



National Institute of
BUILDING SCIENCES

National Council on Building
Codes and Standards

Engaging Code Officials Early in the Process to Achieve High-Performance Buildings



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Realizing High-Performance Buildings by Engaging Code Officials Early in the Process

*A White Paper by the National Institute of Building Sciences
National Council on Building Codes and Standards (NCBCS)*

Introduction

In recent years, building owners and communities have increasingly focused on improving the design, construction and operation of buildings to meet enhanced levels of performance. Many people within the building industry recognize the role increased collaboration during the design and construction process can play in realizing the desired levels of performance. However, the collaborative process to date largely leaves out one important participant—the code official.

Many communities are adopting customer-service focused models to engage with their citizens. The code department can and should serve as a shining example of a customer-centered municipal function, while maintaining its important mission of assuring community safety. The code department’s historic and long-standing charge of ensuring health, safety and welfare is synonymous with community growth, development and prosperity.

Involving code officials, such as building, fire, mechanical and plumbing officials, early in the project provides the project team with comprehensive client services while helping to deliver predictable enforcement expectations. This initial engagement creates a link between stakeholders, economic development and health, safety and welfare by involving the relevant authorities. In 2017, the National Institute of Building Sciences National Council on Building Codes and Standards (NCBCS) undertook an effort to examine the benefits of involving code officials early in building projects and how jurisdictions and code departments could begin engaging earlier in the design process.

Background

Historically, the role of the code official has been a pragmatic one based on verification. The code official verified compliance by reviewing documents and inspecting work in the field. For decades, the regulatory model of submit, permit, inspect and occupy worked effectively and efficiently with the delivery model of design-bid-build. Unfortunately, that passive regulatory model does not effectively or responsively serve today’s changing building industry practice.

While the regulatory model remained basically unchanged, the construction industry’s delivery models have continued to evolve. Design-build, construction management-centered models, integrated project delivery (IPD) and even design-build-operate-maintain delivery methods are supplanting traditional design-bid-build delivery models.

The traditional design-bid-build project moved through a linear but clearly fragmented process. Programming and scoping led to the production of schematic, design development and construction documents. Once the bid process was completed, construction would commence based on the construction documents. Any contact the project team had with regulatory authorities early in the project focused on processes and procedures in anticipation of formal application, typically following completion of construction documents.

Where implemented, digital technology advanced the time and technology aspects of regulatory administration, but the underlying process continues unaffected. In some jurisdictional models, any significant change over the decades has only restructured the roles of the responsible parties. Where the design professional in responsible charge may begin the conversation with the owner, the builder may influence the final design solution based on schedule and cost. The regulatory official's input regarding compliance follows much later during permitting and construction. This simplified, linear progression continuously redefines the project lead.

Today, despite evolving delivery models, the project team's interaction with code officials continues to occur late in the design process. This late involvement often contributes to project delays and increased costs because the project team's identified design solutions do not comply with adopted codes or standards. Too often, project teams only engage the regulatory agencies at time of submittal. Yet, code officials in jurisdictions across the nation have found that identifying concerns early provides the best opportunity to rectify them.

The contractual and legal roles and responsibilities of all stakeholders flow from the specific project delivery model selected for the project. The project's regulatory component sits parallel to those roles and responsibilities. While not directly engaged in the contractual relationship surrounding the project, the code official plays an integral role in the project's success and in meeting the expectations of all stakeholders. The project-specific stakeholders represent all non-regulatory parties, including the owner, developer, owner's representative, architect, design professionals, contractors and commissioning agents. The code officials charged with achieving safety, fire prevention, maintenance and health performance often serve as a voice for many post-occupancy performance issues during the design and construction process, and represent the subsequent tier of stakeholders, such as building occupants and users of the structure, as well as the surrounding community.

Shifting the Paradigm

Regardless of the delivery model selected, the industry's transformation to delivery models that focus on reducing costs and increasing speed to market directly impacts the regulatory responsibilities of the code official. It is time to transform the project team's engagement of the regulatory agencies to address these shifting roles.

