

Reimagining the ICCPC – Introduction to Research and Roundtable Discussions

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Reimagining the ICCPC – Presentation and Roundtable Series

Overview

- Introduction of Brian Meacham
- Introduction of research project on 'reimagining the ICCPC'
- Overview of research effort
- Overview of Survey 1
- Overview of Roundtable series
- Overview of plan for Workshop(s)

Introduction – Brian Meacham



- Involved in research on PB design for fire and PB codes starting in 1990s
 - Code development committee for ICCPC in 1990s
 - Research in defining PBD for fire for SFPE in 1990s
 - Research on risk as a basis for performance
- Have served on numerous codes- and standards-making committees
- Have consulted to / served on expert panels in Australia, Japan, New Zealand, Scotland, Singapore, Sweden, World Bank
- Invited to lead this research effort for the ICC

Introduction to *Reimagining the ICCPC* Research Initiative

- The ICC Performance Code for Buildings and Facilities (ICCPC) was developed in 1996-2000.
- Much has happened in the areas of performance-based building (PB) building codes and PB design since, in the USA and internationally.
- Assessing the current structure of the ICCPC in the context of other PB building codes currently in use around the world, emerging issues and trends, and advancements in PB design.
- A survey was conducted, and a series of 'roundtable' discussion forums will be held to solicit input and engagement to determine attributes of a 'global best practice' PB building code structure and supporting infrastructure.

Introduction to *Reimagining the ICCPC* Research Initiative

- Roundtables will be comprised of small groups of persons from various sectors, such as architects, engineers (FPE, SE, ME, ...), building officials, fire officials, owners & managers
- Aim of the roundtables is to collect input on perception of PB codes and design, gaps in current practice, and items that need to be addressed
- Following the roundtables, a larger workshop, with diverse stakeholder representation, is planned
- After input and research, a proposed outline for a 'reimagined' ICCPC, and needs to supporting infrastructure, will be developed and circulated to interested stakeholders for input.

Introduction to *Reimagining the ICCPC* Research Initiative

- Why this research effort now?
 - Increasing interest from various stakeholder groups – most particularly the design community and development groups that are working in lower- and middle-income countries – for an updated performance-based code.
 - Exploring whether a ‘reimagined’ ICCPC could be more readily adopted in USA, as well as in jurisdictions around the world.
 - For example, reduce limitations related to referenced standards, non-metric measurements, and particular materials that may not be readily available or accessible outside the United States.

Introduction to *Reimagining the ICCPC* Research Initiative

- Why this research effort now?
 - Since 2000, many 'new' essential elements required in any modern code, such as sustainability, resilience, indoor air quality, renewable energy and energy storage systems, and novel building materials.
 - Need to consider the current state of practice in performance-based design: what advancements have been made in the U.S. and internationally, what is needed for broad acceptance and implementation, what is needed to deliver performance-based designs with a high-degree of confidence.

Introduction to *Reimagining the ICCPC* Research Initiative

- What are the research objectives?
 - To understand current thinking and perspectives across numerous disciplines, from design to enforcement, and materials and systems to performance evaluation and testing, about
 - how performance-based codes and design are viewed,
 - what can and should be done to make them each robust and achieve a high level of confidence,
 - current state of design approaches, tools, methods and data,
 - qualifications / competency needs for the people who are undertaking design, verification, review and approvals.
 - To outline the essential components of a reimagined performance code that embodies current thinking in the U.S., global experiences and best practices, existing and emerging societal expectations for building performance, existing and emerging data, tools, methods, materials and systems, and needs around actors in the system.

Introduction to *Roundtable Discussions*

- Roundtable discussions are primarily intended to be information gathering, or learning sessions, in which the participants are invited to provide their perspectives on a set of topics associated with PB building codes and PB design.
- Not easy to include all interested stakeholders, but included a broad cross-section of views
- Not easy to include all disciplines, so focus on architects, building officials, engineers (energy, FPE, MEP, SE), developers and managers, fire officials, resilience.

Introduction to *Roundtable Discussions*

- Roundtable 1 – Overall Perceptions

1. What is your view of performance-based building codes and performance-based design?
2. How familiar / experienced are you with working with/under a performance-based building code (regulation)?
3. How familiar / experienced are you with performance-based design?
4. Do you think that the ICCPC sufficiently 'meets the need' from your perspective, in terms of clearly defining goals, functional expectations, performance requirements, performance criteria (measures), acceptable guidance for design, and acceptable guidance for demonstration of compliance / verification of performance?
5. How do you view the 'state of readiness' of the profession / discipline (of the roundtable participants) with respect to the ability to undertake or review performance-based design, including adequacy of criteria and design and compliance / verification standards or guidance?

Introduction to *Roundtable Discussions*

- Roundtable 1 – Overall Perceptions (Cont'd)
 6. What do you see as the biggest challenges currently faced in gaining broad acceptance of performance-based building codes and performance-based design?
 7. What do you see as the biggest opportunities currently being missed (if you do not think the current approach adequately meets the needs)?
 8. What do you see as critical aspects of any reimagined ICCPC that may come in the future, and the supporting regulatory infrastructure, that must be considered going forward?
 9. What are your 'top three' items that must be addressed for a successful reimagined ICCPC, and,
 10. How do you see the ability of your profession / discipline (of the roundtable participants) to contribute to successful development, implementation and use of any reimagined ICCPC?

Introduction to *Roundtable Discussions*

- Roundtable 2 – Technical Issues

1. What is the most appropriate way to define goals, objectives and performance requirements?
2. Are different approaches to defining goals, objectives and performance requirements for different areas (e.g., energy performance, structural performance, ...) needed?
3. Should risk be used as a basis for establishing performance requirements, and if so, how?
4. Should performance requirements have associated, quantified performance criteria?
5. Should quantified performance metrics be included in the code, and if so, where should they come from?

Introduction to *Roundtable Discussions*

- Roundtable 2 – Technical Issues (Cont'd)
 6. Should quantified risk metrics be included in the code?
 7. Should engineering (performance-based) design and verification methods be mandated by (required to be referenced by) the code, or can non-mandatory means be acceptable?
 8. Is it required to have mandated (referenced) acceptable solutions (compliance documents)?
 9. Are there some minimal competency / qualifications requirements, for operating in a performance environment, that are needed beyond the current structures?
 10. To what extent should peer review be built in, and what are appropriate ways to manage it?

Introduction to *Workshop*

- It is intended to record and post the roundtable discussions for all to view.
- Following roundtables, report will be developed to summarize key issues, and propose a outline for a reimagined ICCPC
- It is then intended to hold a broader workshop – perhaps over multiple days (and likely virtual) – to bring larger, broader group together to discuss outline for a reimagined ICCPC, how it might be structured, what it might include, and what supporting infrastructure might be needed to make it successful

Outcomes
from the
*Reimagining
the ICCPC*
Research
Initiative

- Roundtable recordings available
- Workshop recording and report available
- Development of a summary findings and recommendations report to be submitted to the ICC Board for consideration
- Any future actions at the decision of the ICC Board

Thank you!

- Questions or comments?
- [Reimagining the ICC Performance Code - ICC \(iccsafe.org\)](https://iccsafe.org)
- Performance@iccsafe.org