



# THE INTER-JURISDICTIONAL REGULATORY COLLABORATION COMMITTEE (IRCC) A BRIEF HISTORY AND A LOOK FORWARD





## ABOUT THE IRCC

Formed in 1997 following discussions between four countries who were working on performance-based building regulatory systems, the Inter-jurisdictional Regulatory Collaboration Committee (IRCC) has grown to a committee that includes nineteen organizations from fifteen countries:

- Australian Building Codes Board (ABCB), Australia
- Austrian Institute of Construction Engineering (Österreichisches Institut für Bautechnik, OIB), Austria
- Building and Construction Authority (BCA), Singapore
- China Academy of Building Research (CABR), China
- Department for Housing, Communities and Local Government (DHCLG), England and Wales
- Bundesvereinigung der Prüfen Ingenieure für Bautechnik e.V. (BVPI), Germany
- German Institute for Building Construction (Deutsches Institut für Bautechnik (DIBt), Germany
- Institute for Research in Construction, National Research Council (NRC), Canada
- International Code Council (ICC), USA
- Instituto de Ciencias de la Construcción Eduardo Torroja (CSIC), Spain
- Ministry of Business, Innovation and Employment (MBIE), New Zealand
- Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Japan
- Ministry of Transport, Mobility and Urban Agenda (MITMA), Spain
- National Board of Housing, Building and Planning, (Boverket), Sweden
- National Institute for Land and Infrastructure Management (NILIM), Japan
- Netherlands Organisation for Applied Scientific Research (TNO), Netherlands
- Norwegian Building Authority (DIBK), Norway
- Singapore Civil Defence Force (SCDF), Singapore
- Scottish Government Building Standards Division (BSD), Scotland

The purpose of the IRCC is to promote effective international collaboration concerning 'best current practice' building regulatory system, in particular those that are objective performance-based. This purpose necessitates interaction with other international bodies having compatible interests.

Appointment of new members to the IRCC will be by consensus agreement of Committee members. Applications would be expected to be from the primary national lead regulatory entity or national organization with delegated regulatory tasks having experience in the development of that country's building regulatory system, having the ability to make an effective contribution towards the achievement of the IRCC's stated goals and can provide reliable information and knowledge about that country's practices.

## ABOUT THIS DOCUMENT

This document has been developed to commemorate the 25th Anniversary of the formation of the IRCC and to recognize the achievements of the IRCC to date as it contemplates its future.



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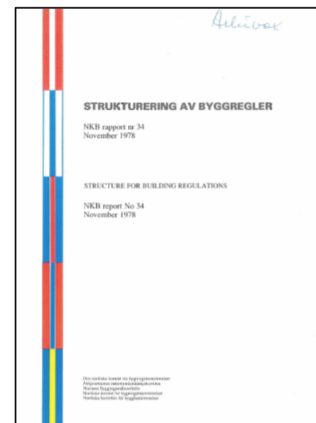
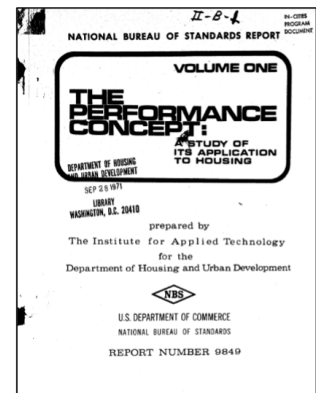
## BACKGROUND – EMERGENCE OF THE PERFORMANCE CONCEPT IN BUILDINGS AND BUILDING REGULATION

In the 1970s and 1980s, many countries experienced a period of regulatory reform, which included a motivation to reduce the size of government, streamline bureaucratic systems and increase the roles and responsibilities of the market. This included efforts to restructure the building regulatory systems to focus on reducing the cost of regulation and the transfer of non-mandatory material outside of the regulations (e.g., see BRRTF, 1991; Ley, 2004).

At about the same time, 'the performance concept' for buildings (Eberhard, 1968; Wright, 1968) had emerged as "an organized procedure or framework within which it is possible to state the desired attributes of a material, component or system in order to fulfill the requirements of the intended user without regard to the specific means to be employed in achieving results" (Eberhard, 1968, p47). The performance concept was characterized by a hierarchy of elements which included: *performance requirements*, derived from the characteristics of users which the physical environment can affect; *performance criteria*, which are used in evaluating whether the requirements are being met; performance evaluation techniques, which could be tests, numerical evaluation or expert judgment; *performance specifications*, which should be rigorous enough to indicate those criteria to be considered and how they are measured; *performance standards*, which are formal representations of specifications, typically issued by an authoritative body; and a *performance code*, in which all come together.

The performance concept was soon taken up as a pre-normative research activity by the International Council on Building Research and Innovation (CIB), which established Working Commission 60 (W60) on The Performance Concept in Buildings in 1970 (CIB Publication 64, 1982). The first meeting was held in 1971, and over the next several years, efforts were undertaken to develop concepts and terminology, culminating with the publication of CIB Report 32, *The Performance Concept and its Terminology*, in 1975 as their first work product. Subsequent reports focused on various elements, such as criteria.

About this same time, the Nordic Committee on Building Regulation (NKB) was looking at the issue of performance-based building regulation as part of its work program (NKB, 1976), including proposing a 5-level structure for regulation. Also in 1976, the Economic Commission for Europe (ECE) held an ad hoc meeting on Functional Requirements and Reference Standards in Building Regulation, at which the NKB 5-level system was discussed and compared with the 3-level ECE system (NKB, 1978). Since the 3-level ECE system Level 1 had 3 sub-levels, the NKB and ECE approaches were deemed essentially the same. This structure was to serve as a model for building regulatory review and restructuring efforts in several countries in the 1980s, including New Zealand (CIB TG11, 1997).







Around 1990, given the interest by countries in functional-and performance-based building regulation, CIB formed a Task Group (CIB TG11), *Performance-Based Building Codes*, with the dual objectives of providing a discussion forum for exchange of ideas and information regarding performance-based building regulations, and of producing a practical approach to performance-based building regulatory systems (CIB TG11, 1997). There was representation from several countries exploring functional- or performance-based regulations on CIB TG11, including Australia, Canada, England, Japan, the Netherlands, New Zealand, Norway, Scotland, Spain and the USA.

Based in part on CIB TG11 activities in the 1990s, a few organizations in the USA became more involved in exploring the concept of performance-based codes. One was the National Fire Protection Association (NFPA), which was represented on CIB TG11. Another was the Society of Fire Protection Engineers (SFPE), also represented on CIB TG11 by Brian Meacham. Another CIB TG11 member from the USA, Professor David Lucht of Worcester Polytechnic Institute (WPI), engaged on a fact-finding mission about performance-based regulations and design, with Jon Traw, President of the International Conference of Building Officials (ICBO), and Charles (Chuck) Kime, a fire chief from Arizona. By the mid-1990s, the ICBO, the NFPA, and the SFPE began exploring the concepts of performance-based buildings codes and performance-based design and their interactions and relationships.