The objective of early code official involvement is to establish the code official as a vital member of the project team who contributes to the achievement of project goals by ensuring the health, safety, welfare of building occupants and reaching performance expectations, rather than creating the perception of being a hindrance. The key strategy to realizing the benefits of involving the code official early begins with engaging all parties. This starts with facilitating an initial contact meeting of all stakeholders (an agenda for such a meeting is available in Appendix

A). This coordinated and collaborative meeting serves to recognize scope, schedule, expectations, roles and communication, and should not be confused with the typical preliminary or courtesy code meeting or review. This proposed recalibration intends to establish a comprehensive strategy for construction project success based on early code official engagement. Recognizing the value of code-specific discussions, the early involvement of the code official should focus on all stakeholders collaborating to clarify and set scope, roles, schedules, communication and responsibilities.

To initiate, the owner or lead design professional invites key project participants, including the owner, developer, owner's representative, architect, design professionals, contractors and commissioning providers to participate, holding the meeting in the community where the project will be located to provide an opportunity for municipal representatives from public works, zoning, planning, fire and other relevant departments to attend. Based the experiences of a number of jurisdictions that use this approach, additional regulatory agency representatives from public safety, transportation, aviation and public health, as well as natural resources also should attend.

Bringing everyone together to address the relevant project-specific concerns in the neutral territory of the regulatory agency opens the dialogue and brings tangible benefits to all stakeholders. Those same discussions benefit the regulatory process, allowing resource planning for timely reviews and initial regulatory actions, clear understanding of project expectations, as well as defined roles and responsibilities. Separate from code compliance review and certainly removed from any consultative dialogue, engaging the code official at this stage inevitably sets the project on a course to meet time and cost expectations with respect to the regulatory process.

After this initial contact meeting, participants better understand the project scope and performance expectations. The meeting allows clarification of the schedule, including owner expectations, builder needs, design team delivery dates, the regulatory processes, approvals, permitting, communication and responsibilities. Regardless of project size or scope, this approach recognizes the official's responsibilities beyond the traditional regulatory model and emphasizes a collaborative role.

In addition, when the design team is considering using innovative or alternative products or systems, early involvement with the code official provides an opportunity to discuss what documentation the code official will require (evaluation reports, additional tests, engineering calculations, peer reviews, inspections, etc.) to support decision-making on whether to permit an alternative product or system. This allows the design and construction team to better understand the priorities of the jurisdiction and the most common code-related issues. At the same time, the code official can provide the project team with examples of solutions that others have successfully deployed in similar projects. When the design team, contractor and code official agree from the start about performance expectations and documentation requirements for the alternative product or system, it helps facilitate the permit and review process.

The early involvement model has already proven to benefit a broad range of projects, from small to large, and the meeting format being used remains largely the same in a variety of jurisdictions. Across locations, regardless of project size and scope, the total commitment time for the initial meeting usually lasts between one to one-and-a-half hours. For example, in Wisconsin, the meeting for a simple remodel of a nursing home wing engaged all parties, from the municipal fire official to the design and construction team. The building official facilitated

discussions on the phasing of resident transfers and relocations, material movement, fire protection system shutdown, interim life safety plans, phased inspections and completed space turnover, as well as document and communication methods via digital or hard copy. Other jurisdictions have similar examples.

Regulatory Implementation

The historic role of the code official has been reactive rather than proactive. Yet, just as project delivery methods have changed, the role of the code official must evolve. The historic role of determining compliance, coupled with the changes in contractual relationships between stakeholders, is increasingly placing the code official in the role of consultant. This shift necessitates new leadership roles for code officials. In simplest terms, this approach requires earlier engagement, with a focus on greater involvement throughout the project. As projects move forward, familiarity builds, not only with the projects themselves, but among all stakeholders, establishing a collective desire to realize successful projects.

Once established, the ongoing relationship throughout the life of the project shifts the code official's role beyond a point-in-time regulator towards more of a facilitator and regulatory administrator. Rectifying issues during the design phase is less expensive and time consuming than in the field.

Jurisdictions must decide when to require early code official involvement. A jurisdiction may wish to begin implementing such concepts on a pilot basis, either for specific project types (maybe projects large in scope or with significant community impacts) or by the request of the project team. However, the argument remains that achieving anticipated benefits to the community relies on reimagining the regulatory official role.

