



Record of IRCC Meeting
16-18 April 2007
Beijing, China

Location: Park Plaza Beijing Wangfujing, 97 Jinbao Street, Dong Cheng District, Beijing, 100005, P.R.China
Time: 9.00am – 5.30pm Monday 16, 8.30am – 12.00pm Tuesday 17 and 9.00am-5.00pm Wednesday 18 April

Present

Mike Balch	ABCB, Australia	(MB)	Out-going Chair
Brian Meacham,	Arup, USA	(BM)	In-coming Chair
Lam Pham,	ABCB, Australia	(LP)	
Paul Stollard	SBSA, Scotland	(PS)	
Mike Stannard,	DBH, NZ	(MS)	
Denis Bergeron,	NRC, Canada	(DB)	
Rainer Mikulits	OIB, Austria	(RM)	
Tomiyoshi Ogawa	MLIT, Japan	(TO)	
Javier Serra	MH, Spain	(JS)	

Apologies

John Traw	USA	(JT)
Rick Okawa	ICC, USA	(RO)
Shona Dunn	DCLG, UK	(SD)
Wataru Gojo	NILIM, Japan	(WG)
Olav Berge	NOBTH, Norway	(OB)
Hiroki Sunohara	MLIT, Japan	(HS)

Guests

Dr Wang Jun	CABR, PRC	
Yang Rong	Dept of Stds, Ministry of Construction, PRC	
Lin Haiyan	CABR, PRC	
Cheng Zhi Jun	CABR, PCR	
Suzanne Townsend	DBH, NZ	(ST)
Megumi Hata	MLIT, Japan/ABCB	(MH)
Mingchun Luo	Arup, Hong Kong	(ML)
Wayne Bretherton	WSP, UK,	(WB)
John Carson	CTE, Australia	(JC)
Xiaoming Wang	CSIRO, Australia	(XW)
Wu Lu Yang	Dept of Stds, Ministry of Construction, PRC	
Chen Guoyi	Research Institute, Ministry of Construction, PRC	
Prof Fang Dongping	Tsinghua University, PRC	

Agenda Item 1 Welcome, Opening Remarks

Dr Wang Jun opened the meeting and welcomed IRCC meeting participants to Beijing. He outlined the activities of CABR which was founded in 1953 and provides comprehensive research in building activities such as earthquake engineering, foundation design, the built environment, fire protection, intelligent building systems, software, product development, disaster prevention and mitigation. The CABR has produced 400 Building related Standards and Codes. The 2005 Residential Building Code is performance based. The CABR would be keen to make a contribution to the performance based regulatory system.

Mr Yang Rong also welcomed the IRCC meeting to Beijing and was very happy to support the meeting as a result of discussions with MB and the ABCB. China is keen to cooperate with other countries in the world and the IRCC provides a good vehicle to do this. He spoke of the challenges in urban construction that China is currently facing. More than 200M m2 of building is being constructed each year to provide housing for the 10M people that are moving from rural to urban environment each year. Quality, safety, land use, sustainability, energy efficiency are all issues of focus. He mentioned that spring is the best season to visit as winters can be very cold and summers very hot and invited meeting participants to enjoy Beijing.

MB thanked WJ and YR and CABR and MoC for co-hosting the meeting and welcoming the IRCC to Beijing.

Note: MB handed over chairing the meeting to BM at the end of agenda item 4. Note also that there was some modification to the order of the published meeting agenda to suit participants.

Agenda Item 2 Apologies

Apologies were received as detailed above. The meeting expressed sorrow and sympathy for the recent losses experienced by both OB and RO.

Agenda Item 3 Record/Actions from San Francisco meeting

The minutes of the last meeting in San Francisco in October 2006 were agreed as a true and accurate record of the meeting and approved to be posted on the website.