In this same period, several other countries had moved their national building codes to performance-based approaches. Their content was heavily reliant on comparison to the pre-existing prescriptive requirements; the performance measures themselves were generally articulated as a description of the policy outcome being sought; and in many cases this move was accompanied by other de-regulation in the sector, such as the introduction of private certification, where those who were given responsibility for approving building designs and work were not intended to also be involved in developing the solutions to the performance requirements.

In early 1996, in discussions with Jon Traw at ICBO, and Robert Bowen of the National Research Council, Canada, and Chair of CIB TG11, and Professor Matti Kokkala from VTT Finland, Chair of CIB W14, Working Commission on Fire, Brian Meacham, Technical Director of SFPE, suggested that the time seemed right for an international conference on performance-based codes and fire safety design methods. The concept was to bring together regulatory developers (policy-focused) and engineers (technology-focused), each spending a day speaking about developments in their respective fields, with a third day featuring case studies in performance-based design. The leadership of SFPE, ICBO, and CIB TG 11 and W14 agreed, and together launched the first International Conference on Performance-Based Codes and Fire Safety Design Methods in Ottawa, Ontario, Canada in September 1996 (SFPE, 1996), concurrent with the final meeting of CIB TG11.

Among those speaking at the conference on the regulatory side were Kim Lovegrove and Lyall Dix from the Australian Building Codes Board (ABCB), John Hunt from the Building Industry Authority (BIA), New Zealand, Robert Bowen from the National Research Council, Institute for Research in Construction (NRC-IRC), Canada, and Jon Traw, President of the ICBO.

After the day of presentations from the regulators, Jon Traw and Brian Meacham discussed the fact that the research and engineering communities had numerous forums for exchange of information (e.g., CIB, SFPE, NFPA), but the building regulatory developers and policy makers did not. They were excited by the interchange at the conference and thought a forum should be created for the regulatory developers. Jon

**1996 International Conference on  
Performance-Based Codes  
and Fire Safety Design Methods**

**24-26 September 1996  
Ottawa, Ontario, Canada**

**Editor**  
D. Peter Lusk, CAE  
Society of Fire Protection Engineers, Boston, MA, USA  
**Assistant Editor**  
Elizabeth A. Angell  
Society of Fire Protection Engineers, Boston, MA, USA



and Brian reached out to Robert Bowen and set up a meeting with him during the conference, inviting colleagues from the ABCB. The group discussed the idea and agreed to try to establish something more formal.

To move forward, it was agreed that more discussion would be needed to scope out what the focus would be, why it could be interesting for regulatory developers and policy makers to exchange experiences, and what the potential benefits of collaboration might be. As it happened, there was to be another international fire safety conference in March 1997 in Melbourne, Australia, at which many of the group would be attending, so the group agreed to meet at that time to establish the foundations for a more formal collaboration. With this meeting, the IRCC journey began.

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## ESTABLISHMENT OF THE INTER-JURISDICTIONAL REGULATORY COLLABORATION COMMITTEE (IRCC)

In March 1997, at the vineyard of Kim Lovegrove's father on the outskirts of Melbourne, Kim and Mike Balch from the ABCB, Jon Traw from ICBO, Russell Thomas and Robert Bowen from the NRC-IRC (Robert by phone), and Brian Meacham from SFPE met to discuss the formation of a group comprised of building regulatory developers, working with functional- and performance-based concepts (and soon to include objective-based concepts, when Canada chose to move in that direction). There was energy within the group and a unanimous decision to move forward. There was much discussion about wanting the group to focus on information exchange and fostering of ideas, as well as being 'outside' of formal government and international constructs (such as the International Organization for Standardization (ISO)).

A draft Charter was readily drafted, wherein the biggest challenge was the name. The group did not want to use the term 'international' to avoid confusion with ISO and others. It also wanted to focus on collaboration between jurisdictions. The net result was the name, the *Inter-jurisdictional Regulatory Collaboration Committee* (IRCC). A draft work plan was also produced, a major component being the development of a document that provided information and experiences regarding development and implementation of performance-based building regulations. It was agreed to set an aggressive target for drafting of the document – for the 2nd International Conference on Performance-Based Codes and Fire Safety Design Methods – slated for May 1998 in Hawaii. To achieve this objective, it was decided that the group needed to expand. The first invitee was Japan. The first 'official' meeting of the IRCC was targeted for May 1997 in Los Angeles, CA, USA. An outline for the guidance document was drafted and sent along with invitations to the target country organizations.

On 22-23 May 1997, the IRCC was 'born', with the first official meeting. In attendance were:

- Mr. Tomiyoshi Ogawa, Senior Officer, Building Guidance Division, Ministry of Construction, Japan
- Dr. Russell Thomas, Senior Advisor, Canadian Codes Centre, National Research Council of Canada
- Mr. Robert Wible, Executive Director, National Conference of States on Building Codes and Standards, USA
- Mr. Jon Traw, President, International Conference of Building Officials, USA
- Mr. Paul Armstrong, Senior Staff Engineer, International Conference of Building Officials, USA
- Mr. Brian Meacham, Technical Director, Society of Fire Protection Engineers, USA
- Ms. Beth Tubbs, International Conference of Building Officials, USA
- Mr. Mike Balch, Deputy Executive Director, Australian Building Codes Board
- Mr. Norm Bowen, Director - Technical, Australian Building Codes Board
- Mr. Demetrio Veteri, Director, Housing and Construction Trade, Dept of Industry Science & Tourism, Australia

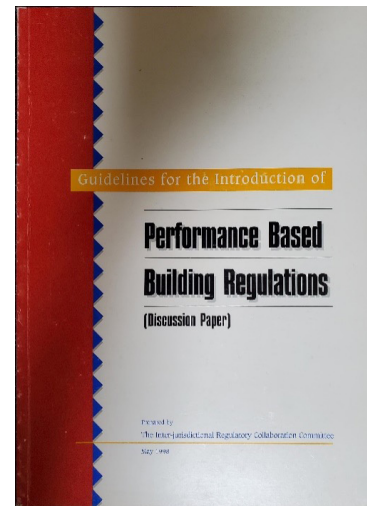
It was decided that three meetings would be needed leading up to the May 1998 target, and that to complete the effort, additional members and insights would be needed. Over the next few meetings, the organizational membership expanded to include Mr. Brian Cashin, Legal Advisor, Building Industry Authority, New Zealand and Mr. Tony Rackliffe, British Board of Agrément, England, as well as additional individuals and organizational representatives from Australia, Canada, Japan, and the USA.



## ACTIVITIES OF THE IRCC: 1998 – 2021

The outcome of the efforts of this 'first generation' of the IRCC was the *Guidelines for Introduction of Performance-Based Building Regulations* (IRCC, 1998), published by the ABCB, and introduced in May 1998 at the 2nd International Conference on Performance-Based Codes and Fire Safety Design Methods, which was jointly sponsored this time by the IRCC and the World Organization of Building Officials (WOBO), in addition to the ICBO, CIB and the SFPE.

