

CONVR 2010 (10th International Conference on Construction Applications of Virtual Reality 2010)

Time Table

Sendai International Center, Sendai, Japan

Date	Time	Room A (Shirakashi 1)	Room B (Meeting room 7)	
DAY0	3-Nov	19:00	Reception (Sendai Tokyu Hotel)	
DAY1	4-Nov	10:00-12:10	Opening Session Keynote Speech(1) : Prof. Kincho H. Law Keynote Speech(2): Prof. Nashwan Dawood	
		12:10-13:00	Lunch [Sponsor exhibition will start in Room C(Shirakashi2)]	
		13:00-14:00	Session 1-A: Mixed Reality in AEC	Session 1B: Structural Design in VR
		14:00-14:20	Coffee Break [Sponsor Exhibition in Room C(Shirakashi2)]	
		14:20-16:00	Session 2-A: BIM and Process Modeling (1)	Session 2-B: 3D Scanning and Modeling
		16:00-16:20	Coffee Break [Sponsor Exhibition in Room C(Shirakashi2)]	
		16:20-17:40	Session 3-A: BIM and Process Modeling (2)	Session 3-B: Simulation and Visualization (1)
		17:40	Bus departure for Banquet	
		19:00-21:00	Banquet at Shokeikaku	
DAY2	5-Nov	9:00-10:20	Session 4-A: Augmented Reality in AEC	Session 4-B: Simulation and Visualization (2)
		10:20-10:40	Coffee Break [Sponsor Exhibition in Room C(Shirakashi2)]	
		10:40-12:20	Session 5-A Game Engine and Education	Session 5-B: Simulation and Visualization(3) / User Interface
		12:20-13:10	Lunch [Sponsor Exhibition in Room C(Shirakashi2)]	
		13:10-14:00	Keynote Keynote Speech(3): Prof. Feniosky Peña-Mora	
		14:00-14:20	Coffee Break [Sponsor exhibition in Room C(Shirakashi2)]	
		14:20-15:40	Session 6-A : Operation and Tele-Existence	Session 6-B : Environments in VR
		15:40-16:00	Coffee Break	
16:00-16:35	Closing Session			

CONVR 2010 (10th International Conference on Construction Applications of Virtual Reality 2010) Program

November 4-5, 2010
Sendai International Center, Sendai, Japan

Room A (Shirakashi 1)

Room B (Meeting room 7)

DAY0	3-Nov 19:00	Reception (Sendai Tokyu Hotel)
DAY1	4-Nov 10:00-12:10	Opening Session
		Session Chair: Prof. Koji Makanae (Miyagi University) Prof. Nobuyoshi Yabuki(Osaka University)
	10:00-10:10	Opening (Prof. Koji Makanae, Miyagi University Japan)
	10:10-11:00	Keynote Speech(1): Prof. Kincho H. Law (Stanford University, USA) "Emerging Applications of Computing, Information and Communication Technologies in Architectural and Civil Engineering"
	11:00-11:50	Keynote Speech(2): Prof. Nashwan N. Dawood (Teesside University, UK) "Building Information Modelling (BIM): A Visual & Whole Life Cycle Approach"
	11:50-12:10	[Sponsor's paper] UTILIZATION OF VR TECHNOLOGY IN HIGHWAY SAFE DRIVING EDUCATION Tsukasa Agatsuma (FORUM8 Co.,Ltd., Japan), Ken Nakamura and Toru Nishimura (East Nippon Expressway Co. ,Ltd., Japan)
	12:10-13:00	Lunch [Sponsor exhibition will start in Room C(Shirakashi2)]

Room A (Shirakashi 1)

Room B (Meeting room 7)

13:00-14:00 Session 1-A: Mixed Reality in AEC

Session Chair: Dr. Souheil Soubra (CSTB, France)

MIXED REALITY FOR MOBILE CONSTRUCTION SITE
VISUALIZATION AND COMMUNICATION

Charles Woodward, Mika Hakkarainen, Otto Korkalo, Tuomas Kantonen, Miika Aittala, Kari Rainio and Kalle Kahkonen(VTT Technical Research Centre of Finland, Finland)

A PROJECTIVE MOBILE DEVICE FOR PRESENTING
LOCATION-BASED BUILDING INFORMATION IN A
CONSTRUCTION SITE

Kai Chen Yeh, Meng Han Tsai and Shih Chung Kang (National Taiwan University, Taiwan)

