

# CIB Commissions' Scope and Objectives

**TG53**

## Postgraduate Research Training in Building and Construction

Coordinator(s) • Dr. Dilanthi Amaratunga, University of Salford, UK

The aim of the Task Group is to cooperate and transfer knowledge and experience between built environment research institutes on doctoral research methods and initiatives to increase the level of training received by the involved researchers.

The scope of activities will be limited to PG/doctoral training issues within the Built and Human Environment disciplines, across the globe.

This results in the following main objectives:

- to provide a forum for the exchange of information relating to doctoral training issues within the built and human environment community and to encourage collaboration and joint projects among members and other interested parties
- to arrange symposiums and workshops to facilitate wider discussions of relevant research pertaining to the subject area
- to promote best practices (in terms of implementation and application) within the built an human environment doctoral/PG research training.

**TG57**

## Industrialisation in Construction

Coordinator(s) • Prof. Frits Scheublin, The Netherlands  
• Prof. Gerhard Girmscheid, ETH-IBB, Switzerland

The existing strategies for industrialisation in construction can be divided in the following categories:

- On-site industrialisation that refers to the application of advanced tools and technologies on buildings sites, such as GPS-positioning, assembly of big prefabricated units, identification of elements with bar-codes, just-in-time deliveries, self-climbing formwork, self-levelling concrete, robotic finishing applications, etc.

- Off-site industrialisation that is based on the assumption that buildings may also be made in factories. The ultimate goal is a radical change that will lead to new buildings, fully constructed with prefabricated elements assembled on site, ready for use.

Another split in industrialisation strategies is between product industrialisation that focuses on the technological aspects of building and process industrialisation and Process industrialisation that is concerned about how parties are cooperating, contractually and informally. It deals with Design and Build contracts or with more advanced strategies like PFI, DBFMO, etc.

Within above defined scope special attention will be paid to:

- Drivers for industrialisation such as: improved quality, added value for clients, cost reduction and lack of skilled labour
- Barriers to industrialisation: conservatism, cultural issues and the position of architects
- Strategies for industrialisation: process innovation versus product innovation, off-site production versus on-site production and the implementation of existing innovative systems.

**TG58**

## Clients and Construction Innovation

Coordinator(s) • Prof Keith Hampson, CRC in Construction Innovation, Australia  
• Prof Dr Aminah Robinson Fayek, University of Alberta,Canada

The Task Group will examine the ability of clients to drive innovation in the Property and Construction industry through their purchasing power, through documentation standards and developing regulations and codes and other modes of influencing industry innovation.

The Task Group will examine the forms of client influence on property and construction innovation across the supply chain.

It will attempt to engage the major industry clients and the research community in:

- Identifying client needs
- Determining mechanisms for client engagement
- Networking between clients and the industry
- Prioritising research issues from the clients perspective
- Examining the client motivations for Innovation
- Improving communication between clients and the research community
- International issues for the global players
- Development of feedback loops for construction performance

**TG59**

## People in Construction

Coordinator(s) • Dr Theo Haupt, Cape Peninsula University of Technology, South Africa  
• Prof John Smallwood, Nelson Mandela Metropolitan University, South Africa

The Task Group will focus on human resource issues in the construction industry. Construction is a labour intensive activity and the behaviour of people has an enormous influence upon the organisation and performance.

The Task Group aims to involve representatives of employers, workers and governments, and researchers in both developed and developing countries, and to foster dialogue and collaboration.

The Task Group will bring together researchers with one of two aims:

- Those who will be primarily seeking to improve the performance of the industry and with focus on people
- Researchers whose aim is primarily to improve the lives of the people who work in the industry.

Against this background the Task Group objectives are:

- to create a network of members who are interested and involved in research into labour issues in the construction industry
- to bring into the network researchers from outside the construction disciplines who are working on construction labour issues
- to provide a forum for the exchange of ideas on social and labour issues in construction amongst those in the network
- to identify key issues for future research and possible sources of funding
- to disseminate research findings within the network and to a broader group of academics and practitioners working in the field

# CIB Commissions' Scope and Objectives

## TG62

### Built Environment Complexity

Coordinator(s) • Dr A. H. Boussabaine, University of Liverpool, UK  
• Dr Richard Kirkham, University of Manchester, UK

The philosophy of TG62 is to focus on and respond to the necessity for a strong, coherent, international research strategy to address complexity theory within the built environment disciplines and contribute to the “built environment complexity research roadmap”. The Task Group's objectives are thus:

- The development of the research roadmap
- To develop an open access journal “The International Journal of The Built Environment”
- To run a two yearly conference built environment complexity (Becon)
- To develop courses in complexity science for research and the practitioners in the built environment disciplines

## TG63

### Disasters and the Built Environment

Coordinator(s) • Dr. Richard Haig, University of Salford, UK  
• Dr.Cassidy Johnson, University College London, UK

The Task Group aims to stimulate ideas for future research by exploring the range of perspectives from which the construction industry is able to contribute towards improved resilience to disruptive challenges and by facilitating the dissemination of the existing knowledge base.