Every state in the nation has a formalized administrative process law for regulatory actions, with step-by-step processes maintained under administrative rule. At the same time, those decades-old rules remain in place without updates that recognize contemporary design and construction models. The construction industry has moved beyond the regulatory model of review, permit and inspection. Like the restructuring of the stakeholder roles based on project delivery, the role of regulatory stakeholders also must shift. Early involvement of the building official engages all stakeholders, recognizes concept approvals and ultimately results in a final acceptance and occupancy of a compliant, safe and higher-performing project.

Challenges to Implementation

The lack of available resources, specifically staffing, at any state or municipal agency present the first perceived challenge to implementation. The ability to implement early code official involvement varies from jurisdiction to jurisdiction. The regulatory models that address the development and adoption of codes and standards, as well as enforcement processes and procedures, differ from state to state and among municipalities within those states. The administration of the regulations depends on staffing levels and expertise, yet many agencies across the country face the challenge of understaffing. At the same time, means and methods

continue to demand greater specialization and aptitudes of regulatory officials, whether residential or commercial construction.

As identified in prior work done by the Institute for the International Code Council, some code officials are content to remain under the radar and be a reactive rather than a proactive participant in the design and construction process.¹ That report identified several reasons why the expectations of current and future code officials must evolve. In particular, community leaders and potential future code officials need to appreciate the contributions code officials provide in assuring the health, safety and welfare of the communities they serve.

Conclusion

The NCBCS proposes a reimagined role for code officials. Project delivery models continue to change and evolve to recognize changes, ranging from market demands to technology. However, the regulatory component of this system remains largely unchanged.

Contrary to the existing role of the code official, where early involvement means a preliminary or courtesy code review and conversation with the design team, NCBCS proposes a recalibration. That recalibration engages code officials as early as possible with all stakeholders. Understanding that all stakeholders focus on their specific roles to contribute to the success of the project, the regulatory platform serves as a common ground. The regulatory agencies remain charged with protecting the basic principles of health, safety and welfare, but coupled with these basic founding principles are the new goals of growth, sustainability, resilience, economic development and prosperity.

Engaging the code official early shifts the paradigm from the old role of verifier by review and inspection to a new one of project facilitator. However, code departments face challenges now and into the near future, such as lack of staffing, training, technology and community resources, which all present challenges to a regulatory agency's effective performance. Recalibrating the code official's role, while recognizing the responsibilities of all stakeholders, will help meet that challenge. The facilitated leadership role of the code official in any community is a key component to a coordinated and collaborative approach to any project.

NCBCS Early Code Official Engagement Sub-Committee

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¹ *Raising the Profile, Filling the Gaps: Report from a Town Hall Meeting on the Future of Code Officials.* International Code Council, 2014.

Project Initiation Meeting
Draft Meeting Agenda

Attendees:

Project Team: Owner, Owner's Representative(s), Design Professionals in Responsible Charge (Design Team), Contractor(s), Commissioning Provider

Local Government: Building Official, Fire Official

Optional depending on scope of project: Public Works Representative; Planning and Zoning Representative; Transportation Representative; State and/or Local Environmental Protection/Water Representative; State Health Official; and other federal, state or local officials.

Facilitated by:

Local Building Official. Facilitation is to focus on moving all attendees through the agenda.

Agenda:

- Welcome statement by facilitator, thanking all attendees, emphasizing role of code official to facilitate, as well as brief explanation of responsible roles of meeting attendees and others (owner, design professional, local regulatory officials, etc.).
- Introductions of all stakeholders including contact information and communication protocol
- Project Scope
 - new, addition or alteration
 - phases
- Owner expectations
 - completion date / occupancy
 - performance goals
- Project Schedule
 - design phases
 - submittals
 - site prep
 - demolition or excavation
 - material delivery
- Design Team
 - schedule
 - submittal criteria
 - submittal format
- Municipal
 - submittal and review process
 - permitting

- inspections
- specific building department focus
- specific fire department focus
- occupancy
- incentives
- Submittal process and format/medium
 - BIM, PDF or paper
 - CD, USB drive, download
 - Complete set or partial (calculations, specs, project manual)
 - Municipal expectation
- Construction Phases
 - inspection protocol and scheduling
 - changes, construction bulletins

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