ID	Action	Result
1	The BM write up of the Gold Coast Global Policy Summit on Sustainability to be posted on the Website	Completed
2	JT advised that there is no weblink to the ASTM research on slip resistance. The ASTM contact person is Dan Schultz. JT to enquire whether minutes of the F13 workgroup are available and advise. TN to provide the appropriate European National Standards on slip resistance.	JT TN
3	DB to send context paper prepared for the Canadian Code on the role of regulation, insurance and markets to MS for sharing with members. (Action 1)	DB MS
4	Strong interest in development of fire design scenarios. MS to forward details to PS	Completed
5	The LP questionnaire on Ludin thesis on fire engineering to be resent and countries who have not yet responded to do so ready for consolidation at next meeting.	Agenda Item 7.1

6	Responses to the survey on relationships with Standards organizations sent out by TT required from Norway, US, England & Wales, Austria and Japan. Questionnaire to be resent. Results to be collated for next meeting.	Agenda Item 11
7	RB to report at next meeting on progress on protected elevators for fire service access and occupant egress. For future workshop.	Deferred
8	Scotland would like to participate in the next edition of the IFEG. The document was released in March 2005 and it was intended to be updated every three years. Brian Ash would consider a timetable for updating.	Agenda Item 7.2
9	Unanimous agreement to produce a 2 nd edition of the IRCC “Performance Based Building Regulations” document. This does require a strong commitment from all. PS agreed to develop a paper on content and format, etc and that it would be the subject of a half day scoping exercise at the next meeting.	Paper received from PS Agenda Item 8
10	Add existing buildings as a topic for next meeting. DB to provide the lead.	Agenda Item 10

Agenda Item 4 Energy Efficiency, Sustainability, Climate Change – Country overviews

4.1 Australia

This is at the centre of political debate. The Australian Geernhouse Office, AGO, have produced two scoping studies on water efficiency and materials. There has also been work undertaken on hot water heating. There is some variability of approach with central government, loacal government and industry actively working on sustainability.

On climate change the AGO have produced adaptation reports indicating that it will cost an additional \$700M/annum for new buildings with increased intensity of cyclones, bush fires, etc and an additional \$2,300M / annum to protect existing buildings.

Energy efficiency requirements for both commercial and residential buildings are now included in the Building Code of Australia. A protocol to evaluate energy efficiency software for assessment against code performance requirements is being developed. It needs to capture all code requirements, eg, building fabric, ventilation.

4.2 Austria

The implementation of the EU directive 2002/91/EC on energy efficiency should have occurred by 4 January 2006 but has been delayed and is now likely for 2008/9.

The OIB Guideline 6 includes coefficients for heat demand, cooling demand and total energy supply using surface-volume ratios to determine actual values in kwh/m²/annum.

Energy certificates are required to be displayed for all buildings sold or rented and all public buildings, new buildings and renovated buildings >1000 m² from 1 January 2008.

There are no requirements for sustainability or CO2 emissions.

Climate change requirements are considered, particularly prevention against damage caused by floods as a result of the catastrophic floods in 2002. Snow loading requirements are not being changed, it is mostly a question of maintenance. The ski industry is suffering but this hasn't yet affected building regulation.

4.3 Canada

NRC have developed two model codes on energy efficiency, the last in 1997. However they haven't been adopted due to changing political priorities. However, there is a new project being considered for the NRC to develop an updated code, depending on funding approval, by 2012.

The LEED (Leadership in Energy and Environmental Design) rating system is becoming increasingly popular and some municipal regulators are starting to specify minimum LEED ratings although this is variable across the Canadian federation.

4.4 Japan

Climate change. There has been a 3° rise in average temperature in Tokyo in the past 100 years from average 13.5° to 16.5°. There are now 30 tropical days per year in Tokyo, up from 15 prior to 1975.

There have been energy efficiency regulations Act concerning the rational use of energy since 1979, providing prescriptive standards for non-residential buildings and housing and mandatory reporting on energy conservation. A new scheme was enforced in 2006 for non-residential and housing both > 2000m² requiring periodic reporting on maintenance. There is a backlog issue in 2004 only 74% of large buildings and 32% of housing conformed to the 1999 standards.

MLIT has started to review Kyoto commitments and protocol. Building and housing is one major target area using 1/3 of total energy.

The CASBEE – H1 (Comprehensive assessment system for building environmental efficiency) rating system has been developed.

4.5 New Zealand

Sustainability and energy efficiency are very high on the political agenda and there are a number of government initiatives announced, including a move towards zero carbon government departments. The Building Act 2004 makes the promotion of sustainable development a specific objective of the Act.