To this effect, the Task Group will address the following objectives:

- Define a more expansive view of the construction lifecycle of infrastructure projects that encompasses the need to anticipate, assess, prevent, prepare, respond and recover from disruptive challenges
- Create a portal for sharing and disseminating knowledge about resilience and disruptive challenges for land, property and construction professionals
- Enhance knowledge and raise awareness among practitioners and researchers, of the linkage between good planning, design, construction and operation, and disaster prevention and resilience
- Identify future research and work requirements relating to construction and resilience to disruptive challenges
- Arrange symposia and workshops to facilitate wider discussions of relevant research pertaining to the subject area
- Encourage collaboration and joint projects among members and other interested parties

## TG64

### Leadership in Construction

Coordinator(s) • Assoc Prof Paul Chinowsky, University of Colorado, USA  
• Prof Patricia Carrillo, Loughborough University, UK

The challenges of globalization, new markets, changing demographics and new technologies are transforming the focus of construction leaders and require the implementation of new competitive strategies, forging of international alliances and the adoption of new practices. The industry needs to develop, implement and support the leadership required to successfully lead construction projects and organizations in the new construction environment. Against this background the Task Group's primary focus is on international collaborative research on leadership issues in construction, with an emphasize on project and organization leadership and in this context the Task Group's objectives are:

- to establish an international group to identify the issues facing construction leadership and to research the state of construction leadership and barriers for development
- to broaden the current research of construction leadership issues by involving industry representatives and experts from different regional background
- to raise the awareness of leadership issues within the construction industry and of the need for further research in this area.

## TG65

### Small Firms in Construction

Coordinator(s) • Dr. Shu-Ling Lu, University of Salford, UK  
• Assoc Prof Christian Koch, University of Aarhus, Denmark

Small construction firms pay an increasingly important part in improving the overall performance of the construction industry. As construction projects typically draw together both small and large firms in varying collaborations is acknowledged that also large firms' performances are impacted by their small supply chain partners' performance.

The successful management of small firms is often negatively influenced by their characteristics: limited staff capacity and capability, scarce time and resources for innovation, excessive influence by owner-managers, difficulty in raising finances and maintaining good cash flows. A challenge to the industry is the development of business strategies, organization of work, technologies and human resources that are appropriate to the characteristics and special needs of small construction firms in different country contexts. Against this background the Task Group aims:

- to bring together the experience and expertise of both researchers and practitioners who not have otherwise interacted
- to develop, share and disseminate appropriate research methodologies and management and organization theory and practice with regard to the successful management of small construction firms
- to encourage and enable new collaborative, multi-disciplinary research in this area.

Specific research objectives for the Task Group are:

- to identify the concept and scale of small construction firm activity in various country contexts
- to identify generic antecedents to the successful management of small construction firms, as well as discern country specific drivers and constraints
- to developing appropriate methodologies for the study of management of small construction firms.

# CIB Commissions' Scope and Objectives

**TG66**

## Energy and the Built Environment

Coordinator(s) • Jean Carassus, CSTB, France

Realizing that the fraction of total energy consumed in buildings exceeds 35%, that the building sector consumes approximately half of all electricity and that the sector is responsible for at least 33% of global CO<sub>2</sub> emissions, and also realizing that in recent years many countries have seen energy demand increase to a point where infrastructure and supply constraints have surfaced and that increasingly hot weather could lead to even higher energy prices and power cuts, the Task Group aims:

- to coordinate exchange of research activities in matters related to energy usage, impacts on greenhouse gas effects and conservation of energy, so that lessons learned can be shared and more effectively disseminated to stakeholders worldwide
- to address the necessary upgrading of energy efficiency of the existing building stock, and not only ways to produce excellent new buildings.

**TG67**

## Statutory Adjudication in Construction

Coordinator(s) • Peter Kennedy, Glasgow Caledonian University, UK  
• Michael C. Brand, University of New South Wales, Australia

Statutory adjudication is a relative new form of dispute resolution that has increasingly been introduced by governments worldwide since 1998 to address construction disputes. The systems operated in various jurisdictions vary throughout the world but they all have certain features in common. They have all been included within statutes, which have outlawed certain 'unfair' contract terms, they have included rigorous payment terms and they provide for rapid resolution of the dispute. Worldwide comparison of areas of difference will enable the relative effectiveness of each system to be measured. Data from existing sources is now becoming available, which will allow study of the efficacy of some system and inform the legislatures in each jurisdiction in such a way that they might be able to make informed decisions as they strive to ensure that their adjudication systems achieve the goals which they set for them.

Against this back ground the Task Group's scope would include the study of statutory adjudication systems in construction worldwide both in terms of empirical research and the development of case law and its objective will include:

- to establish a thriving international research and practice community within the field of statutory adjudication
- to produce a guide to the statutes which impact upon adjudication worldwide
- to produce an international review of statutory adjudication practice
- to produce a standardised data gathering model to allow international comparisons to be made.

**TG68**

## Construction Mediation

Coordinator(s) • Dr. Penny Brooker, University of Wolverhampton, UK  
• Assoc.Prof. Dr Suzanne J. Wilkinson, University of Auckland, New Zealand

Since the middle of the '90-ties there has been an increased use of Alternative Dispute Resolution (ADR) in general and, in many countries, of Mediation in particular. Globalisation of Construction has intensified the potential for conflict in construction projects particularly in relation to cultural, legal and contractual differences and has stimulated the development of Mediation. A country's ability to deal with disputes has developed into a significant consideration for international construction projects. The many initiatives worldwide have led to a developing legal jurisprudence concerning the validity of contract clauses and the statutory interpretation of rules.

