CIB W078 & MC4T Conference Program

30 September
2:00 – 8:30 pm  Conference Registration
5:00 – 6:30 pm  W078 Committee Meeting
6:30 – 8:00 pm  Ice Breaker Cocktail

1 October
8:00 AM – 5:00 pm  Conference Registration
8:30 – 9:30 am  Opening Ceremony
9:30 – 10:15 am  Keynote Speech-I
   Prof. Thomas Froese
   University of British Colombia
10:15 – 11:00 am  Keynote Speech-II
   Prof. Stuart Green
   University of Reading
11:00 – 11:15 am  Coffee Break
11:15 – 12:45 am  Paper Presentations (Parallel Sessions-1)
12:45 – 2:00 pm  Lunch
2:00 – 3:30 pm  Paper Presentations (Parallel Sessions-2)
3:30 – 3:45 pm  Coffee Break
3:45 – 5:15 pm  Paper Presentations (Parallel Sessions-3)
6:00 – 8:30 pm  Welcome Cocktail

2 October
8:30 – 9:15 am  Keynote Speech-III
   Prof. Burcu Akinci
   Carnegie Mellon University
9:15 – 9:30 am  Coffee Break
9:30 – 11:00 pm  Paper Presentations (Parallel Sessions-4)
11:00 – 11:15 am  Coffee Break
11:15 – 12:45 am  Paper Presentations (Parallel Sessions-5)
12:45 – 2:00 pm  Lunch
2:00 – 3:30 pm  Paper Presentations (Parallel Sessions-6)
3:30 – 3:45 pm  Coffee Break
3:45 – 5:15 pm  Paper Presentations (Parallel Sessions-7)
8:00 PM – 11:30 pm  Conference Gala Dinner

3 October
9:00 – 10:30 am  Paper Presentations (Parallel Sessions-8)
10:30 – 10:45 am  Coffee Break
10:45 – 12:15 pm  Paper Presentations (Parallel Sessions-9) &
   REEB Workshop - Building a road map for research on
   ICT for energy-efficient buildings
12:15 – 2:00 pm  Lunch
Parallel Sessions

Parallel Sessions 1
1 October, Thursday - 11:15 – 12:45 am

CIB W078 Session - Model Based Management Tools I
Session chair - Robert Amor

A unified construction project management area
D. Ye, T. Froese

Analyzing Capacity of BIM Tools to Support Data Use across Project Lifecycle
J. Lucas, W. Thabet, D. Bowman

An Integrated 3D Simulation Framework for Earthwork Processes
Y. Ji, A. Bormann, E. Rank, J. Wimmer, W. A. Günthner

A product/process model-based system to produce work instructions
C. Mourgues, M. Fischer

CIB W078 Session - Architectural Design
Session chair – Peter Katranuschkov

User driven innovative building design
P. Christiansson, K.B. Sørensen, K. G. Steffensen, K Svidt

Configuration with architectural objects in industrialised house-building
F. Wikberg, A. Ekholm, P. Jensen

Pattern Based 3D Modeling Environment
D. Chitchian, S.I. Sariyildiz

Redefinition of geometrical components to specify kinematically undetermined behaviour
H. Hofmeyer, F. Gelbal

MC4T Session – Construction industry competitiveness
Session chair – Zeynep Sözen

Public procurement of architectural and engineering services: fee and quality
J. Sporrong, J. Bröchner & A. Kadefors

The business potential of Turkish contractors in international construction industry
E. Tas & P. Irlayici

Improving quality to ensure competitiveness by a change management system
G.O. Alptekin

A conceptual model to determine the role of suppliers in generalizing innovations in the construction industry
Y. Erbil & N. Akincitürk

Implications of culture in dispute resolution in international construction joint ventures
P. Ates & H. Giritli
Parallel Sessions 2:
1 October, Thursday- 2:00 – 3:30 pm

CIB W078 Session - Model Based Management Tools II
Session chair – Davood Chitchiann

Technical Challenges for Integrated Design and Delivery Solutions
R. W. Amor

A Declarative Approach to Cross-Domain Model Analysis
U. Hartmann, P. von Both

Lightweight Capture of As-Built Construction Information
E. W. East, N. Nisbet, J. Wix

