an OPR, Basis of Design (BoD), Cx Plan, specifications, procedures, documentation, and reports. This standard also describes the general requirements for a training program for continued successful system and assembly performance.

1. PURPOSE

The purpose of this standard is to identify the minimum acceptable Commissioning Process (Cx) for buildings and systems.

2. SCOPE

This standard provides procedures, methods, and, documentation requirements for each activity for project delivery, from predesign through occupancy and operations, including

a. an overview of Commissioning Process (Cx) Activities,
b. a description of each process step's minimum activities,
c. minimum documentation requirements, and
d. acceptance requirements.