The Task Group aims to address Construction Mediation on an international level by providing the forum to facilitate exchange and synthesis of research on the legal underpinning of mediation. It will identify emerging international practices within Construction Mediation and will seek solutions to the many legal and commercial challenges posed by them.

The Task Group's objective is to develop a thriving international research community within the field of Construction Mediation through involving experts to collaborate on distinct scholarly tasks.

**TG69**

## Green Buildings and the Law

Coordinator(s) • Julie Adshead, Salford University, UK

Global warming and climate change present common problems to the urban/built environment and it is essential that best practice is shared and that knowledge of the existing and prospective legal regimes is disseminated worldwide. Regulation of energy and environmental performance of buildings - both new and in use - is a particularly important new/emerging area of law. However, to date, no major international or regional comparative studies have been undertaken on the most appropriate legislative approaches to green buildings or of the impact of such regulation on the construction industry and on buildings in use. Furthermore, because of the emerging nature of the research, no established body of international legal scholars has yet been constituted within the field.

Against this background the objectives for this Task Group are:

- to establish, within CIB, the primary international academic research network in environmental law
- to act as a valuable resource for CIB Members and the broader research community
- to provide an overview of the state of the law governing green buildings across a number of key international jurisdictions
- to consider the legislative reaction in regulating the energy efficiency of buildings worldwide
- to conduct and publish a comparative analysis of the law in these areas.

# CIB Commissions' Scope and Objectives

**TG70**

## **Sustainable Design of Tall Buildings**

Coordinator(s) • Assoc.Prof.Dr. Faridah Shafii, University of Technology Malaysia

Given current practices the construction and use of today's world's building stock is one of the largest single contributors to worldwide carbon dioxide emission and with rapid urban developments worldwide, tall buildings will accumulatively account for a large fraction of this building stock. Tall buildings therefore can play a significant role in reducing the overall impact of buildings upon the environment and upon the world's climate. Against this background the Task Group objectives are:

- to review sustainability issues in tall buildings design and construction
- to examine the key issues, challenges and opportunities in implementing sustainability design of tall buildings
- to examine research in tall building design
- to develop sustainable design guidelines for tall buildings.

**TG71**

## **Research and Innovation Transfer**

Coordinator(s) • Prof Andrew N Baldwin, Loughborough University, UK

Innovation is imperative for financial growth and increased profits. Sustainable innovation processes need contributions from various stakeholders: the academic research community, research institutions, companies, industry organisations and funding agencies in the public and private sectors. Innovation needs a range of diffusion mechanisms and processes at corporate and industry level. There is no single model for success. Against this background the main objectives for this Task Groups are:

- to review recent changes in public policies with respect to innovation in construction.
- to consider recent models for effective innovation in product and service industries including the role and importance of 'innovation brokers'. This will include, but not be limited to, a review of successful mechanisms for collaboration between industry and academia, and the role of industry organisations
- to survey the views of leading construction organisations as to their current thinking with respect to identifying and developing innovations and innovative thinking.

**TG72**

## **Public Private Partnership**

Coordinator(s) • Prof Akintola Akintoye, University of Central Lancashire, UK  
• Prof Mohan Kumaraswamy, University of Hong Kong, China PR

Public-Private-Partnerships (PPP's) are joint ventures, in which business and government cooperate; each applying its strengths to develop a project more quickly, more efficiently or otherwise better than government could accomplish on its own. There are many ongoing studies concerning PPP's for infrastructure, facilities and services delivery in the construction environment that need to be coordinated to develop a body of knowledge across the world. This will allow various features of PPP (social, economic, political, cultural, etc.) to be captured and documented.

Against this background the Task Group The Task Group will address PPP on an international level by providing a forum to facilitate exchange and synthesis of research and by identifying emerging international practices concerning PPP in facilities and construction development. The Task Group's objective is to develop a thriving international research community within the field of public private partnership through involving practitioners and experts in the field to collaborate on distinct scholarly tasks.

**TG73**

## **R&D Programs in Construction**

Coordinator(s) • Prof Dr Geert Dewulf, University of Twente, The Netherlands

All over the world, large-scale construction R&D programs are undertaken that aim for structural performance enhancement of the sector, innovation, industry reform, process improvement and/or strengthening the sector's knowledge infrastructure. These programs all have to cope with finding the appropriate balance amongst others between: topdown steering and bottom-up innovation concepts, business and sector-wide demands and academic-driven interests, public and private interests and focus on frontrunners or a sector-wide approach.

Against this background the Task Group will establish a learning community by reflecting, monitoring and designing best ways to manage such programs and will:

- discuss and disseminate lessons learnt
- develop an overview of current practice and program management approaches
- review major collaborative programs of the past
- develop a sustainable network of academics and others to support new initiatives for such programs.

**TG74**

## **New Production and Business Models in Construction**

Coordinator(s) • Dr Mohammed Arif, University of Salford, UK

If offsite production and manufacture is to make a positive contribution to society, research is needed to identify the issues associated with related cultural, societal, economic and business models. Against this background the Task Group will focus on the necessity for a strong, coherent international research strategy to address theories as related to production and business models within the built environment disciplines and will develop a comprehensive built environment innovative offsite research roadmap.