Later in 1998, members of the IRCC, including former members of CIB TG11, discussed the possibility of initiating a new Task Group within CIB to work concurrently with the IRCC, holding one joint meeting per year, with the idea that the IRCC would focus largely on regulatory development and policy-type issues associated with performance-based building regulations and regulatory systems, and the CIB TG would continue to work on technical issues necessary for successful performance-based building regulations. The CIB agreed, and in October 1999, established TG37, Performance Based Building Regulatory Systems.



Over the course of the next few years, the IRCC and CIB TG37 held several concurrent meetings. As a result of joint activities, and knowing that CIB TG37 would end in 2004, several CIB TG37 members joined the IRCC at the start of 1998, boosting the IRCC membership by the early 2000s to representation from some 13 organizations from 11 countries. The IRCC meetings moved between member countries, and often played an important role for the host country in terms of illustrating to Ministers or key stakeholders the benefits gained from the informal information sharing. Also, as a result of its informal nature, many of the members developed close relationships and collaborations.

In an effort to both learn and share more, the IRCC decided in 2002 to plan and host a *Global Policy Summit on the Role of Performance-Based Building Regulations in Addressing Societal Expectations, International Policy, and Local Needs* (Global Summit). The Global Summit aimed to be a forum for identifying emerging issues and pressures for building regulatory systems at a policy level. The intent was to include regulatory developers, policymakers, and academics



IRCC Members, Madrid, 2002





2005

2006

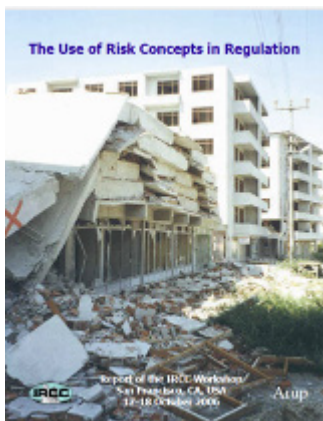
inside and outside of the building regulatory arena, to raise awareness of issues, suggest tools, methods and approaches to addressing concerns, and to generally gain a better understanding of future issues and areas of focus (IRCC, 2003).

Held at the National Academy of Sciences building in Washington DC in November 2003, with support from the US National Science Foundation, the ABCB, NRC Canada, and the International Code Council (ICC), the Global Summit brought together nearly 100 leading thinkers, policymakers and practitioners from eleven countries around the world to address issues and offer thoughts on the challenges to performance-based regulatory systems of the future. Through two and a half days of intensive work, the Summit participants tackled several important concerns, and commented on what they saw as critical challenges and needs, some of which remain in 2022. The outcomes from the Global Summit were captured in a report (IRCC, 2003) and summarized in a paper published in the international journal, Building Research & Information (Meacham et al., 2005), which are still cited to this time.



The success of the Global Summit kicked off a series of workshops on a wide range of topics, including:

- IRCC Summit on Sustainability, Gold Coast, Australia, 2005
- IRCC Workshop, *The Use of Risk Concepts in Regulation*, San Francisco, CA, USA, 2006



Workshop Report, 2006



Post-Workshop Visit UC Berkeley, 2006





2007

2009

- IRCC Workshop, *Performance Requirements and Acceptance Criteria for Safety in Case of Fire*, Vienna, Austria, 2007

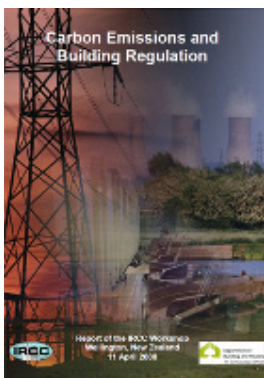


IRCC Workshop Vienna, 2007

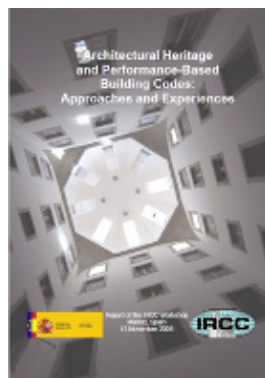


Fire Workshop Report, 2007

- IRCC Workshop, *CO<sub>2</sub> Emissions*, Wellington, New Zealand, 2008
- IRCC Workshop, *Architectural Heritage and Performance-Based Building Codes: Approaches and Experiences*, Madrid, Spain, 2008
- IRCC/CEBC Workshop, *Compliance Matters*, Edinburgh, Scotland, 2009



Carbon Emissions Workshop, 2008



Heritage Workshop Report, 2008



Objective and Performance-Based Codes Workshop, 2009



2009

2012

- IRCC/NRC Workshop, *Objective and Performance-Based Codes: Impacts and Lessons Learned*, Banff, Alberta, Canada, 2009
- IRCC Workshop, *Building Code Requirements on Aged Care Facilities and Housing*, and IRCC Workshop, *Building Products in Building Code and Inspection*, Tokyo, Japan, 2010



Banff, 2009



Tokyo, 2010

- IRCC Workshop, *International Perspectives on the Role of Building Regulation in Responding to the Challenges of Climate Change*, Boston, MA, USA, 2010
- IRCC Workshop, *Quality Assurance of the Building Regulatory Process*, Haarlem, the Netherlands, 2012
- IRCC-BCA Workshop, *Issues Relating to Product Conformity of Structural Steel Products – an International Perspective*, Singapore, 2012



Haarlem, 2012



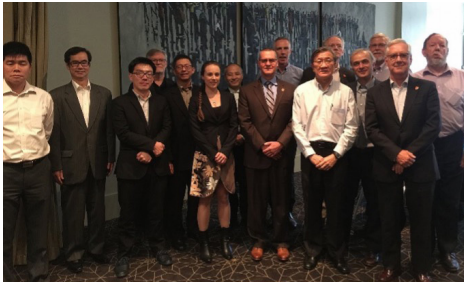
Singapore, 2012



2013

2018

- IRCC Workshop, *Use of Timber in Larger Buildings*, Vienna, Austria, 2013
- IRCC Workshop, *Verification, Documentation and Control of Building Regulations in the Design Phase*, Malmo, Sweden, 2014
- IRCC Workshop, *Verifying Fire Engineered Solutions as part of a Building Regulatory System*, Edinburgh, Scotland, 2015
- IRCC Workshop, *Regulations for Existing Buildings*, Oslo, Norway, 2016



Edinburgh, 2015



Oslo, 2016

- IRCC Workshop, *Trend of Building Energy Regulations*, Tokyo, Japan, 2016
- IRCC Workshop, *Economic Impact of Building Regulations*, Washington, DC, 2017
- IRCC Workshop, *Building Quality – Improving the Compliance to Building Regulations*, The Hague, The Netherlands, 2018



Washington, DC, 2017



The Hague, 2018





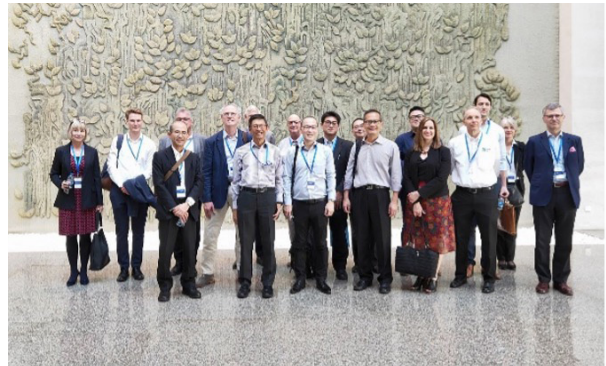
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- IRCC Workshop, *Building Regulations and Mandatory Standards in the Field of Sustainable Development*, Beijing, China, 2019
- IRCC Workshop, *How Building Codes are Implemented and Administered in Members' Countries*, Canberra, ACT, Australia, 2020