Teaching Integrated Scope-Cost Methods with Model-based Tools
F. Peterson, M. Fischer and T. Wingate, O. Seppänen, T. Tutti, R. See

CIB W078 Session - Visualization and simulation I
Session chair – Walid Thabet

ForBAU – The virtual construction site project
A. Borrmann, Y. Ji, I.-C. Wu, M. Obergrießer, E. Rank, C. Klauert, W. Günthner

Considering Quality Aspects for Construction Scheduling using Constraint-Based Simulation
U. Beissert, M. König, H.-J. Bargstädt

Using discrete-event simulation for process modeling: Case of work structuring of asphalt highway construction operations
G. Polat, Y. Buyuksaracoglu

Development of Hybrid Simulation and Genetic Algorithms System for Solving Complex Crew Allocation Problems
A. Al-Bazi, N. Dawood, Z. Khan

MC4T Session - Innovative approaches to construction I
Session chair – Jan Bröchner

The contemporary methods of Waqf land development in Malaysia
S. Mokhtar & M. Ibrahim

BIM implementation for an architectural practice
Y. Arayici, P. Coates, L. Koskela, M. Kagioglou, C. Usher & K. O’Reilly

Vocational language needs of European construction companies

A review of utilization of soft computing methods in construction management
S.U. Dikmen, O. Ates, R. Akbiyikli & M. Sonmez
Parallel Sessions 3  
1 October, Thursday - 3:45 – 5:15 pm

**CIB W078 Session - Model Based Management Tools III**  
**Session chair - Per Christiansson**

IFC Support for Model-based Scheduling  
*M. Weise, T. Liebich, J. Tulke, P. Bonsma*

Extended model-based master scheduling for building projects using advanced line of balance  
*C.E. Firat, D. Arditi, J.P. Hämäläinen, J. Kiiras*

A Pattern-Based Approach for Facilitating Schedule Generation and Cost Analysis in Bridge Construction Projects  
*I.C. Wu, A. Borrmann, E. Rank, U. Beißert, M. König*

*H.U. Gokce, K.U. Gokce, D. Browne, K. Menzel*

**CIB W078 Session - Visualization and simulation II**  
**Session chair - Thomas Liebich**

Utilizing 4D Technology in Supply Chain Management  
*J. Porkka, J. Kojima, K. Rainio, K. Kähkonen*

Drawing Architecture using Manga Techniques  
*Y. Qu, M.A. Schnabel*

An Innovative Approach for Generation of Virtual Construction Model and a Time Location Plan for Road Construction Projects  
*R. K. Shah, N. Dawood, J. Dean*

Agent-Based Modeling of User Movements: A Case Study in a Museum Building  
*G. Cagdas*

**MC4T Session - Innovative approaches to construction II**  
**Session chair – Bilge Erdogan**

A model of leadership in architectural offices for tomorrow  
*E. Kasapoglu*

Integrated learning in a virtual construction management services company (VCMSC)  
*W. Alsakini, J. Kiiras & P. Huovinen*

A framework for analyzing the impact of operational coefficients on excavation productivity  
*A. Panas & J.P. Pantouvakis*

Innovation value chain in construction  
*B. Ozorhon, C. Abbott & G. Aouad*
Parallel Sessions 4
2 October, Friday - 9:30 – 11:00 pm

CIB W078 Session - Building Information Modeling I
Session chair – Charles Woodward

Automated construction schedule creation using project information model
A. Mrkela, D. Rebolj

Check-mate: Automatic constraint checking of IFC models
R. Niemeijer, B. de Vries, J. Beetz

Developing a multidisciplinary process view on IFC standardization
M. Laakso

An Assessment of Building Information Modeling Value and Use
B. Becerik-Gerber & S. Rice

CIB W078 Session - Information and knowledge management I
Session chair - Jesus de la Garza

Ontology-based Dynamic Process Support on the Example of Defect Management
P. Katranuschkov, K. Rybenko & R. J. Scherer

A web-based system for quality inspection and defect management of industrial building construction
N. Forcada, E. Margalida, A. Fuertes, M. Casals, M. Gangoellis, X. Roca, M. Macarulla