RESOLVING INCORRECT VISUAL OCCLUSION IN
OUTDOOR AUGMENTED REALITY USING TOF CAMERA
AND OPENGL FRAME BUFFER

Suyang Dong and Vineet R. Kamat (University of Michigan, USA)

Session 1B: Structural Design in VR

Session Chair: Prof.Hans-Joachim Bargstädt
(Bauhaus-University Weimar, Germany)

VIRTUAL MODEL OF STRUCTURAL STEEL
CONSTRUCTION USING COSYE FRAMEWORK

Amin Alvanchi, Reza Azimi (University of Alberta, Canada), SangHyun Lee (University of Michigan, USA) and Simaan M. AbouRizk (University of Alberta, Canada)

A REINFORCING BAR DESIGN AND CONSTRUCTION
SUPPORT USING VR AND 3D CAD

Yasuo Fujisawa, Shinichiro Sakashita (Yachiyo Engineering Co.,Ltd., Japan) and Nobuyoshi Yabuki (Osaka University, Japan)

DEVELOPMENT OF A CONSTRUCTION PLANNING TOOL
BY INTEGRATION OF APPLICATION DATA

Takanori Terashima, Nami Amarume, Koji Makanae (Miyagi University, Japan) and Nashwan Dawood (Teesside University, UK)

14:00-14:20 Coffee Break

[Sponsor exhibition in Room C(Shirakashi2)]

Room A (Shirakashi 1)

Room B (Meeting room 7)

14:20-16:00 Session 2-A: BIM and Process Modeling (1)

Session Chair: Prof. Simaan M. AbouRizk
(University of Alberta, Canada)

INTUITIONISTIC APPROACH TOWARD CAPTURING AND
MODELING DESIGN REQUIREMENTS

Madalina Wierzbicki-Neagu and Clarence W. de Silva (University
of British Columbia, Canada)

COORDINATION AND VISUALIZATION OF DISTRIBUTED
SCHEDULES IN THE CONSTRUCTION SUPPLY CHAIN: A
POTENTIAL SOLUTION

Mohamad Kasseem, Nashwan Dawood (Teesside University, UK),
Claudio Benghi (Northumbria University, UK), Mohsin Siddiqui
(King Fahd University of Petroleum and Minerals, SAU) and
Donald Mitchell (University of Bath, UK)

4D WORKSPACE CONFLICT DETECTION AND ANALYSIS
SYSTEM

I-Chen Wu and Yen-Chang Chiu (National Kaohsiung University
of Applied Sciences, Taiwan)

DEALING WITH BIASED RELIABILITY OF ON SITE DATA
FOR THE SIMULATION OF CIVIL ENGINEERING
PROCESSES

Karin Ailland and Hans-Joachim Bargstädt (Bauhaus-University
Weimar, Germany)

Session 2-B: 3D Scanning and Modeling

Session Chair: Dr. John C. Hildreth
(University of North Carolina, USA)

SEMI-AUTOMATIC 3D RECONSTRUCTION OF PIECEWISE
PLANAR BUILDING MODELS FROM SINGLE IMAGE

Chen Feng, Fei Deng (Wuhan University, China) and Vineet R.
Kamat (University of Michigan, USA)

SHAPE MEASUREMENT PLANNING OF OUTDOOR
CONSTRUCTIONS WITH MATHEMATICAL
PROGRAMMING AND ITS PRACTICAL APPLICATIONS

Hiroshige Dan, Yoshihiro Yasumuro, Taisuke Ishigaki and
Tatsuaki Nishigata (Kansai University, Japan)

VISUAL MODELING OF OUTDOOR CONSTRUCTIONS BY
DATA FUSION OF LASER SCANNING AND STRUCTURE-
FROM-MOTION

Yoshihiro Yasumuro, Hiroshige Dan, Tatsuaki Nishigata and
Taisuke Ishigaki (Kansai University, Japan)

OPTIMIZING SYSTEM FROM 3D LASER SCANNER DATA
TO A VR MODEL FOR URBAN DESIGN STUDY

Kensuke Kitagawa, Tomohiro Fukuda and Nobuyoshi Yabuki
(Osaka University, Japan)

RESEARCH ON GENERATION OF A 3D MODEL USING
BREAKLINE FROM POINT CLOUD DATA

Shigenori Tanaka (Kansai University), Ryuichi Imai (National
Institute for Land and Infrastructure Management, MLIT, Japan),
Kenji Nakamura (Ritsumeikan University, Japan) and Kouhei
Kawano (Kansai University, Japan)