Beijing, 2019



Beijing, 2019

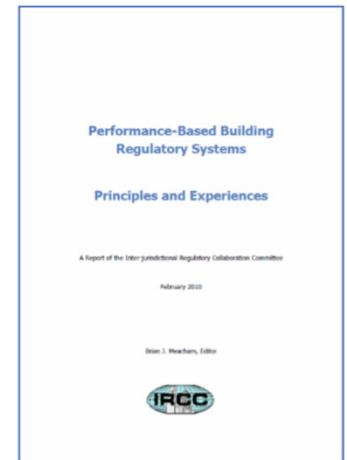
In addition to the IRCC Workshops organized largely by IRCC and its member organizations, the IRCC has co-organized sessions at major international conferences, often in conjunction with other organizations and entities, where mutual benefits exist. A representative sample of such joint sessions with other entities includes:

- *The 2<sup>nd</sup> International Conference on Performance-Based Codes and Fire Safety Design Methods*, CIB, IAFSS, ICBO, and SFPE, Maui, HI, USA, May 1998.
  - » This conference featured the launch of the *IRCC Guidelines for Introduction of Performance-Based Building Regulations*.
- *CIB World Congress*, Wellington, New Zealand, 2001.
  - » A result of collaboration between IAFSS and CIB TG37, joint papers and presentations were made by Doug Beller, Denis Bergeron, Richard Bukowski, Brian Meacham, Tony Rackliffe and Beth Tubbs.
- *CIB – CTBUH (Council on Tall Buildings and Urban Habitat) International Conference on Tall Buildings*, Kuala Lumpur, 2003.
  - » At this conference, a session on building codes included papers in which Doug Beller, Denis Bergeron, Richard Bukowski, Brian Meacham and Beth Tubbs participated.
- *World Sustainable Buildings Congress 2008 (SB08)*.
  - » This included a session sponsored by the ABCB and convened by Mike Balch on *Global Building Regulation and Sustainability*. The session featured IRCC speakers Lin Haiyan, Dr. John Keung, Javier Serra, Mike Stannard and Hirano Tomoko, with Brian Meacham chairing.
- *World Sustainable Buildings Congress 2014 (SB14)*.
  - » This Congress featured a joint IRCC and CIB TG79 session: *Are current building regulations adequately advancing sustainable buildings? If not, what is missing, and how should they be changed?* IRCC speakers included Bill Dodds, Matthew McDonald, Brian Meacham, Mike Stannard and Jeffery Neng Kwei Sung. The papers and presentations at this session were very well received, with several being published in the journal *Building Research & Information*, as well as in the book, *Building Governance and Climate Change Regulation and Related Policies* (2018).



Summary reports from several of the workshops were published, as were conference papers, and in some cases, the material facilitated publication of journal papers as well. A collection of IRCC-related publications is available on the [IRCC website](#) under the Documents and Events tabs (Workshop reports are provided under Events).

In 2010, the IRCC published an update to the 1998 Guidelines, entitled *Performance-Based Building Regulatory Systems – Principles and Experiences*. This has been widely cited by countries and institutions seeking to learn how the transition to performance-based regulations worked for the IRCC member countries. This effort was also unique for IRCC in that a few of the members – Canada, New Zealand and Japan – provided resources to financially support development of the document.







## REPRESENTATIVE IRCC IMPACTS ON MEMBER COUNTRIES

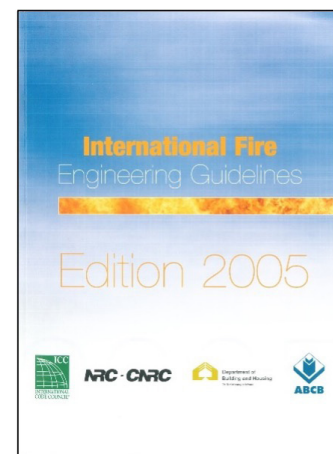
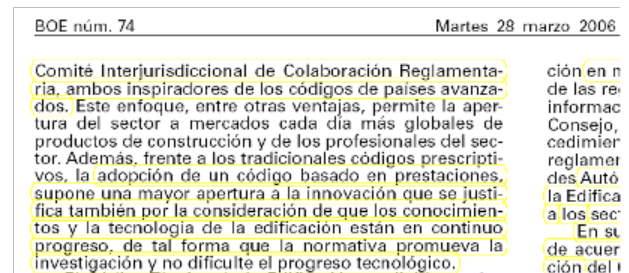
By the middle of the first decade of the 21st Century, the IRCC had gained a standing that none of its members had expected, being perceived as a resource for countries around the world. In addition to the successful global summits and workshops, the many conference publications, and guidance on performance-based building regulatory systems, the IRCC has had real impacts on advancing and informing performance-based building regulatory systems in many countries.

One such example is Spain, where participation in the IRCC helped not only to inform development of the Spanish regulation but was used to illustrate an international move to performance-based regulation in general. In 2006, the Royal Decree in Spain that announced the establishment of a performance-based building regulatory system cited the IRCC as being fundamental to providing knowledge and experience that was helpful in making performance-based regulations a reality in Spain.

In addition to having such a public impact on regulatory development, IRCC members have benefited from the experiences and expertise of each other since. There have been numerous instances over the past 25 years where an IRCC member has invited one or more IRCC members from other countries to be involved in reviews of certain aspects of their building regulations or of the broader regulatory systems, to sit on Expert Panels, to meet with or present to stakeholders or policy makers, and/or to develop joint products of benefit to smaller subgroups of IRCC members.

An early example of collaboration between a subset of IRCC members was the joint development and publication of the 2005 International Fire Engineering Guidelines (IFEG). The IFEG was derived from the Australian Fire Engineering Guidelines (FEG) first published in 1996. In the early 2000s, the Australian Building Codes Board (ABCB) thought that it might be of value for other countries to participate in an update of the FEG, including adding a new section that overviewed the building regulatory system in the partnering countries. Members from Canada (NRC), New Zealand (DBH, now MBIE) and the USA (ICC) expressed interest, formed a working group, and published the IFEG in 2005 as a joint product. The IFEG was subsequently cited as outlining an acceptable process that could be followed to demonstrate building fire performance design suitability by many in the participating countries, including being incorporated into compliance documents in Australia and New Zealand. The collaboration on the IFEG continued for several years, with meetings every three years convened for the specific purpose of assessing the ongoing value of the IFEG and the need for any updates.