# CIB Commissions' Scope and Objectives

**TG75**

**Engineering Studies on Traditional Constructions**

Coordinator(s) • Prof Dr Kenji Okazaki, Architectural Institute Japan

A large part of the world's population lives in vernacular or traditional houses that are built of adobe, brick, earth, stone and wood, that are non-engineered and that are extra vulnerable to earthquakes. This also applies to most historical constructions. Against this background the Task Groups aims to enhance the insight of the world's engineering community in the design and construction principles involved, to focus more of the attention of the world's practitioners and researchers on this area and to stimulate an international coordinated approach in research and technology development.

**W014**

**Fire**

Coordinator(s) • Prof.Dr. G. Hadjisophocleous, Carleton University, Canada

The objective of this Working Commission are:

- to provide an ongoing research focus and promote international collaboration for the development of a sound technical basis for fire safety engineering (FES) methods
- to promote fire safety engineering methods and their use with performance based codes
- to exchange fire safety technology input to the other CIB Commissions as appropriate
- to transfer fire safety engineering outputs internationally, including the standards community.

To meet those objectives W014:

- launches projects with well-defined scopes and limited time schedules
- publishes the output of its work as CIB Publications, in international journals and workshop or conference proceedings
- provides a forum for networking among its members
- organizes workshops with topics in the context of the work programme
- initiates the CIB co-sponsorship of conferences that serve the purpose of the commission
- facilitates its members to circulate information on ongoing and completed research projects and research publications.
- liaises with organizations that have similar interests.

**W018**

**Timber Structures**

Coordinator(s) • Prof.Dr.Ing. Hans Joachim Blass, University of Karlsruhe, Germany

The Commission aims to serve as an interface between code and standards writing bodies (such as CEN and ISO), design engineers and research engineers in the development of methods for the design of safe and economic timber structures, based on rational analysis and well-defined material properties that can readily be obtained by testing.

**W023**

**Wall Structures**

Coordinator(s) • Dr. Silvino Pompeu Santos, LNEC, Portugal

The Commission aims to provide a scientific basis for the preparation of design standards, building codes and recommendations with particular reference to the structures of load bearing walls, prefabricated panels, in-situ cast concrete and masonry.

**W040**

**Heat and Moisture Transfer in Buildings**

Coordinator(s) • Prof. Vasco de Freitas, University of Porto, Portugal

The Commission's objectives are:

- to explore the phenomena of heat, moisture, air and salts transfer in buildings, components and materials
- to formulate laws governing the physics involved
- to define, measure and discuss the hygrothermal properties of materials and building components
- to discuss the ventilation and hygrothermal behavior of buildings
- to apply the acquired knowledge to the design, execution and maintenance of buildings
- to transfer research information to knowledge of heat, moisture, air and salts

# CIB Commissions' Scope and Objectives

**W051**

## Acoustics

Coordinator(s) • Ir. Bart Ingelaere, BBRI, Belgium  
• Prof. Yiu Wai Lam, University of Salford, United Kingdom

The Commission aims:

- to exchange information and to stimulate the coordination of research on different problems concerning building and room acoustics
- to promote the consideration, research and application of acoustics in the construction sector
- to promote the transfer of knowledge on acoustics from research to practice
- to stimulate integrated design with other disciplines in the construction sector.

The Commission in its work will focus upon all manners of acoustics concerning buildings and the built environment, e.g.:

- Airborne and structure-borne sound insulation through buildings and buildings elements
- Sound propagation inside buildings and halls
- Insulation against traffic noise and other urban noise
- Measurement and prediction techniques
- Sound absorbing and diffusing materials
- Sound enhancement systems in buildings and halls
- Integrated designs

**W055**

## Building Economics

Coordinator(s) • Mr Gerard De Valence, University of Technology Sydney, Australia  
• Prof Dr Les Ruddock, University of Salford, UK

The Commission's objectives are to collect, study, evaluate, disseminate exchange and discuss the following issues and related items:

- Economic aspects of resource management and competitiveness, financing, innovation and development of the construction sector at the international, macro and micro levels concerning the design and construction process, the construction activities, renewal and use of buildings, built environment, the international building markets, and comparative conditions regarding financing, subsidising schemes and user cost regulations
- Economic evaluation in design and construction planning including quality, productivity and efficiency assessment, design optimisation and methods applied in the construction field such as cost-benefit, risk analysis, life-cycle costing, value engineering, cost and price indexes, comparative studies and forecasting methods
- Information systems applied in the assessment of buildings, construction and the environment considering knowledge based systems, computer-aided cost modelling systems for monitoring cost, quality and risk factors, and the development of economic data bases

**W056**

## Sandwich Panels

Coordinator(s) • Mr. Paavo Hassinen, Helsinki University of Technology, Finland

The focus of this Commission is on Lightweight Self-Supporting Sandwich Panels and related topics in the field of mechanical strength and building physics, including acoustics and fire. In this context the Commissions objective is;

- To exchange information and coordinate research programmes in all technical aspects of construction using light weight materials
- To prepare synthesised reports on matters of particular interest

**W062**

## Water Supply and Drainage

Coordinator(s) Prof. Karel De Cuyper, BBRI, Belgium

The Objectives of the Commission are:

- to report on research results, industrial developments and standardisation progress
- to stimulate concerted research actions between different research teams
- to coordinate the drafting of "states-of-the-art" for selected topics
- to draw up inventories of research and bibliographic lists