Analysis of Building Performance Data for Energy-Efficient Building Operation
A. Ahmed, J. Ploennigs, Y. Gao, K. Menzel

Building Product Catalogues on the Semantic Web
J. Beetz, B. de Vries

MC4T Session - Best practices in international construction I
Session chair – Ahmad Hadavi

Construction and development: analyzing the construction sector in Turkey and EU countries
B. Ilhan & H. Yaman

Recent trends in tall building design
A. Sev & A. Ozgen

An effective site organization structure for fast-track construction projects
S.U. Dikmen & R. Akbıyıkli

Convergence of construction costs in the single European market
C. Langston & R. Best
Parallel Session 5
2 October, Friday - 11:15 – 12:45 am

CIB W078 Session - Building Information Modeling II
Session chair – Thomas Froese

Modelling of buildings and projects with utility assessment
Č. Jarský

Maintenance Scheduling based on the Analysis of Building Performance Data

Software architecture for mobile mixed reality and 4D BIM interaction
M. Hakkarainen, C. Woodward, K. Rainio

BIM to CAFM: An Investigation of Adapting a Building Information Model to a Legacy Computer Aided Facility Management
O. Ozaner, M. J. Clayton, C. Nome

CIB W078 Session - Information and knowledge management II
Session chair – Burcu Akinci

Specifications for a Social and Technical Environment for Improving Design Process Communication
R. Senescu, J.R. Haymaker

Assessing organizational semiotics for IT systems design: improving information exchange processes across construction project stakeholders
W. Collinge, C.F. Harty, K. Liu, Y. Tang

BPM-driven Construction Client Requirements Change Management
A.K. Jallow, P. Demian, A.N. Baldwin, C.J. Anumba

Foundation for development of computable rules
E. Hjelseth

MC4T Session - Best practices in international construction II
Session chair – Begum Sertyesilisik

Factors influencing rent arrears in public housing in Malaysia: a proposed research framework and methodology
N. A. Salleh, N. A. Yusof & A. G. Salleh

Better informed decisions through evidence-based design
R. Codinhoto, S. Wu & M. Kagioglou

Exploring the Issues for Future of Construction IT
B. Erdogan, C. Abbott & G. Aouad

Creating a digital SME community in the Irish construction industry
A.V. Hore, R.P. West & A. Redmond
Parallel Session 6  
2 October, Friday - 2:00 – 3:30 pm

**CIB W078 Session - Data acquisition and storage**  
Session chair – Nashwan Dawood

A comparative study on the use of laser scanners for construction quality control and progress monitoring purposes  
G. Atasoy, P. Tang & B. Akinci

Improving highway asset management with RFID technology  
J. de la Garza, N. J. Yates, C. A. Arrington

Assessing the Need for Storing Data on Radio Frequency Identification (RFID) Tags  
E. Ergen, G. Guven

Leveraging Materials Tracking Technology to Improve Industrial Project Performance  
D. Grau, C. H. Caldas, C. T. Haas, P. M. Goodrum, J. Gong

**CIB W078 Session - Information and knowledge management III**  
Session chair - Janne Porkka

Creating new ways of learning in architecture and building: MACE Project  
A. Fuertes, M. Casals, N. Forcada, M. Gangolells, X. Roca

Interoperability Challenges of an Engineering Software Provider  
T. Rácz, Thomas Olofsson

Implementation of the Methodology for Semi-Automatic Building Energy Performance Simulation  
V. Bazjanac

A Data-Warehouse Architecture supporting Energy Management of Buildings  
H. U. Gokce, Y. Wang, K. U. Gokce, K. Menzel

**MC4T Session - Health and safety**  
Session chair – William Swan

The dynamic model of the cyclical style of safety management  
T. Chinda

An investigation of Turkish construction workers’ knowledge on health and safety practices  
G. Arslan & S. Kivrak

Construction accident in relation to safety factor in design – a proposed model  
A. C. Ahmad, I. Bahari, M. F. M. Zain, A. Jaafar & O. M. Piah

Organizational structure of health and safety management system: a case study in Turkey  
R. Akbıyıklı, S. U. Dikmen, D. Eaton & S. Korkmaz
Parallel Session 7
2 October, Friday - 3:45 – 5:15 pm