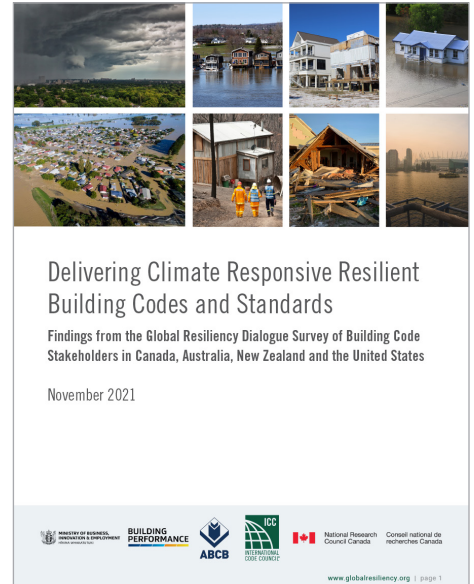
A more recent collaborative effort also between the Australian Building Codes Board, the National Research Council of Canada, the New Zealand Ministry of Business Innovation and Employment, and the International Code Council is the Global Resiliency Dialogue ([www.globalresiliency.org](http://www.globalresiliency.org)), a joint initiative to inform the development of building codes that draw on both building science and climate science to improve the resilience of buildings and communities to intensifying





risks from weather-related natural hazards. To date two surveys have been conducted, and several efforts to be undertaken by the members of the Global Resiliency Dialogue have been identified, including:

- Forming strategies for the identification of future risks and the development of building code solutions that support adaptation to those risks
- Cooperating on the development of international building resilience guidelines and further exploration of the relationship with land use planning instruments that help determine the location of buildings
- Supporting research initiatives to better understand climate science, to assist in aligning expectations for building durability and resilience with the projection of future hazards
- Developing and deploying messages and resources that enhance understanding of building codes, support a common understanding of risk and communicate the importance of up-to-date building codes
- Advancing risk and impact analysis to recognize the multiple economic and social benefits provided by resilience investments and the desirability of alternative approaches that fully capture the benefits and costs provided by the building codes



While these activities are not specifically IRCC activities, arguably they would not have developed and experienced the same level of collaboration, since the IRCC was the medium through which many of the connections were made. Furthermore, development of this work has involved consultation with the other IRCC members, all of whom have been invited to have regard to the guidelines once developed.



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02

## BEYOND THE BUSINESS OF THE COMMITTEE

An important part of the longevity of the IRCC as a group is the comradery that develops through the informal activities associated with formal meetings and collaborations. From the start, it was acknowledged by members that as an 'unofficial' organization, the IRCC would only endure if the participants found benefit in meeting with each other and collaborating for common benefit. The founding members recognized this, and with their own funding, met 2-3 times per year to produce the *Guidelines for Introduction of Performance-Based Building Regulations*.

As continues to be the practice from the start, the location of each meeting moved around the world, with each member hosting meetings as a means to help share the costs. Even so, travel costs and time commitments between continents is a significant investment, and the host country has always arranged for a dinner and some type of site visit and/or social activity to introduce colleagues to a unique experience of a local nature. Over the course of 25 years, this has included a wide range of opportunities to explore or take part in some aspect of the local host country.



IRCC members visit the Royal Palace at Aranjuez near Madrid (2002)



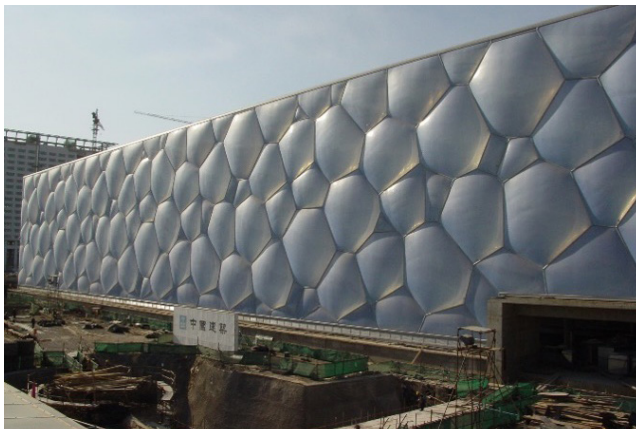


2005

2007



IRCC members enjoy a reception on a rooftop in London (2005)



IRCC members visit the ancient and contemporary construction in Beijing (2007)



2007

2008



IRCC members enjoying dinner in historic Vienna restaurant (2007)



IRCC members traversing the stunning Tongariro Alpine Crossing in New Zealand (2008)





2009

2010



IRCC members trying line dancing and enjoying the mountains in Banff (2009)



IRCC members giving Karaoke a go while dining on a river cruise in Tokyo (2010)



2011

2012



IRCC members in the historical district and at dinner in Bergen (2011)



IRCC members toured the Cloud Forest, Tree Top Walk and evening environs in Singapore (2012)



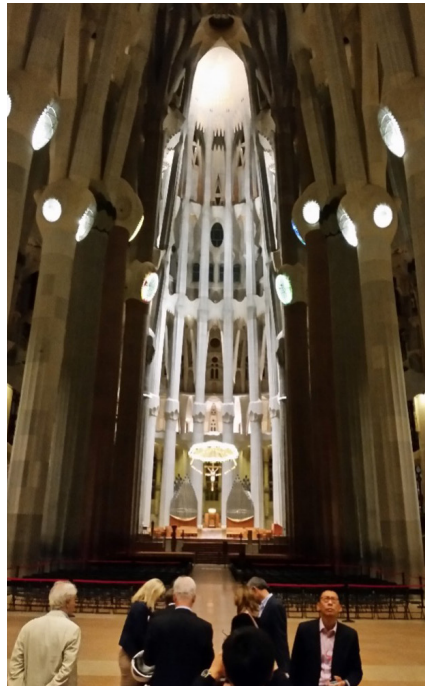
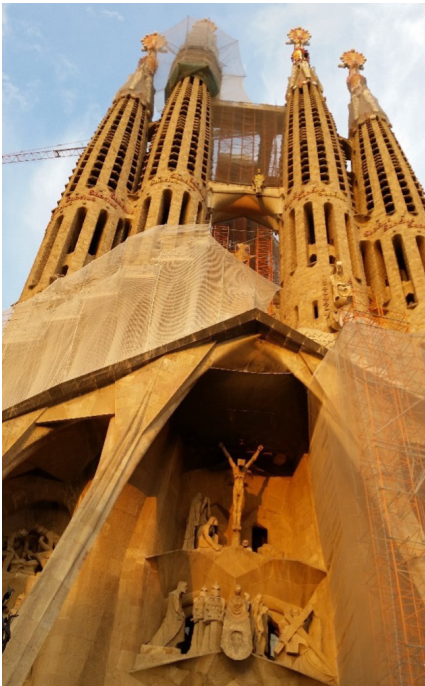


20

14



IRCC members toured Malmo and viewed the Turning Torso (2014)



IRCC members were treated to 'behind the scenes' tour of Sagrada Familia construction (2014)





20

15



IRCC members were tour National Museum of Scotland (2015)



IRCC members enjoy casual dinner in Gold Coast (2015)





2015

2016



IRCC members in Gold Coast (2015)



IRCC members tour Viking Museum, Oslo (2016)



