Erie County Juvenile Detention Center: Commissioning For Lower Operational Costs
Erie County

Background
The Erie County Juvenile Detention Center houses up to 100 juvenile offenders and security staff. The facility is arranged with four “pod” detention areas and a central support station and was designed to expand easily, if necessary. When the county decided to improve the construction and operations of the facility, and reduce long term operating costs, they identified Commissioning as one way to meet their goals.

Commissioning Process:
Commissioning began during the design phase, allowing CJ Brown, the Commissioning provider, to review all design documents. Specification language was prepared for the bid package so contractors were aware of Commissioning responsibilities. During construction, the provider wrote pre-functional and functional performance test plans for each system and piece of equipment to be Commissioned, including heating, ventilation and air conditioning (HVAC) and related distribution systems, kitchen hoods, variable air volume (VAV) and electrical system components. As construction neared completion, the provider wrote start-up checklists to ensure that equipment was properly installed and ready for testing. A sampling strategy was implemented for testing terminal equipment like variable air volume boxes.

Findings:
Perhaps the most significant finding occurred during the design review when it was discovered that the original design of the HVAC system did not meet the owner’s goal of reducing long-term operating costs. The Commissioning provider suggested higher efficiency HVAC components to provide Erie County with lower operating costs over the facility’s lifetime. During construction, the provider worked with contractors to avoid typical construction problems such as unauthorized substitutions on equipment, improperly installed ductwork, unsatisfactory duct seal applications, inadequate service space provisions, and inaccurate air and water balance reporting. As construction concluded, the team worked together during performance testing to avoid other problems such as

- Improperly set variable air volume (VAV) boxes
- Improperly calibrated thermostats
- Improper operation on the economizer
- Incorrect supply fan air distribution settings

The Commissioning process helped reduce energy and noise, improve temperature control, and correct balancing issues. Through proper training of building staff, and development of adequate system documentation, the Commissioning process ensured that benefits persist and that long-term operational costs remain at anticipated levels.

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"Commissioning is getting the building to function the way it should. That seems generic, but it means a lot more than energy. The commissioning provider coordinates and arranges the schedule to make sure that systems are tested and working properly."

Francisco Hidalgo, Erie County project manager.