



THIRD-PARTY ENERGY CODE INSPECTION

Texas City Efficiency Leadership Council Best Practice

In recent years, changes to energy building codes have created significant opportunities to reduce energy consumption in new and renovated buildings. A 2011 U.S. Energy Department (DOE) study found that energy code improvements between 2006 and 2012 increased national energy savings potential by more than 30 percent. Further, a 2010 Institute of Market Transformation study showed that every dollar spent on energy code enforcement yields six dollars in energy savings, reducing the average household energy bill by more than \$300 a year. Nevertheless, despite this progress, compliance issues remain.

Reasons for non-compliance vary including cities' lack of resources and staff training, resulting in too few or undertrained code enforcement officials. Further, understaffing often means energy code enforcement becomes a lower priority, with more focus on public safety and health. There is also a lack of awareness by developers, architects and builders and uncertainty about what they need to do to comply. To address these issues and improve compliance, cities have begun implementing third-party energy code inspection programs. The expected benefit of such a program is that private-sector inspectors may be able to conduct inspections in a more cost-effective and efficient manner. They can be required to provide the expertise and technologies needed to perform necessary inspection services.¹ Moreover, such programs may reduce city personnel costs by eliminating staffing fluctuations tied to building cycles.

THIRD-PARTY ENERGY CODE INSPECTION DEFINED

A private sector entity, approved by the city, conducts city-mandated energy code inspections. These may include plan review, performance testing and field inspections.

¹ National League of Cities Municipal Action Guide on "Privatizing Municipal Services"

THIRD-PARTY CODE INSPECTION TRADE-OFFS

Pros

- Enhanced city energy code inspection capability, reduced inspector workloads.
- Less permitting time, more compliance.
- Lower project costs, quicker turnarounds; accelerated local property tax enrollment.
- Better quality control, more project oversight (city sets inspector criteria).
- Increased market awareness of project developer.

Cons

- Oversight can be time consuming; checks and balances can deplete code officials' resources.
- Difficulty establishing trust between city permitting office and inspectors.
- Potential construction cost increases if hiring required of contractors.

Implementing a Third-party Energy Code Inspection Program

Due to limited resources and concerns about non-compliance, many cities have implemented or are considering third-party energy code inspection programs.

When developing a program, it is important to maintain appropriate but not burdensome oversight so as not to negate the value gained from using outside contractors. There are several key factors to consider for recommendation when implementing a program.

Based on staffing levels and the number of building starts or permits, a city can determine the type of third-party inspector program that would best support its efforts. A third-party program typically takes one of three forms: (1) a third-party plan review with third-party energy code inspection; (2) third-party performance-based testing; or (3) a structure where the city outsources all components of energy code inspection to a third party.

Identification, Registration and Qualification of Inspectors

Identification

Different cities have different ways for inspectors to participate in their third-party energy code inspection programs. Some cities issue a request for proposals (RFP) and develop a pool from qualified RFP respondents. Other cities will allow participation by all qualified energy code inspectors or firms. Some contract with a single provider. Cities may use different firms in different roles based on their qualifications.

KEYS TO CREATING AN EFFECTIVE THIRD-PARTY INSPECTION PROGRAM

- City code contains procedure for authorizing third-party inspectors
- Inspector qualifications clearly stated
- City code specifies requisite documentation for proper inspection
- City code states how compliance is affirmed based on third-party inspection
- Conflict of interest policy included in inspector selection process

The recommended approach to developing the inspection pool is to open up the program to all qualified third-party inspectors but limit the number with a cap. The cap level is determined largely by the demand for energy code inspections, as well as the capacity of city personnel to manage the pool of inspectors. Limiting the pool to a manageable number of inspectors allows for good working relationships to form between inspectors and the city permitting office. Establishing good rapport should lead to greater compliance.

Registration

To register for the City of Houston's program, for example, each inspector or firm must complete an application.² If an entire firm is participating, it must list all of its inspectors and their certifications and experience. The inspectors are required to pay a fee to participate in the pool. This fee helps to sustain the program and cover administrative costs related to managing the pool. Upon submission of the application and payment of the fee, the city either approves or disapproves the application. This decision should be based on whether the inspectors possess the requisite certification and experience.

