Code Compliance Strategies

Successful strategies for improving compliance with building energy codes

Streamlining Compliance Processes

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Streamlining is the practice of improving building regulatory processes to remove overlap and duplication and create more efficient administrative procedures. When implemented properly, this report argues, it not only makes building departments more efficient and effective at enforcing construction code requirements, but also improves customer service and provides financial savings for the local government, its citizens, and private industry. This report examines how streamlining can improve compliance with building energy codes.

Strategy Overview

In this compliance model, governments analyze their building regulatory process, gather input from stakeholders, identify strengths and weaknesses, and determine how to make their process more efficient or "streamlined." After burdensome and duplicative regulatory requirements are removed, local governments can focus on improving their administrative procedures to reduce the time it takes for a new building or building renovation to move through the regulatory process. Areas for improvement often include permit application processing, plan submission and review, and scheduling and conducting inspections. The application of information technology (IT) is a common way for local governments to streamline their process.

Why Streamline?

Burdensome and complicated regulatory processes can drive business out of town. A study[i] published by the U.S. Department of Housing and Urban Development states:

> In the early 1990s, jurisdictions in the San Jose/Silicon Valley region were surprised when several large information technology firms moved their operations to Austin, Texas. Leadership flew to Austin to learn why. One of the major factors contributing to attracting firms to Austin was a streamlined building codes administration and enforcement program that reduced the amount of time (and cost) for processing permits, gaining plan reviews and conducting inspections.

According to the Alliance for Building Regulatory Reform in the Digital Age, "it is about increasing the efficiency of modern construction codes, rules and regulations and reducing the amount of time it takes to move a new building or building renovation through the regulatory process by as much as 80% annually, saving both the private and public sectors tens of billions of dollars." [ii]

A response to a survey conducted by the National Conference of States on Building Codes and Standards (NCSBCS) and the Alliance provides evidence that streamlining worked in Ventura County, Calif. Ventura County noted that for its investment of $160,000 for a permits and inspections software package, the county had saved over $1,000,000 in costs over a six-year period, even as their staff shrank by three people and their workload increased by 80%. Furthermore, the final report from the survey stated:

> Jurisdictions of all sizes ranging from Los Angeles, CA (population 3,649,000) to Cobleskill, NY (population 4,533) provided data documenting reductions in processing time from 20% to 80% with the application of information technology to one or more codes administration and enforcement processes. Jurisdictions also reported marked improvements in their relationships with their clients/stakeholders (the construction industry, citizens, and their elected officials). [iii]

Streamlining is one way for local governments to cut costs while improving services, but it can also have an impact on economic development.

Streamlining and Economic Development

As shown above in the example of the San Jose/Silicon Valley region, streamlining can impact economic development. A 2010 report[iv] from the National League of Cities and the International Economic Development Council, "The Role of Local Elected Officials in Economic Development: 10 Things You Should Know," identifies the regulatory environment as one area to consider in a local economic development strategy. The report states: "For business leaders, time is money; they want to know that the regulatory process provides for timely, reliable and transparent resolution of key issues. If your city's regulatory policies are riddled with delays, confusing and redundant steps and multiple approval processes, a prospective business may very well choose to locate or expand in another commu-

nity." The report also suggests that elected officials should consider going through the process themselves as a new business or a developer would, to gain firsthand experience of the time, cost, hassles, and clarity of the process.

Beginning the Streamlining Process

Regulatory Review

The first step in the streamlining process is to determine what regulatory barriers may exist in a jurisdiction's code administration and enforcement program. This should include both an internal review, as well as soliciting input from clients and other stakeholders. A complete mapping (flow chart) of the regulatory process, across all agencies/departments involved, is essential to identifying areas for improvement. A few examples of burdensome or inefficient processes include:

- Excessive plan review time
- Lack of communication among departments involved in plan approval and/or having departments spread out across different buildings
- Lengthy and complicated process from permit application to certificate of occupancy
- Lengthy or confusing appeals/variance process
- Multiple applications/forms across departments
- Having mostly single-discipline inspectors and/or plan reviewers
- Multiple public hearings