Some changes to building code requirements to improve energy efficiency of houses and buildings are being progressed ahead of the outcome of the Building Code Review.

Consultation has occurred on three proposals to: substantially increase the thermal performance of housing (higher performance criteria leading to higher R values for walls, floors and ceilings and double glazing throughout the country); improve the lighting energy density levels for commercial buildings; and provide an Acceptable Solution for the installation of solar water heaters to reduce compliance costs. Changes are to be introduced progressively throughout the country starting from the colder southern locations later in 2007.

Further proposals are about to be released for public consultation to develop an energy rating requirement for domestic hot water supply, and include energy efficiency requirements for HVAC commissioning and on-going use.

Consideration is being given in the review of the Building Code to using carbon emissions as a sustainability metric for resource efficiency for the whole of the life of the building, including embodied energy of the construction materials, energy in use and end of life.

4.6 Scotland

An election is to be held in Scotland in two weeks time. The Green party could hold the balance of power and all parties have a green agenda with a determination to do much better than Kyoto. One party is promising zero carbon housing within three years using tax incentives, 0% tax rating for zero carbon. All buildings will need to include some micro-generation and there will be tighter enforcement with post construction testing (thermal imaging, etc). Environmental design prizes are being established.

Energy usage has already reduced by 60% in the last 10 years. The EPBD (EU energy performance building directive) certificates as introduced in Scotland require publication of energy consumption and carbon usage data. There are controls on boilers and bio-fuels (eg pellets, particulate emissions). There is a requirement that buildings over 1000m² have 15% energy produced by micro-generation (photo-voltaic, wind, heat pump, geothermal, solar hot water). Software has been developed (SAP/SBEM). There are controls on light bulbs and commercial display lighting and leaflets have been distributed for existing homes. The EDPD requirements for maintenance of air conditioning plant are operating. Lifetime homes requirements have been introduced (including wheelchair accessible downstairs kitchen and bathroom able to be converted. This has added 5% to basic cost of house.

Issues to be addressed include zero carbon housing which will almost certainly require triple glazing, durability, rainwater harvesting, grey water, further micro-generation (up to 25%?), demolition and sprinklers.

4.7 Spain

The Building Code issued in 2006 includes minimum requirements for energy efficient buildings. Most domestic energy consumption in housing is for heating (46%) and hot water (21%). Regulations require a minimum contribution towards domestic hot water ranging from 30% to 70% depending on location and hot water demand. In addition, for some buildings, there will be a minimum contribution from photovoltaics to the total energy demand. The goal is to install 4.5M m² of photovoltaic panels by 2010 which will increase generation from pvs from 143 to 400MW. Commercial and employment opportunities will be created.

Energy certificate requirements are coming into effect from 30 April and will be voluntary until 31 October 2007. There are two labeling options: performance using referenced software or simplified using tables with a rating from A (highly energy efficient) to G (poor).

Addressing existing buildings will be important with Spain building 700,000 apartments each year but there are 20M existing buildings.

4.8 United States

Energy efficiency is driven by the market more than by regulation. Voluntary measures, such as Energy Star Rating (LEED Certification) is strong and growing. There is the ICC Model Energy Code, with requirements for double glazing, minimum R values but this is dependent on States and municipalities adopting it.

There has been a move towards “sustainable communities”. Attention has been galvanized by natural hazard events such as Cyclone Katrina, heavy snows, and other “visible” impacts. CO₂ emissions now have to be treated as contaminants since the Supreme Court overturned an EPA decision that they couldn’t regulate for CO₂. There has been a diverse approach to these issues across the USA. California has been the most progressive with tough regulation on car emissions and energy generation. This is followed by Massachusetts. The mid south and centre are fossil fuel states.

4.9 China

Energy efficiency and conservation is a key government objective for environmental, social and economic development. Construction is currently booming. First regulations occurred in 1986 for residential buildings. Requirements for public buildings (non-residential) followed in 2005. As China is a large territory, there are three different design standards (north, central and south) and five different climate zones.

There are performance and prescriptive options. There is a challenge in performance calculation for energy efficiency modeling as there are large variations.

