

Green Building Energy Sustainability Inc.

Commercial Commissioning Process

Purpose: This document is designed to communicate the new Commercial Commissioning requirements that are being adopted by cities in the DFW area. If you want your project to move quickly and easily through the permitting process, then you need to change your process and considerations.

Reason: The 2021 International Energy Conservation Code (IECC) has included provisions for Commissioning projects under construction. Enforcement of these provisions has previously been poor because there was no real process established to integrate the Commissioning program into the Permitting process. That has changed and the cities are going to be moving forward with implementing the Commissioning requirements. That process starts with a new document that will need to be provided when you submit your application for a new permit.

The type of Permit, Energy Considerations, and Commissioning vary greatly based on the type of project that is being undertaken. New construction has to completely comply with the 2021 Energy Code unless it is a Shell building any 1 or none of the interior sections is being finished out. Additions only have to make the new construction comply and the existing building is exempt. Existing Buildings only have to comply with the 2021 Energy Code regarding items being changed unless it is a Change in Occupancy. The applicable code varies with the different types of construction.

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Considerations: Type of project

1. Commercial Buildings
2. Residential Building greater than 3 stories
3. Mixed-Use Commercial / Residential Buildings

Type of Construction

1. New Construction
 - a. New Building
 - i. Shell Building
 - ii. Interior Finish-out
 - b. Addition
2. Existing Buildings
 - a. Remodeling
 - b. Renovation
 - c. Repair
 - d. Change of Occupancy
 - e. Change of Use

Pre Permitting requirements:

1. The new document that will be required by the cities in the North Texas area at Permit application is called the **Preliminary Commissioning Plan**. This is a summary document that includes the following information;
 - a. Energy component values used in the construction of the foundation, walls, windows, ceiling, roof, skylights, HVAC equipment, Water heater, and lighting controls/density
 - b. The Energy Path document for compliance with the energy code is required upfront and has to be verified with an Energy Report of the Building Energy Analysis. Each path (**2021 IECC or ASHRAE 90.1 - 2019**) has different mandatory sections and allowed component values. The simpler projects such as Interior Finish Outs or Renovations tend to use the 2021 IECC path and the larger more complex projects with lots of glass tend to use the ASHRAE 90.1 path

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These are your options for different energy paths of compliance

1. 2021 IECC

- a. Prescriptive Path (by the book values)
- b. Performance Path (using computer software)

2. ASHRAE 90.1

- a. Prescriptive Path (by the book values)
- b. Performance Path (using computer software)

- c. Letter of Energy Review from the Designer, Architect, Engineer who performed the Energy Analysis and Plan Review.
- d. The submittal plans MUST have the insulative building envelope indicated on the floor and elevational plans so it is indicated where the air barrier will be installed on the building. It MUST also include the location of skylights, as well as locations and dimensions Daylighting Zone on the floor plans.
- e. Manual J / and D (Heat Load Calculations, Sizing and Duct Register CFM rates to adequately heat and cool each area) to show that the HVAC systems are appropriately sized.
- f. Statement of Commissioning Requirements schedules that indicates what systems and components will need to be inspected, tested, and verified. The schedule is to be provided at Permitting.
- g. The Preliminary Commissioning Report is due before your final CO Inspection.

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- h. The Preliminary Commissioning Report contains;
 - i. Building Shell Interior Finish Out schedule and energy component value considerations when finished out.
 - ii. HVAC system components and schedule of commissioning test and findings, including Air Balancing testing of the duct system
 - iii. Water Heating system components and commissioning test and findings.
 - iv. Lighting system final lighting density, schedule, Findings of the commissioning inspection and testing including;
 - 1. Occupant Sensors
 - 2. Time switch controls
 - 3. Daylight responsive controls
 - 4. Specific application controls such as for retail display lighting and hotel/motel rooms.
 - 5. Exterior lighting controls
 - v. Results of any Duct Leakage testing if applicable
 - vi. Results of a Building Envelope pressure testing is applicable
- i. This Preliminary Commissioning Report goes to the city to allow them to finish their CO requirements and allow a CO inspection.

- j. A **Final Commissioning Report** is generated about 6 months after the CO is issued when seasonal conditions allow for the testing of the HVAC system and Economizer. That Report is only required to go to the Building Owner but is often provided to the General Contractor also to complete their records for that project. It should include;
 - 1. **Designer / Architect Engineer Letter of Energy Review** to indicate the type of Commercial project, which Energy Path is used to demonstrate compliance.
 - 2. **Architectural Energy Summary Sheet** will list all the energy component values used in the Building Envelope on this project.

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3. **MEP Energy Summary Sheet** will list the Mechanical system (HVAC and Plumbing) components used on this project.
4. **Electrical Energy Summary Sheet** will list the interior and exterior lighting power calculations and controls used on this project.
5. **Details about any Additional Energy Package** chosen for compliance.
6. **List of Mandatory Requirements** for the Energy Path Selected and used on this project.
7. **Schedule of Inspections and Testing for Verification** during and after the construction process.
8. **Control system manuals for the Building Owner**

Green Building Energy Sustainability provides Green Building Plan Reviews, Energy Reports, Manual J/S/D Calculations, Energy Inspections, Duct Pressurization test, Blower Door test, Infrared Scans, and consulting service to help you meet the challenges on the 2021 Energy code. One call handles it all, that's why you need GBES. Give us a call today at **214-244-3118** and let us help you make your property more energy-efficient, get your Permit and Certificate of Occupancy.