16:00-16:20 Coffee Break

[Sponsor exhibition in Room C(Shirakashi2)]

16:20-17:40 Session 3-A: BIM and Process Modeling (2)

Session Chair: Prof. Nashwan Dawood
(Teesside University, UK)

CONSTRUCTION LOGISTICS PLANNING BY SIMULATION
Julia Katharina Voigtmann and Hans-Joachim Bargstädt
(Bauhaus-University Weimar, Germany)

DEVELOPING 5D SYSTEM CONNECTING COST,
SCHEDULE AND 3D MODEL
Hando Kim (Daelim Industrial Co., Ltd., Korea), Claudio Benghi
(Northumbria University, UK), Nashwan Dawood (Teesside
University, UK), Doyoung Jung and Jaehong Kim (Daelim
Industrial Co., Ltd., Korea) and Yeongin BAEK (Sensorway Co.,
Ltd., Korea)

AUTOMATIC GENERATION OF WORKSPACE
REQUIREMENTS USING QUALITATIVE AND
QUANTITATIVE DESCRIPTION
Hans-Joachim Bargstädt and Amir Elmahdi (Bauhaus-University
Weimar, Germany)

STUDY ON THE USE OF 3-DIMENSIONAL DATA IN
THE DESIGN, CONSTRUCTION AND MAINTENANCE
OF BRIDGES IN JAPAN
Kazushige Endo, Noriaki Aoyama and Yuki Iboshi
(National Institute for Land and Infrastructure Management,
MI.IT. Japan)

17:40 Bus departure for Banquet

19:00-21:00 Banquet at Shokeikaku

Session 3-B: Simulation and Visualization (1)

Session Chair: Dr. Maisarah Ali
(International Islamic University Malaysia,
Malaysia)

APPLICATION OF VIRTUAL REALITY TECHNOLOGY TO
PRE-PROCESSING FOR 3-D FINITE ELEMENT
SIMULATIONS
Kazuo Kashiwama, Tasuku Yamazaki, Takayuki Miyawaki (Chuo
University, Japan), Kenji Hayashida (Kyushu University, Japan),
Nobuaki Ohno (JAMSTEC, Japan), Akira Kageyama (Kobe
University, Japan) and Kenjiro Terada (Tohoku University, Japan)
3D VISUALIZATION OF ARTICULATED MICRO-TUNNEL
BORING MACHINE DURING PIPE-JACKING OPERATIONS
Xiong Liang (Hong Kong Polytechnic University, China), Ming
Lu (University of Alberta, Canada) and Jian Ping Zhang
(Tsinghua University, China)

DEVELOPMENT OF 3-DIMENSIONAL GEOSPATIAL
INFORMATION SYSTEM WITH PANORAMIC IMAGES FOR
RAILWAY FACILITY MANAGEMENT
Naoto Tsuchiya, Daisuke Nakamura (East Japan Railway
Company, Japan), Naoki Suzukawa, Mamoru Hoshino, Kunihiko
Hasebe, Yuuichi Ishihara and Chiyoko Matsumoto (JR East
Consultants Company, Japan)

SCENE SIMULATION OF BRIDGE COLLAPSE BASED
ON OPENSCENEGRAPH AND FINITE ELEMENT
METHOD
Zhen Xu, Xinzheng Lu, Xiao Lu and Aizhu Ren (Tsinghua
University, China)

Room A (Shirakashi 1)

Room B (Meeting room 7)

DAY2 5-Nov 9:00-10:20

Session 4-A: Augmented Reality in AEC

Session Chair: Prof. Sidney Newton
(The University of New South Wales, Australia)

APPLICATION OF AUGMENTED REALITY TECHNOLOGY
IN IMPROVING ASSEMBLY TASK PROFICIENCY

Lei Hou and Xiangyu Wang (University of Sydney, Australia)

FUNCTIONAL REQUIREMENT OF AN AR SYSTEM FOR
SUPERVISION, COMMENTING, AND STRATEGIZING IN
CONSTRUCTION

Siwook Lee, Do Hyoung Shin and Sungkwon Woo (Inha
University, Korea)