The Commission's Scope includes:

- Water supply systems and drinking water treatment (softening, heating etc.) inside buildings
- Water (waste and rainwater) drainage systems in buildings and individual waste water treatment

**W065**

## Organisation and Management of Construction

Coordinator(s) • Prof. Martin Sexton, University of Salford, UK  
• Dr. Kalle Kähkönen, VTT Building and Transport, Finland

The Objectives of the Commission are:

- to be the leading research and innovation focus for the organisation and management of construction
- to support the creation of construction practices and outcomes that equate to or exceed the best found in other industries, in terms of imagination, energy, effectiveness and efficiency
- to stimulate, facilitate and communicate research and innovation, stressing the integration essential for successful innovation in a complex environment

The Scope of W065 will cover all aspects of the organisation and management of construction. In particular the following broad themes will pervade many of its activities: Projects, Companies, Policy and Processes.

# CIB Commissions' Scope and Objectives

**W069**

## **Housing Sociology**

Coordinator(s) • Mrs. Katrin Paadam, Tallinn Technical University, Estonia

The Commission aims:

- to discuss theoretical and methodological topics and empirical research results in the field of housing sociology. In general this research area comprises sociological problems related to housing policies, distribution of housing and design and use of dwellings and residential areas
- to exchange and disseminate information on current or planned research projects and to promote and facilitate international research cooperation in housing sociologies, especially joint East-West projects

**W070**

## **Facilities Management and Maintenance**

Coordinator(s) • Assoc.Prof.Dr. Danny Then, Hong Kong Polytechnic University, China  
• Prof. Dr. Edward Finch, University Salford, UK

The Commission aims:

- to foster a deeper understanding of how our built environment influences human behavior, health and organizational productivity
- to promote the strategic and operational value of facilities management and asset maintenance in meeting emerging business challenges
- to forge closer links and collaboration between the financial, technical, sociological and operational aspects of facilities management and asset maintenance through an integrated resource management approach
- to disseminate the findings of research work on facilities management and asset management to a wider audience
- to provide a forum for the exchange of know-how and best practice in education, research and industry that addresses physical workplace and functional workspace demands
- to communicate the work of CIB W070 by publication of its symposium proceedings.

**W077**

## **Indoor Climate**

Coordinator(s) • Dr. Klaus Breuer, Fraunhofer Institut für Bauphysik, Germany

The Commission's Objectives are:

- to promote research aimed at a better understanding of the effects of indoor climate on people, so as to be able to derive the quantitative criteria required for thermal comfort and air quality, taking into account interactions between disciplines
- to stimulate and facilitate the international exchange of ideas
- to try to transfer knowledge to practitioners

**W078**

## **Information Technology for Construction**

Coordinator(s) • Assoc Prof. Robert Amor, University of Auckland, New Zealand

The Commission aims:

- to foster, encourage and promote research and development in the application of integrated IT throughout the life-cycle of the design, construction and occupancy of buildings and related facilities
- to proactively encourage the use of IT in Construction through the demonstration of capabilities developed in collaborative research projects
- to organise international cooperation in such activities and to promote the communication of these activities and their results

The object of W078's work is broad in terms of the design, construction and occupation and occupancy of constructed facilities, but primarily it relates to the integration and communication of data, information and knowledge in the facility's life cycle.

**W080**

## **Prediction of Service Life of Building Materials and Components**

Coordinator(s) • Dr. Ivan Cole, CSIRO, Australia  
• Dr. Jean-Luc Chevalier, CSTB, France

The Commission will consider the prediction of service life of building materials and components by identifying and developing systematic methodologies and areas for improvement of existing methodologies, by recommending new methodologies and by informing on the state-of-the-art.

It is envisaged that access to research on Service Life and Durability will be offered through the Internet. As well, guide lines will be prepared in regards to the use of different Service Life Prediction Methods, including the Factorial Method and Stochastic Methods and the Reliability Approach. Finally, concepts related to damage, dose-response and performance-in-time functions and their interrelations will be outlined.

**W083**

## **Roofing Materials and Systems**

Coordinator(s) • Dr. Ralph Paroli, NRCC-IRC, Canada

The Objectives of the Commission are:

- to develop a methodology for assessing the condition of in-place (i.e. existing) low-sloped roofing systems
- to determine the state-of-the-art with regard to design, manufacture, application, maintenance and disposal of sustainable roofing systems

# CIB Commissions' Scope and Objectives

**W084**

## **Building Comfortable Environments for All**

Coordinator(s) • Dr. Annalisa Morini, CNR-ITC, Italy

The Commission aims to support the design of a comfortable built environment, inside and outside residential buildings by:

- suggesting new measures and tools, including technical details, "assistive" technologies, furniture;
- enhancing the level of comfort, particularly way finding support, orientation help, safety measures;
- investigating examples of good practices for different typologies of building and external environments;
- specific aspects of design related to usability of buildings for disabled and aged people.

**W086**

## **Building Pathology**

Coordinator(s) • Prof. Sergio Croce, Politecnico di Milano, Italy  
• Prof. Vasco de Freitas, University of Porto, Portugal

W086 is essentially concerned with learning from past and current building pathologies and encouraging the systematic application of that knowledge to the design, construction and management of buildings.