CIB W078 Session - Managing IT strategies I
Session chair - Vlademir Bazjanac

Business-driven IT Strategy in Multi-Business and Multi-National Companies
R. Myllymäki

The Drivers and Barriers for the Development and Applications of Project Collaboration Systems in the Chinese Construction Industry
Z. Ren, T. M. Hassan, F. Yang

Influences on the adoption of BPM/BIM: an Australian perspective
G. Brewer, T. Gajendran, C. Beard

Progression in IT adoption and stage of IT maturity in the construction sector of Singapore
B. H. Goh

CIB W078 Session - Information and Knowledge management IV
Session chair - Bill East

Classification of Building Element Functions
K. A. Joergensen

Factors Affecting the Learning Process of Professionals in Architectural Design Firms
G.B. Ozturk-Barlak, D. Arditi, H.M. Gunaydin, S. Kale, I. Yitmen

Characterizing the Non-Value-Added Relocation of Non-Bulk Components on Storage Yards
D. Grau

Developing a forecasting model for the prediction of inflation rates for use in life cycle cost analysis
T. Celik, Y. Baalousha, F. Ibisevic

Identification of Reusable Information in Construction Firms
Z.L. Ma, N. Lu

MC4T Session - Sustainable Construction
Session chair – Gül Polat

Comparative review of widely used building environmental assessment tools and suggestions for developing countries
A. Sev

Causes of materials waste in the Palestinian construction industry
A. Enshassi1, S. El-Moghany, P. E. Mayer & J. Zimmermann

Conflicting Sustainable Development Drivers and Client Interventions: A Case Study of the Elevate SME Supply Chain
W. Swan, R. Stewart & N. Naimuddin
Parallel Session 8
3 October, Saturday - 9:00 – 10:30 am

CIB W078 Session - Managing IT Strategies II
Session chair – David Grau

Cultural analysis for ICT integration: A single case study analysis of a construction project
T. Gajendran, G. Brewer

A Theoretical and Practical Assessment of Open Source Development and Dissemination of Construction IT Solutions
T. Hartmann, N. Hartmann

Factors Supporting Information and Communication Technologies on Construction Projects
D. Zuppa & R.R.A. Issa

A case study on the strategic impact of information technology in the Turkish construction industry
P. Irlayici, E. Tas

CIB W078 Session - Communication and collaboration
Session chair - Nuria Forcada

Engineering communication - current view on past and future
R. Klic, M. Dolenc, Ž. Turk

The Future Scenario of Creating a Digital SME Community in the Irish Construction Industry
A. Hore, R.P. West, A. Redmond

Designing IT services for the construction industry. Towards a selection methodology for validation techniques.
A. Guerriero, L. Johannsen, S. Kubicki

Semantic tags for collaboration in construction formalized within a social network framework
I. Mutis
Parallel Session 9
3 October, Saturday - 10:45 – 12:15 pm

CIB W078 Session - Managing IT strategies III
Session chair – Timo Hartmann

Exploring Context-Awareness in the construction logistics services delivery
B. Omar, S. Abu Hassan, T. Ballal

A review of the artificial intelligence applications in construction dispute resolution
D. Ilter, A. Dikbas

Business Benefits Framework of Enterprise Systems in Construction: An Exploratory Factor Analysis
O. Tatari, M.J. Skibniewski

The impact of information technology in facilitating communication and collaboration in Libyan public organisations- a literature review
S. Bezweek, C. O. Egbu

CIB W078 & MC4T Session – Sustainability
Session chair - Ivan Mutis

Enabling sustainability through SOA within the A/E/C-FM domain
A. Dikbas, P. Ercoskun, K. Ercoskun

A concept for IT-supported carbon neutral renovation
H. Yin, M. Otreba, L. Allan, K. Menzel

ICT for energy efficiency: The case for smart buildings
J. Ye, T. M. Hassan, C. D. Carter, A. Zarli

Predicting the significance of environmental issues in construction operations
G. Polat & Y. Tatar

REEB Workshop - Building a road map for research on ICT for energy-efficient buildings
Session chair - Raimar Scherer