Qualification

The certification requirements will also influence the size of the pool. There are different certifications and qualifications required for the various types of inspection. State law requires that any personnel (city or third party) who are involved in the enforcement of energy codes be certified by the **International Code Council (ICC)** and maintain certification through ongoing continuing education.

A variety of certifications are available for energy code inspectors. At a minimum, third-party performance testers should be certified as home energy rating system (HERS) inspectors, National Comfort Institute (NCI) analysts or Building Performance Institute (BPI) building analysts. Cities also should require inspectors to have a minimum level of experience in building construction. For companies with multiple testers, each tester must be certified and provide the appropriate certification paperwork.

On-going Training of Inspectors

Another step to ensuring a pool of qualified inspectors is for the city to develop an outreach program. The program should be put in place to work through the problems inspectors encounter in the field and issues faced by the permitting department. An open dialogue will resolve many conflicts and help prevent delays in the permitting process. It may be best to have monthly meetings to discuss energy code matters and address any concerns. It may also be helpful to develop how-to guides based on the city's specific energy code and a list of frequently asked questions about the code that inspectors can reference in the field. This ongoing interaction should foster better communication between the outside inspectors and city staff that may help enhance compliance.

Choosing the Project Inspector

If a pool is established, there are usually two ways for an inspector or tester to be chosen for a project. The city can assign an inspector from the pool to a project, or the city can allow the project developer to choose an inspector from the pool. If appropriate safeguards are in place to prevent conflicts of interest, it is recommended that the city allow the contractors to pick from the pool. This method will reduce the city's administrative costs, as well as decrease the opportunity for inspectors to claim favoritism by the city for one inspector over another. Regardless of the method used, upon selection it is the responsibility of the project developer to contract with the inspector for inspection services.