Energy efficiency is now mandatory (residential heating and cooling; public heating, cooling and lighting) whereas green and sustainability provisions are voluntary. The first

green building design standard was released last year, that addressed energy, water, materials and ground planning.

4.10 General Discussion

JS noted the United Nations Environmental Programme (UNEP) has just released a report on the role that buildings can play in combating climate change. Copies of this UNEP Sustainable Building and Construction Initiative (SBCI) Buildings and Climate Change report can be downloaded from <http://www.unep.fr/> or www.unep.org.

Agenda Item 5 Update on PB Code Provisions in Hong Kong

ML spoke of the fire engineering approach and performance-based code development in Hong Kong. A performance-based approach has been permitted as an alternative and has increasingly been used for special buildings (airport, atrium, etc) over the past 15 years. Analysis of fire death and injury statistics revealed that Hong Kong compared favorably with other countries (3.5 deaths/M inhabitants/annum) and resources allocated to fire prevention (0.8% GDP) similar to other countries. This is in a country with a high density of high-rise buildings, high population density, narrow streets with high traffic volume, making access to existing buildings sometimes difficult.

The review was to develop a performance-based code framework for HK and prepare an appropriate system of control for enforcing code (both prescriptive and performance-based) requirements. The recommendation is to include both life safety and property protection objectives against fire (including spread of fire between compartments, prevention of building collapse, and facilitation of fire fighting and rescue by fire services personnel)

Agenda Item 6 Fire Engineering Performance Based Design

6.1 Australia

A number of initiatives or issues to be addressed on fire safety in Australia include:

- Quantification of fire performance
- Egress for people with disability
- Development of reference document for fire sprinklers to meet code objectives
- Fire safety in child care centres
- Sprinklers in aged care buildings
- Wild fires
- Smoke spread through penetrations
- Ionisation vs optical detectors

The International Fire Engineering Guideline process is being used on approximately 70% of non-residential buildings.

6.2 Austria

Fire engineering design is possible for places where no prescriptive solutions are available and for deviations.

New OIB Guidelines 2, 2.1, & 2.2 have been developed on fire safety. Discussion occurred about the evaluation of performance-based design and the expertise needed similar to the Ludin thesis. The next generation of quantitative criteria will be aiming for a set of criteria that fits both performance and prescriptive solutions.

6.3 Canada

Canada is working on quantification of fire engineering performance as needs arise but there is no pressure to move to 'performance'. Under the Canadian framework it is a question of how equivalency with prescriptive requirements can be established. There has been a push to

undertake research where performance is needed. Design fires for multi-residential buildings are being developed. This considers how walls work as a system. There is a move in Canada to minimize regulation and leave it to the professionals to be accountable.

6.4 Japan

There is a move to performance only when verification methods are available. There is a need for more research on quantification of risks after events. There are deemed to satisfy solutions provided and ordinary verification methods that can be used directly to establish compliance with code requirements. However there are also advanced verification methods that require evaluation by evaluation bodies and then approval by the Minister prior to being permitted. Verification methods for fire resistance and for floor/building evacuation are considered 'prescriptive' as equations, parameters and acceptance criteria given. These use fire-load concept. However the statistical basis is too small, there are insufficient categories provided and there is no recognition for the provision of sprinklers.

6.5 New Zealand

As part of the review of the New Zealand Building Code, it is proposed to specify specific fire scenarios for use in any performance based fire engineering design. A framework of tolerable impacts for different performance group/importance level buildings is being developed. The fire design scenarios are based on NFPA 5000 and will specify the fire characteristics, occupant behaviour and acceptance criteria. This is a work in progress and the performance design scenarios are currently being tested against the current prescriptive requirements to test whether similar levels are being set.

6.6 Scotland

The IFEG has now been cited as a permitted design process. The report on the comparison of fire safety requirements for tall buildings has been provided to IRCC members. Fire is about life safety. Now sustainability objectives introduce consideration of property protection. This has led to proposals for all schools to be sprinklered. The prescriptive means of escape requirements are being reviewed to see if a parallel can be drawn to performance and consider the reasonableness of assumptions. Egress for people with disabilities is to be limited to provide spaces and protected lobby areas, and require management solutions.

