

**One Sheet Explanation of:
COMMISSIONING SERVICES**

The purpose of commissioning is to ensure that the Owner receives facilities and systems that meet its design and operational requirements.

In current practice, Commissioning Services are provided by 3rd party Commissioning Agents. (Abbreviated CxA in general and BECxA for Building Envelopes.) The simultaneous commissioning of mechanical systems and the building envelope is known as “Total Commissioning”.

Buildings that are properly commissioned typically have fewer change orders, tend to be more energy efficient, and have lower operating and maintenance costs.

In theory, 3rd party commissioning should not be required, as the Architect or Engineer (Designer) of record is both responsible and liable for ensuring that the owner's requirements are met in in the design, construction and turnover of the facility.

The extent to which the Designer verifies that the owner's requirements have been met before the facility is handed over is unfortunately a function of time and money. In trying to remain competitive, the Designer must gauge the level of risk his or her firm is willing to accept by limiting their own commissioning activities. Most often, the decision made is to “wait and see”, then pay for repairs. That approach, however, often results in failures that are not immediately apparent and repairs that are not permanent. In either case, the owner must spend considerable time and effort in managing, negotiating, and compensating for operational deficiencies until the deficiency is diagnosed and corrected.

The use of a 3rd party CxA serves six purposes:

- It engages a specialist practitioner that is well versed in the typical design failures that result in warranty issues, so that they may be eliminated inexpensively during design and construction.
- It provides for peer review of the design so that areas of concern may be discussed from the combined perspectives of the designer and future maintainer.
- It verifies that systems are designed to meet the Owner’s needs, and that they are installed as designed and working correctly at building delivery.
- It avoids the potential conflict of interest situation of the Designer having to establish whether any failures that may emerge are related to the design or to the installation/construction of the design.
- It provides a benchmark of building performance to facilitate future operations, maintenance, and recommissioning.
- It provides for lower overall life-cycle costs for the Owner.

A properly executed commissioning program begins with clearly stated Owner's Project Requirements and then engages the Owner, the Designers, the construction manager, the specialist sub-contractors and the CxA to identify and prevent potential problems from developing.

The initial cost of commissioning depends more on the complexity of the building design than on its size. For 'typical' building projects, the anticipated cost of total building commissioning is approximately 1% (+/- .5%) of the cost of construction.

Nationwide, it is generally agreed that Total Building Commissioning generates a three-year simple payback on industry-standard fees.

Once a building is operational, systems begin to wear. Recommissioning is normally performed every three to five years to maintain top levels of building performance and after any significant building changes to identify new opportunities for improvement.² During recommissioning, the building operating and maintenance systems are examined and cleaned as needed, parts may be fixed or replaced, and systems reset as if they were being installed new.

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¹ APPA, US General Services Administration (GSA), and US Army Corps of Engineers (USACE) all recommend budgeting between 0.5% and 1.5% of construction cost for CxA services, depending on building specifics and complexity. The National Institute of Building Sciences (NIBS) advises 0.3% to 1.0% of project budget for BECx services. The National Association of State Facilities Administrators (NASFA) recommends budgeting 1.25% to 2.25% of Construction Cost for Total Building Commissioning (CxA + BECx)

² The actual interval is adjusted to ensure that there is always a positive return on investment for the delivered services.