LARIMER COUNTY
COMMITTED TO EXCELLENCE

www.larimer.org

Community Development Division
200 W. Oak Street - 3rd Floor
P.O. Box 1190
Fort Collins, CO 80521
970-498-7683

System Commissioning for Commercial Buildings

Updated to 2018 I-Codes 09/01/2019

Section C408 of the 2018 International Energy Conservation Code (IECC) requires that most mechanical and electric systems in new commercial buildings and commercial building additions be 'commissioned' prior to occupancy.

What is '*Commissioning*'?

Commissioning is a systematic process of ensuring that all building systems perform interactively according to the design intent and the owner's operational needs. It goes beyond typical equipment startup and TAB (Testing, Adjusting, and Balancing) procedures and includes integrated functional performance testing, operating personnel training, and verification of an owner's building operation manual among other functions. Studies have shown that commissioned buildings have lower operation and maintenance costs, use less energy, and are more comfortable.

Commissioning can be an intensive process and is not intended to apply to ALL new commercial buildings and additions. Therefore, the Larimer County Building Department has adopted the following policy on commissioning:

For new commercial buildings and additions **with a gross floor area exceeding 15,000 ft² (1,395 m²)**, commission shall be performed in accordance with Section C408 of the 2018 International Energy Conservation Code. A commissioning process shall be incorporated into the design and construction of the building project that verifies that the delivered building and its components, assemblies, and systems comply with the 2018 International Energy Conservation Code. Procedures, documentation, tools and training shall be provided to the building's operating staff to sustain features of the building assemblies and systems for the service life of the building. This material shall be assembled and organized into a systems manual that provides necessary information to the building operating staff to operate and maintain all commissioned systems identified within the building project. The owner shall retain the system manual and final commission report described to the right. An electronic formatted copy of the final commissioning report shall be provided to the Chief Building Official.

The following commissioning activities shall be completed prior to approval:

1. Either the project's Designing Architect or the project Mechanical and Electrical Engineers in concert, shall lead, review, and oversee completion of the commission process activities.
2. The owner, in conjunction with the design team as necessary, shall develop the owner's project requirements guide or manual. Such guide or manual will be distributed to all parties participating in the project programming, design, construction, and operations, and the commissioning team members.
3. The design team shall develop the basis of design (BOD).
4. The design team shall review both the noted guide and manual as well as the BOD for clarity and completeness.
5. Construction phase commission requirements shall be incorporated into project specifications and other construction documents developed by the design team.
6. Develop and implement a commission plan containing all required forms and procedures for the complete testing of all equipment, systems, and controls.
7. Verify the installation and performance of the systems to be commissioned.
8. Complete a final commissioning report satisfactory to the Chief Building Official.
9. Verify the owner requirements for training operating personnel and building occupants are completed.
10. Verify that a system manual in a form satisfactory to the Chief Building Official has been prepared. At a minimum, the system manual shall include operations and maintenance documentation and full warranty information. Shall provide operating staff the information needed to understand and operate the commissioned systems as designed.

The following systems, if included in the building project, shall be commissioned:

1. Heating, ventilating, air conditioning, indoor air quality, and refrigeration systems and associated controls;
2. Building thermal envelope systems, components, and assemblies to verify thermal, air, and moisture integrity;
3. All lighting controls and shading controls;
4. Service water heating systems; and
5. Renewable energy system