Following the review of the regulatory process, a jurisdiction must identify the strengths and weaknesses, determine the "low-hanging fruit," and prioritize needed changes. This should include a plan for working with the local governing body if changes to a regulation/ordinance or existing government structure are required to implement a more efficient process. For example, one area of weakness may be that each of the departments involved in the approval process is located in a separate building, leading to longer review times. Often consolidating these departments

in one building will significantly improve the efficiency of the approval process, but this is likely to require approval of the local governing body. Alternatively, an investment in software can significantly enhance the efficiency of the approval process without the consolidation of departments, though it is still likely to require approval of the governing body. In Gillette, Wyo., an investment in electronic plan review software allows all city departments, as well as the county fire marshal and utilities involved in the plan review process, to receive all documents electronically.

Identifying Areas to Streamline

After inefficiencies in the regulatory framework have been fixed, it is time to determine what administrative areas are appropriate for streamlining. All cost-effective improvements that will enhance the compliance process can be targeted, including:

- External Communication

  Is the regulatory process (from start to finish) clearly described, including what applications need to be submitted and to where, who is responsible for approval, what is required for submission, what the anticipated time frame is, and what the appeals process is? Is it clear what codes are in effect? Are there printed and electronic materials that help convey the regulatory process?

- Internal Communication

  How do various offices/agencies/departments involved in the regulatory review process communicate? Is there a central tracking system? Is there one point person responsible for seeing a project through from start to finish? Who has decision-making authority?

- Permit Applications

  How are permit applications submitted (online, in-person, email)? What are the requirements for submission? How quickly are they processed? How are they tracked? Are pre-application meetings required for larger projects?

- Plan Review

  How are plans submitted (electronic, paper copies), and to whom? What are the submittal requirements? How are they tracked throughout the review process? What is the average turnaround time?

- Inspections

  How are inspections scheduled (online, in-person, automated phone system)? Are inspectors "multi-discipline" so they can conduct multiple inspections in one site visit? Are inspections grouped by proximity to one another? How are inspection results tracked? How are inspections conducted (paper checklist, electronic checklist)?

- Staff Qualifications and Training

  Do staff have the appropriate qualifications/certifications for their area of responsibility? Are there continuing education requirements? Are staff encouraged/reimbursed or otherwise incentivized to pursue additional certifications?

- Code Compliance Through Education

  What is the inspection failure rate? Are the most common code infractions communicated to stakeholders (i.e., posted on the web or printed and given out)? Is there a training program or are there other educational materials for builders and design professionals to educate them on the building code and code compliance process? Proactive education can reduce inspection times and the number of code violations.

After a thorough review of potential areas to streamline, officials should determine techniques for streamlining those areas identified as the most promising for process improvement. The next section will explore techniques that have proved successful.

Strategies for Streamlining

Many governments across the United States have implemented streamlining to improve their code compliance processes. Information technology is a common and effective way to improve many of the areas listed above. When implementing a streamlining strategy, it is best to start slow, addressing one or two areas of weakness at a time and building upon success. Starting slow and obtaining successful results prevents resistance to future streamlining efforts.

External Communication

How well information is communicated to a local government's customers (i.e., citizens, designers, builders, and developers) has a major impact on their impression of the services they receive. A clearly articulated web page, brochure, or checklist containing all the necessary information for various types of projects, permits, and approvals is key to understanding the regulatory process. Not only does this information assist the customer with understanding the building regulatory process, it helps to eliminate countless phone calls and emails with questions and needless disapprovals due to a lack of information. Fairfax County, Va., provides excellent information on its website, which clearly articulates all steps in the building regulatory process.[v] For example, the publication on residential additions contains all the necessary steps from the pre-permit phase through the final inspection. Soliciting input from stakeholders is an easy and effective way to obtain valuable feedback on areas that need improvement.

Internal Communication

Internal communication is as much about organization as it is about proximity. An organized and cohesive system across all departments involved in the building regulatory process allows for ease in tracking projects and clear communication among all the players. In addition, having all the players under one roof facilitates better communication and provides the convenience of a "one-stop shop" for customers. The City of Savannah, Ga., has set up a "one-stop shop" called the Development Services Department, which consolidates all of the city's engineering, inspections, and design and construction staff into one building.[vi] The use of software can also greatly enhance internal communication by providing ease of project tracking and status updates.