The fire at the Rose Park aged care home is still in litigation so findings and testing undertaken is still not available.

6.7 Spain

Spain has been mainly following prescriptive fire engineering requirements apart from the likes of new airports and some high rise buildings. There is a lack of knowledge of performance design, both from professionals and building officials. Education is being improved and a new Master of Fire Engineering course is being set up. Technical guidance is being developed, including Spanish translations of the ICC and SFPA documents. International expertise is being imported to undertake large projects.

6.8 United States

Fire engineering has been recognized in the US for over 60 years. Fire Protection Engineers and Fire Safety Engineers are recognized and registered by State. The International Building Code is adopted in most States that relies on the 'alternative material and method' provisions to undertake performance design. Fire engineering performance design has been well accepted for the last eight years. Education and guidance (NFPA and ICC) has been provided to enforcers. A balanced approach between passive and active requirements is being worked on. More guidance on design scenarios is required to ensure that prescriptive levels are set at similar levels. The recommendations from the World Trade Centre have yet to be implemented as nobody has really made the case that the buildings performed poorly given the event. Approaches for performance design include how to strengthen the design process and education of all parties involved.

Agenda Item 7 Fire Engineering Issues

7.1 Ludin Thesis

LP presented the findings of the survey related to the Ludin Thesis that had been completed by member countries. The differences in performance-based terminology used in different countries was noted, as was the shortage of well trained and experienced staff to handle fire engineering issues. The four key Ludin tenants were supported to a greater or lesser extent by members:

- No clear verifiable acceptance criteria for design
- High variability from prescriptive design
- High variability in safety from analytic design
- Need for a stricter approach

There was a discussion on how this could be addressed, what concrete steps could be taken to address the issues raised. Refer Item 9 for the proposed workshop in Austria.

7.2 International Fire Engineering Guidelines

BA outlined the joint development of the guidelines by Australia, United States, Canada and New Zealand, published in march 2005. In Australia it has been endorsed by the ABCB, the Insurance Council and the Building Surveyors and is widely used. It was agreed that it was too early for a revision. It would be better to wait for a step change to occur. Scotland had undertaken a comparison of it with British Standards and had subsequently given it the same status, that of good engineering practice. Scotland would develop a Section 0 (regulatory environment) for their country and publish it on their website. Copyright remained with the ABCB.

Agenda Item 8 Review of IRCC Document “Performance Based Building Regulation”

PS discussed his scoping study paper supporting a second edition of “Guidelines for the introduction of performance based building regulations” first published in 1998. Scotland has used the document there is no other like it. It helps to provide a common understanding of semantics and terminology across the international community. He was not advocating a simple updating as there were new members with new ideas to contribute. Agreement was needed to undertake the second edition and, if so, the development process and costs and resources.

There was general support for the concept of a new edition. It had been very valuable in changing the Spanish regulations, introducing a performance-based system. It was a pioneering document that had also been of real benefit elsewhere, providing a collective wisdom and international authority. There was discussion of whether the purpose had changed, rather than the benefits of performance-based codes which are now widely accepted and taken for granted, it could focus on the mechanisms and structures to make the system work effectively. What are the next set of questions that needs to be asked of performance-based regulation? The importance of the verification and enforcement systems needs to be highlighted.

The proposed principles (items of general agreement among members) in the PS scoping document were discussed. There was discussion as to whether a whole of systems approach should be taken or whether it should only concentrate on technical requirements rather than legal (enforcement). A majority supported a whole system approach.

There was agreement in principle to a second edition. It was proposed that an editor be appointed. There were challenges for some members in providing financial contribution. Further discussion was required.

