

F I N A L P R O G R A M

Innovative Technologies & Materials in Steel Structures

ISSS-2013

The 7th International Symposium on
STEEL STRUCTURES

November 7-9, 2013
Jeju Grand Hotel, Jeju, Korea

Organized by Korean Society of Steel Construction
In cooperation with International Journal of Steel Structures
www.kssc.or.kr/ISSS-2013, E-mail: ISSS-2013@mail.kssc.or.kr

ISSS-2013

WELCOME MESSAGE

On behalf of the Korean Society of Steel Construction (KSSC), it is our great pleasure to have this opportunity to welcome you all to Jeju, Korea to participate in the 7th International Symposium on Steel Structures, ISSS-2013. The main objective of this symposium is to provide an international forum for the presentation of recent advances on various aspects of steel construction and its applications to steel structures.

The theme of this symposium "Innovative Technologies & Materials in Steel Structures" has attracted interesting keynote papers from around the world, covering application of shape memory alloys for seismic resistant design and retrofit, field monitoring for long-span bridges, structural-fire engineering, and recent trend of steel-concrete hybrid bridges. The technical program of the symposium consists of presentations of 4 keynote lectures, 81 invited papers by each session organizer, and 72 general technical papers related to mechanical and structural behaviors, analysis and design, fabrication, construction, and maintenance of steel structures such as bridges, buildings, and other industrial facilities.

We would like to take this opportunity to express my deepest gratitude to the members of the International Advisory Committee, Local Advisory Committee, and Local Organizing Committee for their valuable contributions and hard work. We are also grateful to invited keynote speakers and session organizers for their contributions and efforts which make the symposium a very successful one. All the general participants deserve our appreciation for their helpful submissions. Special thanks are offered to sponsors for their generous financial support, without which this symposium would not have been possible.

We would like to thank you for joining ISSS-2013 in Jeju. We hope that you will find the symposium to be both enjoyable and stimulating. Many of you have made long journeys to be here. If you have spare time after the symposium, please take the opportunity to visit some of the beautiful places in Jeju. We hope that you will have a very pleasant and wonderful time during your stay in Jeju, Korea.

Jeju, Korea
November 7, 2013



Young-Suk Park, Ph.D.
Symposium Chairman of ISSS-2013
President of KSSC

Dong-Ho Choi, Ph.D.
Chairman of Local Organizing
Committee of ISSS-2013





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SYMPOSIUM INFORMATION

VENUE

Jeju Grand Hotel
263-15, Yeon-dong, Jeju-si, Jeju Province
Tel: +82-64-747-5000 / Fax: +82-64-742-3150
Website: <http://www.grand.co.kr>

SECRETARIAT OFFICE

• BEFORE AND AFTER SYMPOSIUM

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• DURING SYMPOSIUM (NOVEMBER 7-9, 2013)

Secretariat, Preparation Room, ISSS-2013
Sapphire Ballroom, 2nd Fl., Jeju Grand Hotel
Mobile : 011-9183-9743, 010-4106-1987

REGISTRATION

Registration Desk will be open in front of Crystal Ballroom 2nd Fl. It is recommended that all participants stop by the registration desk upon their arrival at the venue to collect their conference materials. Our staff will be pleased to help with all the participants' inquiries.

ON-SITE REGISTRATION FEE

Categories	Fee
General	\$500
Student	\$300

The fee covers symposium proceedings, coffee break, lunches, banquet, and admission to technical sessions.

COFFEE BREAKS

Coffee breaks will be held in the Crystal Ballroom at the times noted in the Program Overview.

OPENING CEREMONY

The Opening Ceremony will be held between 08:30-09:00 in Crystal Ballroom on November 7, 2013.

TIME AND VENUE FOR EACH PRESENTATION

Session	Time	Venue
Keynote Lecture	40 min.	Crystal
Oral Presentation	15 min.(including discussions)	Crystal, Jade, Amethyst
Poster Presentation	40 min.	Jade Ballroom Corridor

AVAILABLE VISUAL EQUIPMENTS

Beam projector, notebook computer

SYMPOSIUM OVERVIEWS

November 6, Wednesday			
18:00 - 19:30	Welcoming Reception		(16 th Fl. Sky Ballroom)
November 7, Thursday			
08:00 -	Registration		(Crystal Ballroom)
08:30 - 09:00	Opening Ceremony		(Crystal Ballroom)
09:00 - 09:40	Keynote Lecture 1		(Crystal Ballroom)
09:40 - 10:20	Keynote Lecture 2		(Crystal Ballroom)
10:20 - 10:40	Coffee Break		
Session room	Crystal	Jade	Amethyst
10:40 - 12:10	Session 1 Analysis of Bridges	Session 2 Fire Safety Design	Session 3 Steel Bridge Rehabilitation
12:10 - 13:10	Lunch		
13:10 - 15:10	Session 4 Advanced Design of Steel & Composite Structures	Session 5 Evaluation of Seismic Performance of Members & Connections	Session 6 Connections
15:10 - 15:30	Coffee Break		
15:30 - 17:15	Session 7 Steel & Composite Structures	Session 8 Super High Strength Steels & POSCO	Session 9 SMA Applications for Civil Structures
18:00 - 20:00	Banquet (Crystal Ballroom)		
November 8, Friday			
08:00 -	Registration		(Crystal Ballroom)
08:30 - 09:10	Keynote Lecture 3		(Crystal Ballroom)
09:10 - 09:50	Keynote Lecture 4		(Crystal Ballroom)
09:50 - 10:10	Coffee Break		
Session room	Crystal	Jade	Amethyst
10:10 - 12:10	Session 10 Reliability, Monitoring & Management of Infrastructures	Session 11 Large Span Structures	Session 12 Seismic Analysis & Design
12:10 - 13:10	Lunch		
13:10 - 14:40	Session 13 Performance of Steel Bridge & Influential Factors	Session 14 Seismic Steel Design	Session 15 Innovative Steel Structure Design for Fire Conditions
14:40 - 15:20	Poster Session		
15:20 - 15:40	Coffee Break		
15:40 - 17:10	Session 16 Fatigue and Dynamic Behaviors	Session 17 Innovation in Fire Design of Steels Structures	Session 18 Long Span Bridges
November 9, Saturday			
08:30 - 18:00	Cultural and Technical Tours		