Field Inspection Process Flow

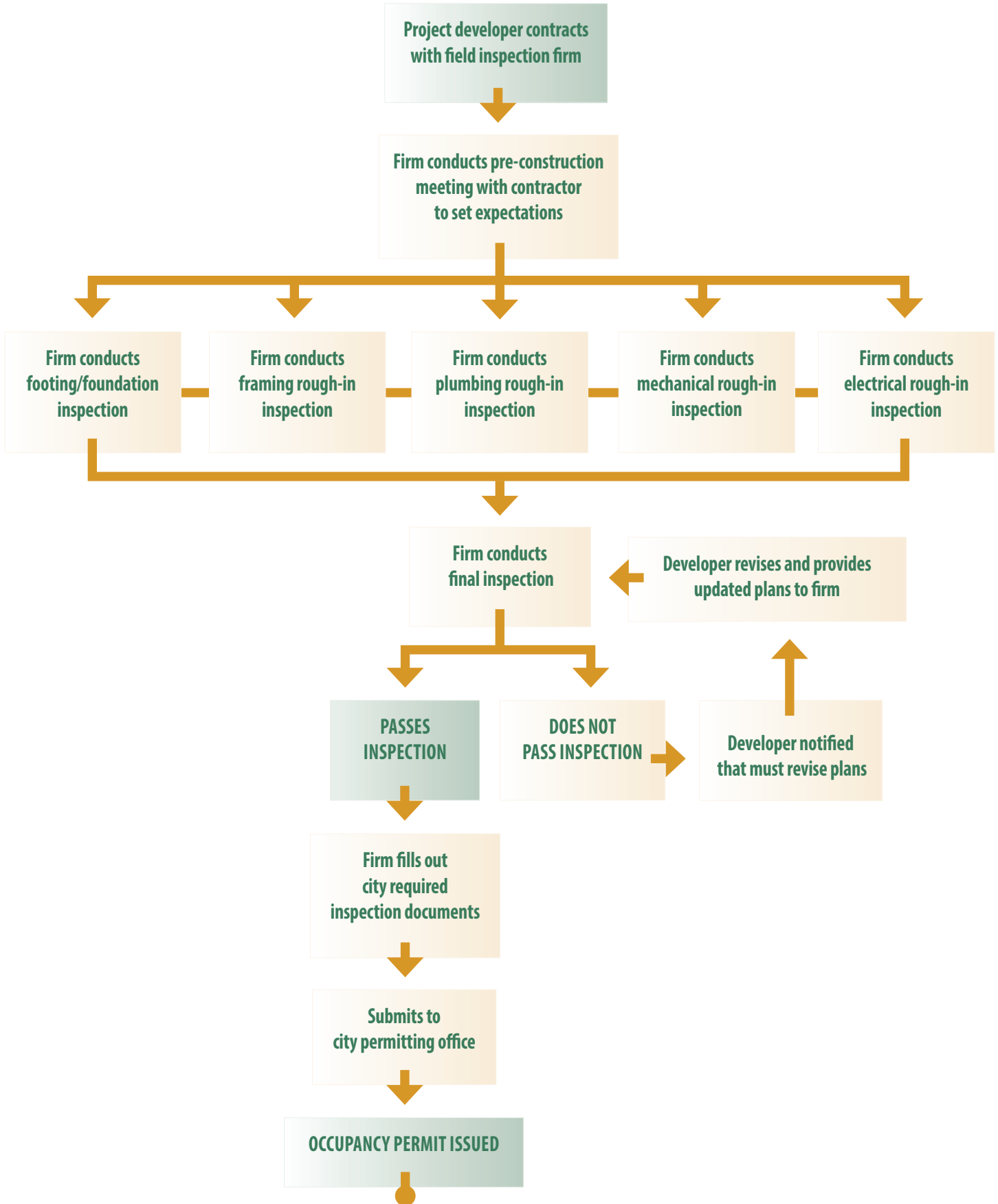
Plan Review and Field Inspection

Cities will typically have the plan review and field inspection as part of the same program. The process begins with the project developer contracting with qualified pool registrants to conduct plan review and field testing. The plan review process should consist of a review of construction documents to ensure they conform to building code requirements. These inspection processes can be managed by the same firm or separate firms. The process ends with the city's acceptance of the plans.

Upon completion of the plan review and commencement of construction, the third-party energy code inspector visits the building site at various points in the construction process to ensure that the energy code is being properly followed.

² Performance Testing Application, City of Houston, Texas

FIELD INSPECTION PROGRESS FLOW



This will include site visits to verify that systems are properly installed and substitution of non-compliant material does not occur. Further, field inspection confirms that systems are not damaged during the construction process, which would diminish the effectiveness of the energy saving measures. At each stage of rough-in inspection the inspector will require that any deviations from the approved plan be remedied. It is important that the city or other governmental jurisdiction require this step to ensure that the finished building meets all code requirements. At substantial completion, the inspector will return to the site to conduct a final walk-through inspection, then submit compliance documents to city code officials for final approval.

Performance Test

The process flow chart displays the steps to be taken to conduct an effective performance test. The process starts with the project developer or builder contracting with a qualified inspector and ends when the building passes the performance test. It is possible that a building may not pass the first time. If that occurs, the contractor would be required to return to the facility and bring it up to code. To save time, some cities allow contractors to be on site to help troubleshoot issues as they arise. However, to not prolong the performance test needlessly, the contractor is often given a set amount of time to remedy the problem during the inspection (typically one hour). The cities of Austin and Houston both require energy performance testing.

Monitoring and Verification

Upon establishment of the program, the city should communicate to both the building and inspection communities the minimum expectations and performance requirements of third-party energy code inspectors. For example, third-party inspectors may be suspended or removed from the program if they approve non-compliant plans, do not follow program guidelines or do not maintain certification. The city may establish a warning/penalty system that allows poor-performing inspectors to improve practices prior to suspension or removal from the program. The city may also consider fining non-compliant inspectors as an intermediate penalty prior to suspension and/or removal from the program. To ensure fairness, the city should implement an appeals process for inspectors who disagree with their suspension or removal from the program.

Further, the city should also monitor and verify inspector conformance by randomly auditing inspector performance. This would entail selecting a sample of properties and then reviewing plans and conducting field inspections of the sample properties as well as its own performance testing.

Conclusion

In Texas, there is no preferred way to engage with third-party contractors for performance testing or energy code inspection. Cities of any size may do so, however, and modify to meet their specific needs. A number of cities participating in similar programs are available to provide additional information about this approach.

PERFORMANCE TEST PROGRESS FLOW