Agenda Item 9 Outcomes of San Francisco Risk and Performance Workshop / Website / Future Workshops

BM was thanked for the very useful and successful workshop he had organized in San Francisco. His summary document is to be put on the IRCC website. **(Action xx)**

Other documents and occasional reports that the IRCC had undertaken needed to be readily accessible on the website. The IRCC is regarded as an important international group by other organizations, eg PEER. Participants in IRCC workshop can gain kudos and status. Therefore the website needs to reflect the work undertaken. The Performance based building regulation guidelines, the cost-benefit document, the two summit reports and the risk report need to be accessible and other areas of the website need to be updated. **(Action xx)**

The meeting agreed that such workshops aimed at examining and learning about specific topics of interest for all members was very valuable. A number of topics were suggested:

- Elevator manufacturers/ egress for people with disabilities
- Zero carbon/carbon neutral housing – what does this mean, a pragmatic assessment and practicalities of how to regulate using the Building Code
- Fire performance criteria and verification
- Heritage/historic buildings
- Existing building seismic upgrades and resilience of infrastructure (disaster mitigation)
- 2-tiered objectives in regulation (H & S then others)
- Security vs safety

It was agreed that a workshop on fire performance criteria and verification would be held at the meeting in Austria with an invitation to Johan Ludin to attend. **(Action 2)** New Zealand would organize a workshop on carbon emissions for April 2008. **(Action 3)** Spain offered to organize a workshop on heritage buildings.

Agenda Item 10 Existing Buildings

DB asked for comments on the responses from members and from the Canadian provinces and territories to the survey on existing buildings.

ST mentioned the complexity of addressing existing buildings which is not comprehensively addressed in regulation. There has been a lack of available information on issues affecting quality. NZ has developed draft quality targets for existing residential buildings for what the community would expect. Implementation is still to be considered. Seismic upgrades are being addressed in local earthquake-prone building policies.

BA spoke of the Australian guideline developed to inform practitioners dealing with the energy efficiency of existing buildings.

PS mentioned the different Scottish agencies dealing with the issue, eg health, etc. A sustainability discussion paper had been released providing a risk-based approach to upgrade existing buildings. This proposed a duty on owners, and does not propose government money.

In Spain this is addressed at a local level. In Madrid, inspections need to be passed and significant rehabilitation is required (structural, weathertightness). Local bylaws oblige owners to keep the building at a certain level.

In Japan the law was changed in 2004. Seismic safety was promoted at the local level with the national government providing financial support if the local prefecture was also supportive. Earthquake insurance was expensive and voluntary and is not widely taken up. This became a public issue if the level of risk too high.

In Canada there were incentive programmes addressing the energy efficiency of existing buildings.

Energy certificates are to be required in Austria in a disclosure regime for new and existing buildings which provide measures and recommendations for improvement. Subsidies are available if energy performance is better than code requirements. However, building permits do create a right and upgrade cannot be required unless the owner wants to change the building.

In then US, BM mentioned accessibility issues (civil rights) conflicting with the concept of 'the home is your castle'.

DB to summarise data from the survey and report to the next meeting as to whether further discussion/action by IRCC is required. **(Action 4)**

Agenda Item 11 Relationship with Standards Organisations

The summary of the survey relating to Standards was provided to members. It was agreed that this could provide an input into the rewrite of the IRCC Performance Based Building Regulation document.

Agenda Item 12 Country Updates

12.1 Australia

The ABCB strategic plan includes as outcomes: a nationally consistent & cost effective regulatory framework, a more sustainable built environment, a safer & more socially inclusive built environment, an informed & responsive building industry, and increased practitioner skills & competencies. The focus is on reducing regulation. There is a strategy to reduce state variations in the Building Code. There is concern that this might cause a proliferation of state requirements may be put into other legislation. A Joint Working Group is being set up to consider delineation between building and planning, local government intervention, and sustainability and adaptation to climate change.

The ABCB conference on the Gold Coast is held 24-26 September 2007. Themes are natural hazards and threats, sustainability, and quantification of performance.

Access proposals are with Commonwealth Ministers for a decision. Research projects include suitability of sustainability tools, wayfinding research, slips, trips and falls, glass injuries, external noise and fire research.

12.2 Austria

Risk is implicit in functional requirements. There is no quantitative risk assessment. However, risk can provide a justification for deviations from the prescriptive requirements, using an equivalency approach. Standards are only provided for the Mechanical resistance and stability requirements (essential requirements 1) through the Eurocodes.

Harmonisation remains the main issue in Austria. Current timetable is for all provincial legislation to be in force adopting the national code by 1 January 2008. This timetable is aimed at satisfying the EU Energy Performance of Buildings Directive.