BORED PILE CONSTRUCTION VISUALIZATION BY
ENHANCED PRODUCTION-LINE CHART AND
AUGMENTED-REALITY PHOTOS

Ming Fung Siu (Hong Kong Polytechnic University, China) and
Ming Lu (University of Alberta, Canada)

PHOTOGRAMMETRY ASSISTED RAPID MEASUREMENT
OF EARTHQUAKE-INDUCED BUILDING DAMAGE

Fei Dai (Hong Kong Polytechnic University, China), Suyang
Dong, Vineet R. Kamat (University of Michigan, USA) and Ming
Lu (University of Alberta, Canada)

Session 4-B: Simulation and Visualization (2)

Session Chair: Prof. Kazuo Kashiya
(Chuo University, Japan)

SIMULATION-BASED APPROACH TO PLANNING
TEMPORARY TRAFFIC ARRANGEMENT FOR
MICROTUNNELING OPERATIONS IN URBAN AREAS

Sze-chun Lau (Hong Kong Polytechnic University, China) and
Ming Lu (University of Alberta, Canada)

DEVELOPMENT OF AN EARTHWORK SIMULATION
SYSTEM BASED ON BLOCK MODEL

Takashi Aruga (Conport, Co., Ltd, Japan.) , Nobuyoshi
Yabuki(Osaka University, Japan) and Masanori Joko (Cyber and
Real Infrastructure Research Group, Japan)

INVESTIGATION OF THE NOH STAGE SPACE BASED ON
THE PLOT "JO-HA-KYU" USING VR

Naomi Matsunaga (Lemon Gasui Co Ltd., Japan) ,Nobuyoshi
Yabuki (Osaka University, Japan), Yuichi Kameyama (Leon
Studio Co Ltd., Japan) and Tomohiro Fukuda (Osaka University,
Japan)

DEVELOPMENT OF "GEOSPATIAL DISASTER
PREVENTION INFORMATION MASH-UP SERVICE"

Mitsuaki Kobayashi, Katsuyuki Yoshida, Jun Fukami, Yuichi
Matsumoto (JR East Consultants Company, Japan) and Takaaki
Kato (University of Tokyo, Japan)

10:20-10:40

Coffee Break

[Sponsor exhibition in Room C(Shirakashi2)]

Room A (Shirakashi 1)

Room B (Meeting room 7)

10:40-12:20 Session 5-A Game Engine and Education

Session Chair: Prof. Tomohiro Fukuda
(Osaka University, Japan)

LEARNING AND TEACHING DOMESTIC CONSTRUCTION
COMPETENCE USING SERIOUS VIDEO GAME
TECHNOLOGY

Sidney Newton, Russell Lowe and Patrick Xiao Wei Zou (The
University of New South Wales, Australia)

LEARNING FROM VIDEOGAMES LEVEL DESIGN: AN
EDUCATIONAL POINT OF VIEW FOR ARCHITECTURE

Danilo Di Mascio (G. D'Annunzio University, Italy)

AN INNOVATIVE APPROACH TO INTEGRATE H&S
ISSUES IN THE CONSTRUCTION PROJECT PLANNING
USING SERIOUS GAME ENGINE TECHNOLOGIES

Rajiv Chavada and Nashwan Dawood (Teesside University, UK)

VISUALISATION OF SEMANTIC ARCHITECTURAL
INFORMATION WITHIN A GAME ENGINE ENVIRONMENT

Pieter Pauwels, Ronald De Meyer and Jan Van Campenhout
(Ghent University, Belgium)

USER-CENTERED DESIGN AND EVALUATION OF E-
HERITAGE: A VIRTUAL REALITY PROTOTYPE FOR
LEARNING ARCHITECTURAL HERITAGE IN INFORMAL
EDUCATION

Juliana Aida Abu Bakar, Puteri Shireen Jahn Kassim, Murni
Mahmud, Kamarul Bahrin Buyong and Maisarah Ali

12:20-13:10 Lunch

[Sponsor exhibition in Room C(Shirakashi2)]

Session 5-B: Simulation and Visualization(3) / User Interface

Session Chair: Dr. Ming Lu (University of Alberta, Canada)

DEVELOPMENT OF AN INTERACTIVE VISUALIZATION
SYSTEM USING VR TECHNOLOGY FOR FLOW
SIMULATION

Tasuku Yamazaki, Kazuo Kashiyama (Chuo University, Japan),
Akira Kageyama (Kobe University, Japan), Nobuaki Ohno
(JAMSTEC, Japan) and Hideo Miyachi (CYBERNET Inc., Japan)

