

TG37 - Performance-Based Building Regulatory Systems

TG37 has a new Coordinator in the person of Beth Tubbs from the International Conference of Building Officials. More about Beth and how she views TG37 below - clearly she has a sharp perception of where she wants to take the Group and that augurs well for its immediate future.

Firstly, however, a report on the outcome of the meeting held on 27th and 28th October 1999 in San Diego. This was noteworthy in that those who participated achieved a consensus on revised Scope and Objectives, Work Programme and Planned Output and put together a meeting schedule for the coming two years.

The new version follows.

Revised Scope and Objectives, Work Programme, Planned Output and Meeting Schedule of TG37

Scope and Objectives

The Objectives are to contribute to:

- development at an international level, framework, guidance and support documents on construction related regulatory environment issues related to the development, implementation and support of performance based regulatory systems
- identification of the broad public policy, regulatory infrastructure, education and technology issues related to managing the successful implementation and continuation of construction related performance based regulatory systems
- advancement of a common understanding of the international regulatory environment
- promotion of the exchange of information and to facilitate a more open environment of inter-jurisdictional commerce in the area of building design and construction.

The Task Group will work in close collaboration with IRCC - the Inter-Jurisdictional Regulatory Collaboration Committee. In this collaboration IRCC will focus on the development of a broad framework for Performance Based Regulatory Systems, while TG37 will focus on detailed analyses and case studies concerning selected crucial topics for the actual development and implementation of such systems.

Work Programme

The Work Programme is aimed at producing a guidance document outlining the issues, problems and solutions that have been useful in achieving a successful implementation of performance based building regulatory systems.

The Task Group is expected to have a major input into the CIB Pro-Active Approach Programme on Performance Based Building - Codes and Standards.

First priority topics for analyses and case studies are the following:

- Identification of required pre-standardisation activities, including technology related requirements. Information Contact: Mr. Doug Beller, National Fire Protection Association, USA
- Acceptable / deemed to satisfy solutions, including the position of those solutions in regulatory

systems, ways of documentation, test methods and alternatives for authority to accept such solutions. Information Contact: Brian Meacham, Society of Fire Protection Engineers, USA

- Multiple levels of performances, including relationships to risks and events, how to capture levels in regulatory systems, new and emerging priorities. Information Contact: Mr. Bob Bowen, National Research Council Canada - Institute for Research in Construction, Canada
- Qualitative versus quantitative performance requirements, including the aspect of enforceability and test methods. Information Contact: Dick Bukowski, NIST, USA

Planned Output

- 2001: Report with analyses and case studies concerning crucial aspects of the actual development and implementation of Performance Based Building Regulatory Systems, to be presented in conjunction with the CIB World Building Congress in 2001.

Meeting Schedule

- 19 June 2000, Norway, Oslo: CIB Task Group Meeting on Performance Based Building Regulatory Systems, in conjunction with an IRCC Meeting
- November 2000, Japan, Tokyo: CIB Task Group Meeting on Performance Based Building Regulatory Systems, in conjunction with an IRCC Meeting
- 1 April 2001, New Zealand, Wellington: International Workshop on Performance Based Building Regulatory Systems, in conjunction with CIB World Building Congress (provisional)
- September 2001, United Kingdom, London: CIB Task Group Meeting on Performance Based Building Regulatory Systems, jointly with an IRCC Meeting



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Introducing the New Coordinator



Ms. Beth A. Tubbs

Beth Tubbs has degrees in Civil Engineering and Fire Protection Engineering from Worcester Polytechnic Institute in the USA. She is a Licensed Professional Engineer in Fire Protection Engineering in the State of California.

Her current role is as a Staff Engineer at the International Conference of Building Officials where she administers code development process, code maintenance and interpretation for the Uniform Building

Code and Uniform Fire Code as a representative of the International Fire Code Institute. She is closely involved in code development committees, including the Secretariat of the International Fire Code and International Building Code Performance Committees, providing Building and Fire Code technical support and assisting with related educational activities as well as acting as a liaison with other national agencies on fire protection issues.

She has explored many aspects of fire protection engineering, particularly fire dynamics through the education received from Worcester Polytechnic Institute's Fire Protection Masters Programme. In studies, design situations were developed and applied in a traditional regulatory manner and in a performance based manner taking into account issues such as fire dynamics, passive and active fire protection systems, feasibility and cost.

Her thesis titled "Analysis of Common Fire Severity Methods and Barrier Performance" dealt with the development of the barrier performance aspect of a performance based analytical method of design performance, entitled Building Fire Safety Engineering Method. More specifically, several fire severity methods were compared. Four different fire severity methods were used in this study. The comparison was conducted by utilising several variables including building materials, room size, opening size, and fuel load.