12.3 Canada

Four fire research projects include

- Fire performance of single family house: to determine the impact of new products such as engineered wood products on the overall safety of occupants
- Design fires: to develop fire characteristics of real fires, initially of multi-suite dwellings
- Heat and moisture performance of roof, walls and windows
- Fire and acoustical performance of buildings

Refer <http://irc.nrc-cnrc.gc.ca>

Other issues include:

- regulating hot water temperature at delivery points in buildings,
- Care and residential care occupancies : how to address the special needs of an ageing population.
- Secondary suites: residential suite within a single-family house
- Spacial separation between buildings of combustible construction
- Addition of a new water-use efficiency objective : to consider requirements for low-flush (6-liter) toilets.

The proposal to change the code publication cycle from 5 to 3 years is now feasible as there are still two major provinces who have not adopted the 2005 Code.

12.4 Japan

The response to the structural fraud case continues with strict confirmation and inspection, a review of Kenchikushi qualification system, and consideration of insurance policy. The expert review by a newly established designated review body of structural calculations for certain buildings is to be mandated. Guidelines for conformation, inspection and review are being established. Penalties are being increased. The confirmation period is being extended from 21 to 70 days. The level of expertise available to undertake structural reviews is an issue. New licensing requirements for structural and building services engineers are being introduced. A mandatory insurance or deposit scheme is being introduced.

Amended barrier free legislation for people with disabilities has come into force. Changes apply to public works, hotels and public toilets. Amendments have also come into force in the Building Standard Law on requirements for spray-on asbestos and rock wool containing asbestos.

!2 .4 New Zealand

The Building Code review project continues and a second discussion document proposing more specific performance criteria will be released min year. Some significant changes are being proposed, eg. carbon emissions as a sustainability metric and specifying mandatory fire design scenarios. Other proposals are more evolutionary and others are providing greater clarity.

There have been legislative changes relating to weathertight homes dispute processes and an important High Court judgement. A guidance document on remediation principles for affected houses is being finalised for issue mid 2007.

Work continues to introduce building practitioner licensing, the accreditation of Building Consent Authorities (local government), and product certification.

12.5 Scotland

The new system was introduced in 2005 and substantial amendments are now being introduced. This includes the release of prescriptive requirements for small buildings and 'livability' requirements for domestic housing.

Changes to procedures include new certifiers for energy, audits of verifiers, and the introduction of EPBD certificates on construction, sale and renting of buildings.

Research projects include noise, micro-renewables (gables torn off by turbines, photovoltaics), testing, durability and demolition.

12.6 Spain

A two step procedure (design stage and completion) to certify the energy efficiency of new buildings will come into force by the end of next October. It is voluntary until then.

New requirements for accessibility in building and urban spaces are anticipated shortly. The new requirements will harmonize, reinforce and complete very disperse existing regulations.

Approval of a new Basic Document of the Building Code related to noise protection is also anticipated shortly.

12.7 United States

BM spoke of model code development and their adoption by states and municipalities. ICC is predominant with most states having adopted documents such as International Building Code, International Residential Code, International Mechanical Code, International Fire Code, International Energy Code, etc). NFPA is also important (NFPA 5000 – building code, NFPA 101, Life Safety Code, NFPA 1 – Fire Code, standards).

The ICC Code Technology Committee continues to consider balanced fire protection, emergency evacuation with elevators, carbon monoxide detectors, day care / adult care / assisted living, disabled access, climbable guards, NIST WTC recommendations. The 30 NIST recommendations include increased structural integrity and enhanced fire resistance including full burn out requirements, enhanced building evacuation (elevator company liability issues). To date very few recommendations have been adopted.

Agenda Item 13 Membership

As agreed at the San Francisco meeting, letters were sent to CEBC, NFPA and NIST confirming that these organizations no longer met the IRCC membership criteria and invited them to cooperate with the IRCC on objectives of mutual interest.

It was agreed that CABR, China membership would be of real value to the organization. A letter inviting CABR to join would be sent. **(Action 5)**

Agenda Item 14 Correspondence

Refer Appendix.

Agenda Item 15 Other Business

There was a request that if specific requests for advice was sought from members, then a report summarizing the findings be provided at the next meeting. **(Action 6)**

It was agreed that the approach taken during this meeting for themed responses and updates from countries worked well. In future, only the host and new countries should provide a general update and that other countries should only provide new items that will be of general interest.