ACCESSIBILITY EVALUATION SYSTEM FOR SITE
LAYOUT PLANNING

Chi En Yang, Je Chian Lin, Wei Han Hung and Shih Chung Kang
(National Taiwan University)

RESEARCH FOR UTILIZATION OF SPATIAL
INFORMATION ON WWW FOR DISASTER PREVENTION
BY MOBILE PHONE

Kantaro Monobe (Miyagi University, Japan) and Shigenori
Tanaka (Kansai University, Japan)

CROSS-SECTIONAL SPACE DESIGN METHOD IN REAL-
WORLD AND VIRTUAL-WORLD THAT USES THE
CONTENTS ORIENTED SPATIAL MODEL

Hidenori Watanabe (Tokyo Metropolitan University, Japan) and
Kiyoshi Hoshino (Tsukuba University, Japan)

A SPATIAL CONTEXT GESTURE INTERFACE

Doo Young Kwon (Korean German Institute of Technology,
Korea)

13:10-14:00 Keynote

Session Chair: Prof. Nobuyoshi Yabuki (Osaka University)
Prof. Kazuo Kashiya (Chuo University)

Keynote Speech(3):

Prof. Feniosky Peña-Mora(Columbia University, USA)

"D⁴AR – 4 Dimensional Augmented Reality – Models for
Automation and Interactive Visualization of Construction Progress
Monitoring"

14:00-14:20 Coffee Break

[Sponsor exhibition in Room C(Shirakashi2)]

14:20-15:40 Session 6-A : Operation and Tele-Existence

Session Chair: Prof. Charles Woodward (VTT, Finland)

AUDITORY FEEDBACK FOR VR-ASSISTED
CONSTRUCTION ROBOT TELE-OPERATIONAhmad Anas Yusof, Tang Xing Xin, Kawamura Takuya and
Hironao Yamada (Gifu University, Japan)EFFECT OF SIMULATION TRAINING METHODS ON
OPERATOR ANXIETY AND SKILL DEVELOPMENTJohn C. Hildreth and Eric D. Heggstad (University of North
Carolina at Charlotte, USA)DEVELOPMENT OF TELE-OPERATED ROBOTICS
CRANE FOR IMPROVING ERECTION OPERATION IN
CONSTRUCTIONHung Lin Chi, Yi Chen Chen, Shih Chung Kang and
Shang-Hsien Hsieh (National Taiwan University,
Taiwan)BOUNDARY GENERATING METHOD FOR
COLLISION DETECTION IN VIRTUAL
CONSTRUCTIONWei Han Hung and Shih Chung Kang (National Taiwan
University, Taiwan)

Session 6-B : Environments in VR

Session Chair: Dr. Xiangyu Wang
(University of Sydney, Australia)ENVIRONMENTAL ASSESSMENT OF BUILDINGS USING
BIM-IFC

Souheil Soubra and Julien Hans (CSTB, France)

VISUALIZATION TECHNIQUE OF OUTDOOR THERMAL
ENVIRONMENT USING A VR AVATARTakuya Onoue, Nobuyoshi Yabuki, Shinji Yoshida and Tomohiro
Fukuda (Osaka University, Japan)VIRTUAL REALITY SIMULATION OF WIND POWER
PLANTS USING SOUND AND 3D ANIMATED GRAPHICS
Nobuyoshi Yabuki (Osaka University, Japan), Kazuhiro Sugimura
(JTB West), Yutaka Yoshimura, Tadashi Matsumoto (J-Power,
Japan), Tomohiro Fukuda and Syouji Aono (Osaka University,
Japan)DEVELOPMENT OF AN EXPERIENCED-BASED ROAD
TRAFFIC NOISE EVALUATION SYSTEM USING VR
TECHNOLOGYKeisuke Shibata, Kazuo Kashiyama (Chuo University, Japan),
Shinji Tajika (Keiyo Gas Co.,Ltd, Japan) and Masayuki Shimura
(Civil Engineering and Eco-Technology Consultants, Japan)

15:40-16:00 Coffee Break

16:00-16:35 Closing Session

Session Chair: Prof. Koji Makanae

Invited Paper:

How Virtual Reality for Construction Processes advances in
Germany

Prof. Hans-Joachim Bargstädt (Bauhaus-University Weimar
Germany)

Next CONVR Presentation (Prof.)

Closing