In recent years she has been especially active in a variety of Committees including those related to the International Code Council, the Society of Fire Protection Engineers and the Inter-Jurisdictional Regulatory Collaboration Committee.

The new Coordinator takes a penetrating look at the Work Programme outlined above.

States Beth Tubbs:

Work Programme

The Task Group will essentially study and produce discussion papers in the following specific topic areas:

- **Qualitative versus Quantitative Aspects of performance based regulations.** Some countries have extremely quantitative criteria written within their legislation where others are extremely qualitative and simply refer to quantitative criteria. There is much debate as to where and when regulations should become quantitative. This particular paper will likely provide a discussion on the overall topic as it relates to performance based codes and provide an understanding of the range of different approaches that could be taken.
- **Multiple levels of performance of buildings and structures.** Performance based regulations create an environment which necessitates a better understanding of the relationship between societies' expectations and events that may impact buildings. These objectives vary based on occupant characteristics and building function. A study will explore this concept and how it can be used as an overall framework which derives the performance criteria.
- **Acceptable solutions.** This concerns the use of both performance based and prescriptive design solutions. In most cases building designs will be a combination of both. This combination needs to be carefully meshed to ensure that all objectives of the regulations are met. Also, approaches as to how methods are recognised as being acceptable will be explored.
- **Standards used in a performance-based regulatory system.** This particular effort will primarily explore how standards fit into the overall performance-based regulatory structure. Many times the standards are developed fairly independently of the objectives of building regulations mainly due to the fact that the objectives are unclear. Understanding the objectives of the building regulations necessitates a closer link with standards.

TG37 - Its Future Direction

And now, how does she see the future direction?

Worldwide, there is a strong trend towards the development of performance-based building regulations. This may be related to increases in international trade, needs to more clearly understand the intent of regulations, concerns regarding the cost effectiveness of prescriptive regulations or desires to remove the barriers to innovative design and construction practices. I truly believe that exploring and implementing performance-based regulatory systems is important. Benefits of performance-based regulations include regulations that more closely reflect societies' expectations and more appropriately address true hazards. Such regulations will affect a market place that can more appropriately gear its products and services to the objectives of the building regulations. Additionally, it has been observed in countries which have adopted performance based regulations that although designers continue to use a prescriptive approach for most projects that the overall building construction and approval process has been streamlined. This may be due to the fact that other regulatory reforms were occurring simultaneously but it may also be due to the fact that a performance based regulatory approach forces one to look in great detail as to how business is conducted on a daily basis.

Obviously, along with these benefits, come many challenges. These challenges extend into several areas beyond the code itself and include the state of technology to support such a system, education needs, current public policy, and existing support frameworks such as quality assurance programs. The Inter-Jurisdictional Regulatory Collaboration Committee (IRCC), an informal international committee, saw the need to address these issues. These framework issues have been and are continuing to be addressed by the IRCC. So far the largest benefits of this effort have included the exchange of information internationally, the opportunity to explore and discuss performance-based regulatory systems within a group that focuses primarily on building regulations and finally to recognise the need to look beyond the implementation of the code itself.

It was from IRCC's work that a need for TG37 was seen as critical. TG37 provides the opportunity to explore the issues addressed by the IRCC in more detail. More specifically, TG37 is intending to take several key areas, such as the concept of multiple levels of performance, study in detail and present papers on these topics at the CIB World Congress in 2001. The Task Group is also looking to organise either a one-day symposium prior to the CIB World Congress or to offer a single track during the meeting to allow broader discussions related to performance based building regulations.

I am personally very excited about the work that will be accomplished by this Task Group and the benefits it will provide to others going through the process of developing and implementing performance-based building regulations. It should also be noted that there will probably be some level of liaison with W060 that deals with the Performance Concept in Building.

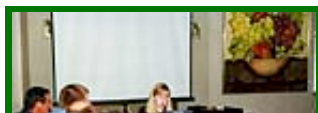


TG37 in San Diego



Bob Bowen (above) handed over the reins of TG37 at the meeting to Beth Tubbs.

Beth lost no time in getting down to work. How she sees TG37



after San Diego is indicated in the accompanying article.



At the meeting were (from left to right) Olav Berge, Tomiyoshi Ogawa, Javier Serra, Mike Balch, Beth Tubbs, Doug Beller, Brian Meecham, Wim Bakens, Bob Bowen, Tony Rackliffe, Brian Cashin, Dick Bukowski, Jon Traw