IRCC members enjoy dinner in traditional Tokyo restaurant (2016)





20

17



IRCC members tour the US Capitol Building (2017)



IRCC members visit new modular mass timber construction, Singapore (2017)

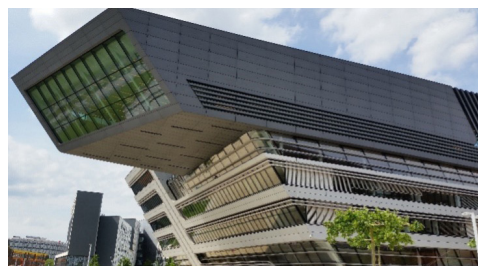
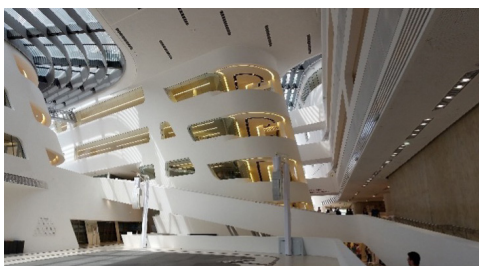


2017

2018



IRCC members enjoy boat tour of Singapore (2017)



IRCC members visit contemporary university campus architecture in Vienna (2018)





2018

2019



IRCC members explore old timber construction in Het Binnenhof in the Hague (2018)



IRCC members view energy efficient building center and the Forbidden City, Beijing (2019)



2019

2020



IRCC members visit Hoover Dam at the intersection of Arizona and Nevada (2019)



Some of the IRCC members during virtual meeting (2020)





## IRCC – 2022 AND BEYOND

In 2022, the IRCC remains active 25 years on. The membership and affiliations include twenty organizations (nineteen members) from fifteen countries. As the IRCC starts on the next phase of its journey, the membership was surveyed to determine whether they continued to find value in the IRCC, whether they wanted to continue to engage with each other in this forum, and what might they look to engage in as a group in the near future.

- The clear response was that the members continue to find value in the IRCC and desire to continue the interchange that has developed over the years.
- In terms of meeting frequency and format, the preference at this time is for one in-person and one virtual meeting per year, the model generally being virtual meeting in the Spring (northern hemisphere season) and face-to-face in the Autumn, rotating amongst member countries as in the past. A workshop in association with the Autumn meeting remains desirable, at the discretion of the host country.
- General country updates on changes within members' current regulatory systems should continue, with updates summarized in writing using the template provided and distributed beforehand. Virtual meetings will focus on only one urgent topic per country, with more in-depth discussion possible during the in-person meetings.
- Discussions during the IRCC meeting should typically focus on best practice regulatory system issues and specific innovative or state-of-the-art topics relevant in one or more countries.
- The workshop during the in-person IRCC meeting organized by the host is desired to include presentations about innovations and state-of-the-art topics from various perspectives, either as nominated by the host or taken from themes already identified by IRCC members, and may include presentations from experts from outside the IRCC as appropriate.
- Topics for discussion and exploration identified as high-priority in 2022 include: current requirements and verification methods, the backgrounds and developments related to requirements and verification methods, and innovations and/or challenges.
- The members continue to see value in sharing their collective knowledge and experience externally by presenting papers at conferences, organizing sessions as part of a conference, publishing papers and articles, identifying coincidental opportunities for in-person meetings, and through non-peer reviewed information such as blogs.
- As a platform to broaden its exposure and reach, IRCC members are able and encouraged to continue to invite experts from other countries to support them with internal discussions and in multi-lateral IRCC member engagement.
- The future role of the IRCC should be defined by the following principles:
  - » The IRCC provides a platform for sharing information and promoting ideas about developing new building regulatory methods in response to emerging issues.
  - » The IRCC is an advocate for effective building regulations and properly functioning regulatory systems. It is a forum for exploring international examples of inappropriate and unsafe deregulation without interfering in how each country, or devolved governance model wish to run their building control system.
  - » Members have the option to collaborate within a group of countries with a common interest on a specific emerging issue.
  - » In terms of influencing policy, the approach will be indirect, with members at liberty to use information developed/collected by the IRCC to inform their own domestic policies, with no obligation for IRCC members to adopt or promote certain policies.



- Over the coming years, IRCC members have identified the following as expected priority topics in their countries:
  - » Energy Efficiency/ Conservation/ Net Zero
    - Embodied carbon
    - Reduction in materials use (CO<sub>2</sub>/NO<sub>x</sub>)
    - Existing buildings
    - Climate resilience
    - Life cycle assessment databases and indicators, such as the Global Warming Potential. Implementation in public procurement
  - » Accessibility
  - » Technology
    - Digitalization in code checking/ verification
    - Digitalization of processes
    - Remote inspection
  - » Indoor Air Quality
    - Environmental pollutants
    - Health and wellbeing
  - » Risk-based building classifications & performance
    - Building classification by use of the building and its compatibility with different technical requirements (e.g., energy, accessibility, fire safety, etc.)
    - Relationship between building and urban planning regulations
  - » Application of technical requirements to existing buildings
  - » Relationship between building and planning regulations

These topics will begin to be explored at the IRCC 25th Anniversary meeting. While some of the topics are similar to those that have been discussed in the past, they are accompanied by a variety of new and emerging challenges such as technology advances, expansion of societal interests and concerns, and the increasing complexity of the built environment. Parallel to this are broader discussions about how robust building regulatory systems operate and interface with the component parts: performance-based codes; the importance of practitioner competencies; education and training in the use of sophisticated building codes and standards; and issues of building maintenance; to name a few.



## CONCLUDING THOUGHTS

On the occasion of the 25th Anniversary of the IRCC, it is amazing to the founding members that their 1996 idea to create a forum to foster policy-oriented discussions and interactions around the concepts and requirements for performance-based building regulatory systems has not only survived but has flourished – all because of the people involved and the value they derive from the interactions. It is heartening to see not only the globally significant impacts that the IRCC has had as an entity, but to experience the fellowships and comradery that has and continues to develop, and which continues to enable sharing of experiences, expertise and opportunities.







## SELECTED KEY CONTRIBUTORS TO IRCC OVER THE YEARS

While every member of the IRCC has made important contributions over the years, there are some that warrant recognition for their efforts on behalf of the IRCC. The following list includes a few of the key individuals and brief summaries of their contributions.