Against this background the objectives of W086 are:

- to produce information which will assist in the effective management of service loss
- to develop and evaluate methodologies for assessment of defects and failures and consequential service loss
- to apply systematic approaches to the investigation and diagnosis of defects and failures in buildings of all types and at all stages of life
- to audit buildings in use to check the veracity of service loss prediction methodologies
- to promulgate findings to all those involved in the production and management of buildings.

**W089**

## **Building Research and Education**

Coordinator(s) • Prof Martin Betts, Queensland University of Technology, Australia  
• Prof Melvyn Lees, Birmingham City University, UK

The Commission plans to provide a central focus within CIB for the exchange of information between building research institutions and the educational institutions of the building professions, with emphasis on strengthening educational and research programmes at Universities and on training researchers, teachers and professionals. The Commission also provides a forum for the international community of building educators concerned with research, training and research applications.

The primary objectives of the Commission are:

- to provide exchange between professional educational institutions and building research institutions
- to exchange information between building educators (engineers, architects, constructors and planners) on the training of future building researchers
- to exchange information between building educators on the incorporation of current building research in the training of future building professionals
- to pay special attention to construction and planning programmes of developing countries

**W092**

## **Procurement Systems**

Coordinator(s) • Prof. Dr. Steve Rowlinson, Hong Kong University, China  
• Dr. Peter McDermott, University of Salford, UK

The Commission aims:

- to research into the social, economic and legal aspects of contractual arrangements, appointment systems and tendering procedures used in relation to construction projects
- to establish and comment upon the practical aims and objectives of contractual arrangements and to define the participants and their responsibilities
- to review areas of commonality and differences
- to formulate recommendations and the selection and effective implementation of project procurement systems
- to compare and contrast standard conventions for the various systems of project procurement generally and specifically
- to report and liaise with relevant CIB Working Commissions and Task Groups

**W096**

## **Architectural Management**

Coordinator(s) • Dr Matthijs Prins, Delft University of Technology, Netherlands  
• Prof Dr S. Emmitt, Loughborough University

The Commission's Objectives are:

- to determine where information related to architectural management lies and the means of retrieval, with particular regard to user requirements
- to establish the most effective ways in which designers may meet client needs
- to improve communication between procurement and implementation of the design process in order that supply may accurately reflect demand
- to seek to translate user requirements into architectural concepts and provision of tools for implementation
- to promote excellence in architectural management, practice and design
- to encourage the integration of design values in design and delivery practices.

# CIB Commissions' Scope and Objectives

**W098**

## **Intelligent and Responsive Buildings**

Coordinator(s) • Ir. Georges Klepfisch, Belgian Centre for Domotics & Immotics, Belgium  
• Prof. Derek Clements-Croome, University of Reading, UK

The Commission aims:

- to provide an international forum for discussion and critique on research, development and design activities related to intelligent architecture, technologies, systems and materials and their integration within the design, construction, operation and management of buildings
- to initiate and encourage research and to develop an internationally accepted framework, methods for evaluating performance and quality and analysis tools in support of the design and construction and operation process of Intelligent and Responsive Buildings
- to form a theoretical basis for the design and development of an intelligent and responsive architecture through advanced and emerging intelligent materials and technologies in conjunction with design principles for comfort, productivity and performance
- to obtain, synthesise, publish and disseminate information which provides technical support on advanced materials, systems, tools and technologies for the design, construction, use, operation and management of Intelligent and Responsive Buildings.

**W099**

## **Safety and Health in Construction**

Coordinator(s) • Prof Alistair Gibb, Loughborough University , UK

The Commission is committed to the advancement of safety and health of construction workers.

The tools necessary to accomplish this end include designing, preplanning, training, management commitment and the development of a safety culture.

A country's involvement with construction safety is influenced by factors like: varying labour forces, shifting economies, insurance rates, legal ramifications and technological development.

**W101**

## **Spatial Planning and Infrastructure Development**

Coordinator(s) • Mr. Stephen Brown, RICS Foundation, UK  
• Prof.Dr. Yasushi Asami, University of Tokyo, Japan

As the tidal wave of global trends such as borderless economy or global warming sweeps across the world, phrases such as “sustainability”, “partnership” and “urban renaissance”, are used to describe and explain responses and phenomena taking place in cities in different countries. There is a broad commonality of concerns around the world. These relate to those fundamental factors necessary for urban sustainability. In this context, the major concerns of W101 are follows:

- firstly, to explore and further understand both the similarities and diversities of the current issues that are being addressed as they relate to city planning and urban space, and explore ways in which the concepts of spatial planning and infrastructure development can be developed to be able to deliver the solutions required in different cities.
- Secondly, to discuss on how infrastructure should be rethought and re-examined in relation to sustainability, for instance, from disaster prevention point of view, and to discuss on the infrastructure of urban places on spatial terms for suitable urban form and structure.

By seeking to address these issues, the commission's goal is to contribute to:

- the achievement and maintenance of sustainable cities
- place making by cities
- effective urban regeneration
- the adoption of integrated planning systems

**W102**

## **Information and Knowledge Management in Building**

Coordinator(s) • Prof Dr Francesco Loforte Ribeiro, IST, Portugal  
• Prof Charles Egbu, University of Salford, UK

Information is an all-pervading ingredient in building, common to research and practice. By giving proper consideration to the flow of information, research results can be usefully translated into innovation and further adapted to provide the knowledge-base for best practice. In an environment in which the tools for making information available are developing at breakneck speed, it is necessary to manage the whole spectrum of information forms in a way that reflects the realities of decision-making in modern building practice.