Permit Applications

A permit application is often the first official document submitted to begin the regulatory compliance process. A clearly written and easy to under-

stand permit application accompanied by a checklist of items required to be submitted with it, is an excellent way to reduce questions and frustration with processing incomplete applications. The City of Gillette, Wyo., provides a straightforward permit application that can be submitted as a hard copy or electronically and also provides a residential and commercial plan submittal checklist to ensure that plans submitted with the permit application contain the correct information.[vii]

Ventura County, Calif., provides a one-stop permitting webpage that provides step-by-step guidance to individuals seeking land use permits for residential, commercial, and industrial projects, including links to the permitting requirements and forms for all county and state departments involved in the permitting process.[viii] It is important to note that where software is used to process permit applications, it should be compatible with any electronic plan review software, which is discussed in the next section.

Plan Review

The plan review and approval process is one of the most complaint-ridden areas of the regulatory compliance process because it usually takes the longest. It is important that the plan review and approval process be clearly communicated from start to finish. Designers must know what codes they need to comply with and any specific local requirements. Local building departments need an effective way to track plans and revisions upon submission and to determine a plan's status in the regulatory review process.

The City of Dallas, Texas, provides an application checklist and a list of required documents, as well as providing online access for design professionals and contractors to review the comments on their plan reviews.[ix] As mentioned earlier, Gillette, Wyo., also has an electronic plan review process that incorporates all responsible parties and gives customers "near real-time" online tracking of plans as they move through the review process. It is important to note that moving solely to an electronic plan review process may require a

change in state statutes allowing architects and engineers to electronically seal their plans. State elected officials should make this change, where necessary, to enable this very effective streamlining measure.

Inspections

Inspections are a major part of the regulatory compliance process. When not handled efficiently, they can be a logistical nightmare and lead to wasted time and money. An effective system for scheduling inspections is one key area for consideration in streamlining. A central system that allows for online as well as automated phone scheduling can reduce the administrative burden on office staff and add efficiency to the process. Scheduling inspections based on their proximity to one another can greatly reduce travel time, while employing multi-discipline inspectors can reduce the number of trips to one building site. The City of Coppell, Texas, requires all building inspections to be scheduled using either their online or automated phone scheduling system.[x]

Staff Qualifications and Training

Having qualified staff and providing adequate training allows work to be done more efficiently. Building codes are continuously revised and updated, so it is imperative that code officials stay current as the codes are updated in their jurisdiction. Requiring certifications, such as those offered through the International Code Council (ICC) (www.iccsafe.org), is a great way of ensuring that local inspectors and plan reviewers have a minimum level of code knowledge. Requiring ICC Certifications (especially at the state level) allows for consistency across jurisdictions in establishing minimum qualifications for inspectors and code officials. Elected officials should encourage or require training for building department staff by providing funding for training and reimbursement for the cost of achieving certifications. Colleges and universities should explore the development of degree programs for inspectors and code officials. Pennsylvania requires any person engaged in the enforcement of the state's Uniform Construction Code to be a Certified Code Official in each area of work they perform.[xi]

Code Compliance Through Education

Education is an effective strategy for improving code compliance rates and can help reduce inspection and plan review times. By educating local builders, tradesmen, and design professionals on code requirements, future violations can be reduced. Education can take many forms, including: printed brochures, online courses, classroom training, in-the-field training, and the publication of the most commonly found code infractions. Having local code officials conduct the training allows them to be seen as educators rather than just a policing authority. Code officials can also work through their local chapters of the ICC to provide this training.

Technology

As some of the examples above demonstrate, technology—including software, internet-based applications, mobile devices, electronic seals and signatures, and electronic storage—all have the potential to improve the efficiencies of various code compliance processes. Most jurisdictions across the U.S. have implemented some type of electronic process in place of a less efficient paper version. As technology continues to advance and become more affordable, and as stakeholders continue to request and expect internet-based solutions, the trend of electronic processes replacing paper will increase.