Country	Contributions of Selected Past Members
Australia	<p><b>Mr. Mike Balch</b> (Ex-Deputy General Manager, Australian Building Codes Board). Mike was a founding member of the IRCC, performed the role of secretariat and was responsible for the establishment of its initial website. He played a key role in supporting early IRCC activities and helped disseminate critical international building regulatory information, particularly during the time that a performance-based code was being introduced in Australia.</p> <p><b>Dr. Lam Pham</b> (Ex-Director, Australian Building Codes Board). Lam was heavily involved in IRCC meetings during its first two decades of operation. As a senior technical adviser, his experience as one of Australia's most respected structural engineers led him to participate in numerous IRCC meetings, often involving presentations and leading workshop topics.</p> <p><b>Mr. Matthew McDonald</b> (Ex-Group Manager, Australian Building Codes Board). Matthew participated in numerous IRCC meetings and workshops from 2013 to 2018 and was particularly active in the areas of building fire safety, sustainability and disability access. Matthew would consistently share his learnings from IRCC processes to help ensure that Australian building regulation kept pace with contemporary international developments, and that established networks remained strong.</p>
Austria	<p><b>Dr. Rainer Mikulits</b> (Managing Director, OIB (Austrian Institute for Construction Engineering)). OIB is the responsible body for drafting and managing "OIB Guidelines" which are recognized by the responsible legislators as technical building regulations. Rainer is also involved in a number of relevant European bodies, like the Standing Committee for Construction (SCC), the Advisory Group for Construction (AdGC), the Administrative Co-operation Group for Market Surveillance of Construction Products (AdCo), and the Consortium of European Building Control (CEBC). He has participated in IRCC meetings since 2006 and has always been committed to contribute at IRCC meetings information about relevant European activities and developments.</p>



Country	Contributions of Selected Past Members
Canada	<p><b>Mr. Robert Bowen</b> (Ex-Director, Codes and Evaluation Branch, National Research Council Institute for Research Construction (NRC-IRC)). Bob was a founding member of the IRCC. From 1990 to 2004, as NRC-IRC's Director, Codes and Evaluation Branch, he provided leadership and strategic direction to the development of model construction codes for Canada, the evaluation of new or innovative construction products and systems, and the identification of research priorities in support of safety and security. Bob was an active participant of the IRCC, including the development of papers on performance-based building regulations with other IRCC members, until his appointment to the position of Director General of the NRC-IRC in 2005.</p> <p><b>Dr. J. Russell Thomas.</b> Russ was a founding member of the IRCC and particularly active with the development of the IRCC community and the early years of meetings. At the time, Russ was leading the development of the Canadian Objective Based Code. As part of that development, he visited with many different jurisdictions around the world to learn from their experience of moving towards a performance-based approach. From these and other meetings, it became clear that there was an opportunity for a much broader interchange between those responsible for developing and implementing the building codes around the world and from this the IRCC was formed. Russ subsequently moved onto other units within the National Research Council but has maintained an interest and participated from time to time in IRCC meetings, and for quite a while ran the IRCC website.</p> <p><b>Mr. Denis Bergeron.</b> Denis was a regular participant in IRCC meetings from 2000 to 2010, while supporting technical committees for the development of the National Model Codes of Canada and, from 2005, as the Director, Codes and Evaluations for the NRC-IRC. Denis' contributions as part of the IRCC included developing discussion papers on the issues of the role of acceptable solutions in evaluating innovative designs and introduction of performance-based regulations.</p>
China	<p><b>Dr. Zhijun Cheng</b> (Ex-director of Department of Standards &amp; Codes, CABR) was a regular participant and contributor on behalf of China until 2017.</p> <p><b>Ms. Bo Jiang</b> (Deputy director of Department of Science, Technology and Standards, CABR) represents China on the IRCC from 2017 and keeps participating in the meetings to report and share the process of Standardization Reform of Engineering Construction in China. In 2019, China hosts the IRCC spring meeting in Beijing with the topic "Technical Regulations and Standards for Sustainable Development of Buildings."</p> <p><b>Dr. Boyu Zhang and Ms. Jingyue Ma</b> (Department of Science, Technology and Standards, CABR) are now cooperating with Bo Jiang to handle IRCC China related work.</p>
England	<p><b>Mr. Paul Everall</b> (Ex-Head of Building Regulations, Office of the Deputy Prime Minister). Paul represented England on the IRCC until he retired from the civil service in early 2005. Goal-based regulations having been introduced in England in 1985, it was considered important to learn from other countries with similar systems, and to help promote the greater use of performance-based codes. Since 2005, Paul has been Chief Executive of Local Authority Building Control (LABC), the body which represents all of the local authorities in England and Wales with building control responsibilities. In recent years he has attended some IRCC meetings as an observer.</p>



Country	Contributions of Selected Past Members
Japan	<p><b>Mr. Tomiyoshi OGAWA</b> (ex-Director for Building Guidance Division, MLIT). At the launch of the IRCC, he was responsible for the international relations of building regulatory system at the Ministry of Construction Japan and worked with the people of other countries to establish the IRCC. He also played a role in supporting early IRCC activities. At the same time, by utilizing the information obtained from the activities of the IRCC, he took the initiative in introduction of the performance-based building regulations in Japan.</p> <p><b>Dr. Wataru GOJO</b> (ex-Director, Building Department, NILIM). Since 1997, he has participated in more than 20 meetings as a member of the Japanese delegate and has been involved in IRCC activities as a leading member of Japanese national committee for IRCC. In particular, since 2001 he has been a representative member of the NILIM (National Institute for Land and Infrastructure Management) for many years and has made presentations on the situation of Japan at five workshops and played a leading role in organizing IRCC meetings in Japan.</p> <p><b>Mr. Hiroki SUNOHARA</b> (ex-Director for International Building Codes Coordination, MLIT). Since 1997, he has participated in a number of meetings as a member of the Japanese delegation and has made presentations about Japan's situations. While he was an official IRCC representative of MLIT from 2007 to 2009, he contributed to the publication of "Performance-Based Building Regulatory Systems – Principles and Experiences" as a member of its editorial committee.</p>
Netherlands	<p><b>Dr. IJsbrand van Straalen</b> (TNO). Since 2008, IJsbrand has participated in most of the meetings representing the Netherlands up till now. Performance-based regulations has been introduced in the Netherlands in 1992 and he has been involved in the preparations of that version of the Building Code and matching Standards. He represents TNO in various national committees related to the responsible Ministry of Internal Affairs and Standardisation committees. Nowadays he is involved in the development of automatic code checking. He has been Chairman of the IRCC for the period 2017-2020.</p>