In this context the Objective for the Working Commission is to cover concerns that are related to information and knowledge management, both theoretical and practical. Special points of attention are the following:

- interface between general information and the building process and especially the dysfunction in the flow of information between researchers and practitioners. The questions why research results are not put into practice, and how research results and feedback information can be converted and refined to be of practical use will be considered
- contemporary information systems bearing on the information needs of the building industry.

# CIB Commissions' Scope and Objectives

**W104**

## Open Building Implementation

Coordinator(s) • Prof.Dr. Stephen Kendall, Ball State University, USA  
 • Prof.Dr. Beisi Jia, University of Hong Kong, China  
 • Prof.Dr. Kazunobu Minami, Shibaura Institute of Technology, Japan

Open Building relates to a number of different but related ideas about the making of environment, for instance the ideas:

- of distinct Levels of intervention in the built environment, such as those represented by urban design and architecture;
  - that users / inhabitants may make design decisions as well as professionals;
  - that, more generally, designing is a process with multiple participants also including different kinds of professionals;
  - that the interface between technical systems allows the replacement of one system with another performing the same function
- CIB W104 seeks to formulate theories about the built environment and to develop methods of design and building construction compatible with the Open Building Implementation concept.

Against above background the three basic objectives of the Commission are:

- to increase awareness of the principles of Open Building among professionals who shape the built environment, and among the people who live in that built environment.
- to support initiatives at national, regional and local levels that improve the efficacy of building construction and facility adaptation following Open Building methods.
- to be a platform for research and information dissemination among professionals committed to improving Open Building practices and methods.

**W107**

## Construction in Developing Countries

Coordinator(s) • Prof Alfredo Serpell, Catholic University of Chile  
 • Prof Dr Stephen Ogunlana, Heriot-Watt University, UK  
 • Prof.Dr. P.D. Rwelamila - UNISA, South Africa

The aim of this Commission is to study and effectively disseminate the possible ways and means by which the construction industry of developing countries can be continuously improved to enable them to fulfill the tasks required of them in the nations' drive to achieve social and economic progress.

The objectives of the Commission are:

- to undertake research into areas relating to the construction industry in developing countries, in order to understand its nature, strengths, weaknesses and needs and possible improvement measures.
- to disseminate useful research findings and best practices and monitor and facilitate their implementation
- to provide a forum for the exchange of experiences and information among construction researchers and administrators in developing countries
- to serve as a link between construction researchers and administrators in developing countries and their counterparts in industrialised countries, as well as international agencies involved in the field of construction industry development.

**W108**

## Climate Change and the Built Environment

Coordinator(s) • Jean-Luc Salagnac, CSTB, France

All aspects of building performance, where these are affected by climate change, would come within the scope of the Commission and its membership would therefore be expanded to embrace not only environmental researchers but also those dealing with materials, structures and construction operations. There would be need to be strong interactions with other Working Commissions dealing with these specialist areas.

The Commission Objectives are:

- to provide a forum for establishing the exchange of weather data, climate change scenarios, research findings and formulating joint research projects on the impacts of climate change on construction and the built environment, and measures to anticipate and ameliorate such impacts
- to facilitate the transfer of data and research findings to practitioners, in particular to influence building design and adaptation, the revision of relevant standards, codes and specifications so that these reflect potential impacts of climate change.
- to be a vehicle through which funding for collaborative research into the impact of climate change on the built environment might be secured.

# CIB Commissions' Scope and Objectives

## W110

### Informal Settlements and Affordable Housing

Coordinator(s) • Eng. Liana Arrieta de Bustillos, Centroccidental Lisandro Alvarado University, Venezuela  
 • Prof. Happy Ratna Santosa, Institut Teknologi Sepuluh Nopember, Indonesia  
 • Dr Amira Osman, University of Pretoria, South Africa

The objectives of W110 are to define how to create sustainable livelihood in the informal settlements incorporating the inhabitants participation, and how the stakeholders can transfer the technology to assist the community in the development or improvement of the settlement physical, social and economic conditions. The detailed objectives are:

- to investigate informal settlements, that has not previously been adequately researched and propose for their improvement to create sustainable livelihoods incorporating people participation.
- to transfer technology, education and technical information and guidance on healthy settlements and housing and social economic improvements, from the universities and scientific institutes, the NGOs or other stakeholders to the communities.
- to create an international focal point for the collection, organisation and dissemination of research results and demonstration related to enabling the provision of affordable housing and informal settlements world wide.
- the scope of the research on informal settlements and housing include; government regulations, informal settlements and housing policies and programmes, social-economic issues and people participations, housing design, housing delivery system, building technology transfer and guidance, land development, site planning and housing for special need groups, such as elderly, women widows, disaster victims.

## W111

### Usability of Workplaces

Coordinator(s) • Prof. Keith Alexander, University of Salford, UK

Within the scope of the commission there is a focus on the concept of usability of workplaces, as applied in a range of building types, including commercial buildings and buildings for healthcare and education.

Research themes within this scope include:

- Usability concepts, tools and methods
- Economy, efficiency and effectiveness
- Context, culture, situation, performance, experience.