When local officials look to implement new software to enhance their existing processes, it is important that their decision consider how a new software program will interact with and be compatible with their existing programs and devices. For example, a jurisdiction should consider whether new electronic plan review software is compatible with existing electronic permitting, zoning, or finance software. Additionally, jurisdictions should consider their IT policies regarding the download of programs that may be required to view plans electronically. Many jurisdictions prohibit their staff from downloading any programs to their computers without approval from the administrator. Jurisdictions must ensure that their staff are equipped with the appropriate programs to view electronic plans.

Often, adopting new electronic tools is well suited for an overall streamlining initiative because it requires a close look at current processes when determining how to transfer them to electronic means. For example, Boca Raton, Fla., reduced its application types from more than 150 to 90 and its permit types from 130 to 12 during its process of moving to a new software program.[xii]

What Can Streamlining Do for Energy Efficiency?

The national model building energy codes[xiii] have increased energy saving potential by nearly 30% from 2006 to 2012. Unfortunately, anecdotal evidence suggests that compliance rates with building energy codes are around 50%. Lack of enforcement is one reason for such low compliance rates. The reasons for inadequate enforcement include: (1) lack of funding for additional inspections, (2) lack of knowledge/understanding of building energy codes (qualified staff), and (3) building energy codes are seen as secondary to fire and life safety codes.

By improving the efficiency of regulatory and administrative processes, reasons (1) and (2) above can largely be mitigated. As shown in the Ventura County, Calif., example cited earlier, streamlining can provide substantial savings while improving services. Financial savings can be used to invest in new staff with energy code knowledge and/or certifications, to train and certify existing staff on energy codes, or to contract with a third party to provide energy code services. Improved efficiencies may also allow existing staff to provide more thorough plan review and inspections for building energy code requirements. By providing solutions for reasons (1) and (2), local building departments can treat building energy codes with the same attention as fire and life safety codes.

Conclusion

Streamlining building regulatory processes is a sensible "win-win" approach for government and industry. Improving regulatory and administrative efficiencies can save both time and money for the public and

private sectors while not de-regulating or compromising appropriate oversight and safety. When undertaking streamlining initiatives, jurisdictions should consider improvements to their enforcement of building energy code requirements. Building owners, home owners, and tenants who spend less money on their energy costs have more money to invest in the local economy (restaurants, shops, etc.).

Acknowledgements

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i. Guide to More Effective and Efficient Building Regulatory Processes Through Information Technology
ii. Alliance for Building Regulatory Reform in the Digital Age
iii. National Conference of States on Building Codes and Standards
iv. The Role of Local Elected Officials in Economic Development
v. Fairfax County, Virginia Building Permits Web Page
vi. Savannah, Georgia Development Services Department
vii. Gillette, WY Engineering and Development Services
viii. Ventura County, California One-Stop Permitting Webpage
ix. Dallas, TX Building Inspection Office
x. Coppell, TX Building Inspections
xi. Pennsylvania Dept. of Labor and Industry
xii. Avolve Software Corp.
xiii. International Energy Conservation Code and ASHRAE Standard 90.1

About the Institute for Market Transformation

The Institute for Market Transformation (IMT), founded in 1996, is a Washington, D.C.-based 501(c)(3) nonprofit organization promoting energy efficiency, green building, and environmental protection in the United States and abroad. The prevailing focus of IMT's work is energy efficiency in buildings. In particular, IMT aims to strengthen market recognition of the link between building energy efficiency and financial value. Our activities include technical and market research, policy and program development, and promotion of best practices and knowledge exchange. IMT is the U.S. hub of the Global Buildings Performance Network. For more information, visit www.imt.org.

About the Global Buildings Performance Network

The Global Buildings Performance Network (GBPN) has a mission to significantly reduce greenhouse gas emissions associated with building energy use by

- Promoting best practices in building energy efficiency and performance
- Offering world class energy efficiency expertise to policymakers and business leaders
- Advancing policies and programs that promote low carbon, energy-efficient buildings worldwide

The GBPN operates in the United States, Europe, China, and India with its global center in Paris. For more information, visit www.globalbuildings.org.