Country	Contributions of Selected Past Members
New Zealand	<p><b>Brian Cashin</b> (Legal advisor to the Building Industry Authority, BIA). The BIA was the small government agency that was responsible for the implementation of a New Zealand Building Act in 1991, and a performance-based Building Code in 1992 and their subsequent administration and development. New Zealand was an early adopter of a performance-based building regulations and Brian, as a qualified lawyer and engineer (not to mention thespian), made an important contribution. He was the initial New Zealand representative to the IRCC and contributed to the 1998 IRCC document 'Performance Based Building Regulations (Discussion Paper)', remaining as the NZ representative until 2002.</p> <p><b>Mike Stannard</b> (Building Standards Manager responsible for Building Code development, initially with the BIA, then the Department of Building when it was subsumed into a government department in 2003. He was later Chief Engineer in the larger Ministry of Business, Innovation and Employment when government departments were amalgamated.) Mike took over from Brian as the New Zealand IRCC representative in 2004 and served as the IRCC international secretariat from then until 2009. He was host for the 2008 meeting in Wellington, organizing a workshop on carbon emissions and building regulation. He supported and was on the editorial committee for the development of the IRCC document 'Performance-Based Building Regulatory Systems: Principles and Experiences', 2010. Mike continued attending IRCC meetings until 2016, sharing the New Zealand experience in implementing performance-based regulation, weathertightness of timber framed buildings and consequential fungal decay, sustainability, resilience, and response and recovery from the devastating Canterbury earthquake sequence.</p>
Norway	<p><b>Mr. Olav Berge</b> (Ex-Director General of National Office of Building Technology and Administration, 1985 – 2009). Olav was one a regular participant and contributor from 1998 until 2007. He also attended meetings for some years previously in the committees leading up to the establishment of IRCC. Norway introduced a comprehensive system of performance-based codes in 1997 according to the Nordic Model developed in the mid-70s. At the same time a building control regulatory system based on quality management was inaugurated. Over the years IRCC was a unique forum for exchanging experience on the Norwegian system and receiving inputs for improving the regulatory framework.</p> <p><b>Ms. Lisbet Landfald</b> (Deputy Director of National Office of Building Technology and Administration, 1997 – 2011). Lisbet attended IRCC meetings representing Norway in the period 2005 to 2011. She contributed in the field of performance based regulations of fire safety in buildings, structural safety of construction works and risk-based regulation of safety against actions of nature.</p> <p><b>Dr. Vidar Stenstad</b> (Chief Engineer at Norwegian Building Authority, 2005-2021). Vidar has been representing Norway in IRCC since 2011 and has contributed in the field of performance based regulations in general, and particularly in the field of fire safety in buildings. Among the topics that Vidar has addressed in IRCC are fire safety related to universal design and accessibility and fire safety in high-rise buildings with load-bearing wooden structures.</p>



Country	Contributions of Selected Past Members
Scotland	<p><b>Dr. Paul Stollard.</b> Having been responsible for legislation in the Scottish Parliament to reform the Building Standards system (Building (Scotland) Act 2003), Paul became the Chief Executive of the Scottish Building Standards Agency (SBSA) which was created. He enormously valued the chance to benchmark Scotland against other jurisdictions and was a participant between 2005 and 2007, attending six meetings. When the SBSA lost its independence in 2008 he moved to other work, but when asked to investigate the implications for Scottish standards of the Grenfell Tower fire valued the assistance of other IRCC members and attended a further two meetings (Singapore 2017 and Vienna 2018).</p> <p><b>Mr. William (Bill) Dodds.</b> Bill succeeded Dr. Paul Stollard as Head of Building Standards within the Directorate of the Built Environment in 2008. Bill represented Scotland on the IRCC from this time until he retired from the civil service in 2018. Bill served as Chair of IRCC from 2014 (Malmo) - 2017 (Singapore). In 2009 Scotland hosted a joint IRCC/ CEBC (Consortium of European Building Control) meeting in Edinburgh on compliance with building regulations. As a result of the workshop Scotland brought in a range of new measures to improve the as-built performance of buildings such as air-tightness (energy) and sound testing (noise) as well as requiring local authorities to introduce Compliance Plans for projects detailing level of inspections on a risk assessed basis.</p>
Singapore	<p><b>Mr. Ong See Ho.</b> Ong See Ho participated in IRCC meetings since 2008 and served as the IRCC Secretariat from 2014 to 2020. As IRCC Secretariat, he helped to revamp and maintained the IRCC website. See Ho spent more than 40 years in the Public Service, and has held several senior positions, including Registrar of the Professional Engineers Board (PEB) from 1999 to 2005, Commissioner of Building Control (CBC) between Jun 2006 to Apr 2016 and Deputy CEO of Building Control (DCBC) in BCA between 2008 to 2016. Throughout the years, he has actively participated in IRCC meetings and shared with members' BCA's experience on building control regulatory practices and performance-based regulations. Mr Ong officially retired from service on 20 Apr 2020 and passed on peacefully on 10 May 2021.</p>
Spain	<p><b>Mr. Javier Serra Maria-Tomé</b> (Ex-Head of Building Regulation Department at Ministry of Development, Architect). Since 1972 Javier worked at the civil service In Spain. His career was always related with building regulation. He developed the structure of national building quality control laboratories. As a member of the Construction Permanente Committee of the European Commission he worked on the drafting of construction products regulation. He was an active member of IRCC since 1999, and due to this relationship, he led the approval of Technical Building Code in 2006. It was the first performance-based code on buildings and since its approval it has changed the way of projecting and building in Spain. Javier represented Spain on the IRCC until his retirement from the civil service in 2015.</p>



Country	Contributions of Selected Past Members
Sweden	<p><b>Mr. Nikolaj Tolstoy</b> (Ex-Head the unit for building regulations at the Swedish Board of Building, Housing and Planning). Nikolaj Tolstoy participated in most IRCC meetings and workshops during 2006-2013. In the same period he was a member of the CIB Board. Before he joined the Swedish National Board of Building, Housing and Planning he was a researcher and construction consultant specializing in building damages. As head of the unit for building regulations at the Swedish Board of Building, Housing and Planning he was responsible for the building regulations regarding technical properties and gained insight concerning new problems and building damages and how other countries solved these problems through regulations and controls. He highly appreciate the cooperation with IRCC and the unique opportunity to discuss common problems and get feedback on the Swedish building regulations.</p>
USA	<p><b>Mr. Jon Traw</b> (President of International Conference of Building Officials, 1993-2001). ICBO was one of three legacy organizations that formed the current International Code Council (ICC). Jon was a Founding Member and two-time Chair of the IRCC, leading the charge along with Mike Balch to develop the 1998 <i>Guidelines</i> document. He attended meetings regularly through the year 2003, hosting meetings in LA, and again from about 2009 – 2013, providing leadership and perspectives from the USA. He was instrumental in the creation of a model performance code titled ICC Performance Code for Buildings and Facilities for the ICC. He also supported the need to wholistically understand the overall regulatory framework needed to support such codes.</p> <p><b>Ms. Beth Tubbs</b> (Fire protection engineer with International Conference of Building Officials (ICBO) and International Code Council (ICC)). Beth attended meetings 1997 through 2002, 2016 and 2017. As staff liaison and committee Secretariat, she facilitated the development of the 2000 <i>ICC Performance Code for Buildings and Facilities</i> and continues to provide support for this document. During her active years with IRCC was she was also Convenor of CIB TG37, which focused on technical aspects of performance-based building codes. Through her current affiliation with the Society of Fire Protection Engineers (SFPE) and the International Fire Safety Standards (IFSS) Coalition, she continues to support the need for a holistic approach for performance-based regulations.</p> <p><b>Dr. Brian Meacham</b> (Founding Member and Past IRCC Chair). Brian has been part of the IRCC from the start. Over the past 25 years, he has contributed to many of the initiatives and publications of the IRCC, from the original 1998 <i>Guidelines</i> document to the 2010 <i>Principles and Experiences</i> document, and several workshop reports, conference and journal papers along the way. He organized the 2003 Summit and hosted the 2006 and 2010 meetings in the USA. He has also been extremely fortunate to have been invited to participate in Expert Panels, reviews and related activities for several IRCC members, including from Australia, Japan, the Netherlands, New Zealand, Scotland, Singapore, Sweden and the USA.</p>





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