The Commission's objectives are:

- to conduct a series of case studies and associated workshops, involving users, practitioners and researchers in a programme of action research
- to develop concepts of usability for application in practice
- to promote, develop and share methods, processes and techniques for the evaluation of the built environment in use.

## W112

### Culture in Construction

Coordinator(s) • Dr Wilco Tijhuis, University of Twente, Netherlands  
 • Prof Dr Anita Liu, University of Loughborough, UK

The scope for this Commission reflects the array of important business concerns deriving directly from underpinning culture – organizational climate, ethics, corporate social responsibility (CSR) and organizational citizenship behavior (OCB). The construction industry itself as field of interest is considered on an international, national and local scales, focussing on the processes, (project-) experiences, and the parties involved. Given the dynamism, the scope is maintained under constant review. Against this background the objectives of W112 are:

- to continue to research National Cultures and Organizational Cultures relating to construction worldwide to maintain and extend the 'Inventory of Culture in Construction'
- to extend the methods of research employed to encompass more longitudinal approaches to enable evolutionary aspects of culture to be included in investigations
- to research into the related cultural topics of organizational climate, ethics, CSR, and OCB; and other related topics to provide a more comprehensive understanding of culture and its consequences
- to enhance relationships with other CIB Commissions, and beyond, to disseminate findings and stimulate further collaborations and investigations.

## W113

### Law and Dispute Resolution

Coordinator(s) • Paul Chynoweth, University of Salford, UK

The Commission's primary function is to coordinate the identification of and response to the multitude of emerging legal challenges faced by the construction and property industries worldwide. In this context the Commission's objectives are:

- to establish a thriving international research community in the fields of law and dispute resolution
- to contribute to the wider building and construction research agendas through encouraging the active engagement of legal scholars with other specialist in the field
- to coordinate efforts to identify and address emerging legal challenges faced by the global construction and property industries through building a coalition of stake-holders from industry, the professions and academia
- to generate interest in the application of law in an international construction and property context amongst legal specialists in the legal professions and law faculties worldwide
- to increase the understanding of obstacles to effective transnational construction operations and building performances management by facilitating the development of comparative legal methodologies and research projects.

# CIB Commissions' Scope and Objectives

**W114**

## **Earthquake Engineering and Buildings**

Coordinator(s) • Dr Taiki Saito, BRI, Japan

The Commission aims to promote communication amongst researchers and engineers worldwide in support of the implementation and use of harmonized design guidelines for sustainable buildings against earthquake, for which building owners can set target performances for buildings; not only to the allowable damages that prevent buildings from collapsing, but also in order to maintain fully operational conditions after buildings have been subject to severe external design earthquake loads that may occur just once or even less during their planned service life.

During 2007 - 2010 a focus will be on supporting the worldwide dissemination of responsive control techniques, including the promotion of the application of such techniques in developing countries with a high risk for earthquake disasters. For this purpose the Commission will organize symposia and publish guidelines in reports, books and other media.

**W115**

## **Construction Materials Stewardship**

Coordinator(s) • Prof Dr Abdol R Chini, University of Florida, USA  
• Assoc Prof John B Storey, Victoria University of Wellington, New Zealand  
• Prof Dr Frank Schultmann, Karlsruhe Institute of Technology, Germany

The Commission aims to:

- drastically reduce the deployment and consumption of new non-renewable construction materials, to replace non-renewable materials with renewable ones whenever possible, to achieve equilibrium in the demand and supply of renewable materials and ultimately to restore the renewable resource base
- carry out these tasks in ways to maximize positive financial, social and environmental and ecological sustainability effects, impacts and outcomes.

**W116**

## **Smart and Sustainable Built Environments**

Coordinator(s) • Assoc.Prof Dr. Jay Yang, Queensland University of Technology, Australia  
• Dr Andy Dobbeltstein, Delft University of Technology, The Netherlands

The Commission will focus on the integrated development of both smart and sustainable aspects of built environments and will drive high performance and innovative solutions towards enhanced sustainability. It will follow multi-disciplinary approaches that are based upon functional usage of and interaction with natural environments. Against this background the Commission's mission is:

- to promote best practices of integrated development of smart and sustainable built environments with knowledge transfer and benefits to all stakeholders.

The Commission's objectives are:

- to encourage global networking, foster awareness and promote understanding of smart technologies and sustainability issues in built environments
- to identify, collect, create, discuss, evaluate and disseminate information and knowledge on strategies and best practices for developing smart and sustainable buildings and infrastructure
- to analyse, develop and apply appropriate knowledge and transfer this to stakeholders
- to promote and facilitate international collaborative research, consultancy and professional education in this field.

**W117**

## **Performance Measurement in Construction**

Coordinator(s) • Prof Dr Dean Kashiwagi, Arizona State University, USA  
• Prof Charles Egbu, University of Salford, UK

The need to understand and appropriately benchmark and use performance data, together with the consequences of non and inappropriate use are essential for the development of the construction industry worldwide. Against this background the commission's objectives are:

- to explore the optimal uses of performance information in the built environment
- to create a worldwide resource center of knowledge of proven methods for implementing and sustaining performance metrics in an organization or in the industry
- to develop performance measurements as appropriate for different countries by engaging researchers and practitioners worldwide
- to support researchers, scholars and practitioners and like-minded individuals and organizations in their quest to improve their understanding and awareness of Benchmarking Construction Performance Data.