BM thanked all members for willingly sharing information. He also thanked MB for his efforts and contribution in leading the organization over the past three years.

A vote of thanks was also given to the CABR for their organization in making the meeting in Beijing possible. Their hospitality and the visit to the Olympic facilities had been enjoyed enormously by all and were much appreciated.

Agenda Item 16 Next Meeting / Schedule of Meetings

- Next meeting Vienna, Austria, 8 – 10 October 2007
- Following meeting New Zealand 10-12 April 2008

Subsequent meetings:

- Spain 2008 (October)
- Scotland 2009 (May)
- Canada

Actions from IRCC Beijing Meeting

ID	Action	Action By
1	DB to send context paper prepared for the Canadian Code on the role of regulation, insurance and markets to MS for sharing with members. From San Francisco meeting	DB
2	It was agreed that a workshop on fire performance criteria and verification would be held at the meeting in Austria with an invitation to Johan Ludin to attend.	RM
3	New Zealand would organize a workshop on carbon emissions for April 2008.	MS, ST
4	DB to summarise data from the survey of members about existing buildings and report to the next meeting as to whether further discussion/action by IRCC is required.	DB
5	CABR is to be invited to join the IRCC as a member.	MB, MS. BM
6	A report summarizing the findings of all general requests for advice sent to members advice sought from members to be provided at the next meeting.	All

Appendix: Correspondence between San Francisco Meeting October 2006 and Beijing Meeting April 2007

Date	From	Details
3, 6, 10, 11 April	Xiaoming Wang	Meeting details
10 April 2007	Jon Traw	Apology
10 April 2007	Lam Pham	Lundin thesis Survey report
5, 10, 12 April 2007	Mike Stannard	Agenda, minutes, Country Updates, contacts
6 April 2007	Lam Pham	Special meeting for APEC members of IRCC
4 April 2007	Paul Stollard	Scoping document for 2 nd ed. IRCC Performance Based Building Regulation
30 March 2 April	W Gojo, Atsuo Okasaki	Job transfer, M. Sunohara replacement member
23, 26 March 2007	Mike Stannard	Updated contacts
23 March 2007	Rick Okawa	Apology
23 March 2007	Mike Stannard	Agenda, IRCC Workshop – Risk in Regulations – Final report
22 March 2007	Brian Meacham	Invitation to Arup Shanghai office
27 February 2007	Shona Dunn	Apology
21 February 2007	Tariq Nawaz	Resignation
20 February 2007	Xiaoming Wang	Meeting details
20 November, 16 February 2007	Denis Bergeron	CD-ROM version of the 2005 Canadian Code sent.
13 February 2007	Wataru Gojo	Apology
13 December, 2, 6, 9 February	Denis Bergeron, Javier Serra, Atsuo Okasaki,	Questionnaire on Existing Buildings
29 January, 5 February, 13 March	Lam Pham	Meeting details
5 February 2007	Brian Meacham	IRCC Workshop – Risk in Regulations – Draft report
8, 9, 17 January 2007	Lam Pham, Mike Stannard, Denis Bergeron	Survey on Lundin thesis
8 Dec, 4 January	Jon Traw, Rick Okawa	IRCC Questionnaire response on Standards
14 December 2006	Mike Stannard	IRCC Contact details
10 December 2006	Mike Stannard	IRCC Website updates, previous minutes, Report on Summit on Sustainability
29 November 2006	Mike Balch	IRCC membership letters to CEBR, NIST, NFPA
21 November 2006	David Smith	BRE Conference 3 presentations
20 November 2006	Mike Balch	Confirming Beijing meeting dates 16-19 April
20 November 2006	Denis Bergeron	Draft Questionnaire on Existing Buildings for comment
16 November 2006	Mike Stannard	SF meeting minutes
14 November 2006	David Smith	BRE Conference presentations
30 October 2006	Mike Stannard	NZ Fire Design Scenarios to BM and PS
27 October 2006	All	Thanks to BM for organizing SF meeting
27 October 2006	Mike Stannard	PEER presentations and link uploaded on IRCC website