TECHNICAL PROGRAM

KEYNOTE LECTURES

- Lecture 1:** Application of Shape Memory Alloys for Seismic Resistant Design and Retrofit- A State-of-the-Art Paper
Reginald DesRoches
(November 7, Crystal Ballroom)
- Lecture 2:** Field Monitoring and its Application for Long-span Steel Bridges
You-Lin Xu
(November 7, Crystal Ballroom)
- Lecture 3:** Structural-Fire Engineering: Towards Performance-Based Design
Michael D. Engelhardt
(November 8, Crystal Ballroom)
- Lecture 4:** Recent Trend on Design, Construction and Maintenance of Steel and Steel-Concrete Hybrid Bridges in Japan
Masatsugu Nagai
(November 8, Crystal Ballroom)

ORGANIZED SESSIONS

- Session 3:** Steel Bridge Rehabilitation
Organized by Masahiro Sakano
(November 7, Amethyst Ballroom)
- Session 5:** Evaluation of Seismic Performance of Members & Connections
Organized by Satoshi Yamada
(November 7, Jade Ballroom)
- Session 7:** Steel & Composite Structures
Organized by Lanhui Guo
(November 7, Crystal Ballroom)
- Session 8:** Super High Strength Steel & POSCO
Organized by Kangmin Lee & POSCO
(November 7, Jade Ballroom)
- Session 9:** SMA applications for Civil Structures
Organized by Reginald DesRoches
(November 7, Amethyst Ballroom)
- Session 10:** Reliability, Monitoring & Management of Infrastructures
Organized by Hitoshi Furuta
(November 8, Crystal Ballroom)

- Session 11:** Large Span Structures
Organized by Feng Fan
(November 8, Jade Ballroom)
- Session 13:** Performance of Steel Bridge and Influential Factors
Organized by Eiki Yamaguchi
(November 8, Crystal Ballroom)
- Session 14:** Seismic Steel Design: From Dampers and Connections to System Collapse
Organized by Taichiro Okazaki
(November 8, Jade Ballroom)
- Session 15:** Innovative Steel Structural Design for Fire Conditions
Organized by Anthony Abu
(November 8, Amethyst Ballroom)
- Session 17:** Innovations in Fire Design of Steel Structures
Organized by Venkatesh Kodur
(November 8, Jade Ballroom)
- Session 18:** Long Span Bridges
Organized by Ho-Kyung Kim
(November 8, Amethyst Ballroom)

GENERAL SESSIONS

- Session 1:** Analysis of Bridges
(November 7, Crystal Ballroom)
- Session 2:** Fire Safety Design
(November 7, Jade Ballroom)
- Session 4:** Advanced Design of Steel & Composite Structures
(November 7, Crystal Ballroom)
- Session 6:** Connections
(November 7, Amethyst Ballroom)
- Session 12:** Seismic Analysis & Design
(November 8, Amethyst Ballroom)
- Session 16:** Fatigue and Dynamic Behaviors
(November 8, Crystal Ballroom)

POSTER SESSION

November 8, Jade Ballroom Corridor

November 7, Thursday

08:00	Registration
08:30 - 09:00	Opening Ceremony (Crystal Ballroom) Welcoming Address LOC Address Congratulatory Address
09:00 - 09:40	Keynote Lecture 1 (Crystal Ballroom) Chair: Doobyeong Bae, Kookmin University, Korea Application of Shape Memory Alloys for Seismic Resistant Design and Retrofit - A State-of-the-Art Paper <i>Reginald DesRoches, Georgia Institute of Technology, USA</i>
09:40 - 10:20	Keynote Lecture 2 (Crystal Ballroom) Chair: Doobyeong Bae, Kookmin University, Korea Field Monitoring and its Application for Long-span Steel Bridges <i>You-Lin Xu, The Hong Kong Polytechnic University, Hong Kong</i>
10:20 - 10:40	Coffee Break

Time	Session 1 (Crystal)	Session 2 (Jade)	Session 3 (Amethyst)
10:40 - 12:10	Analysis of Bridges Chairs: Won-Seok Chung, Kyunghee University, Korea Yoshinobu Oshima, Kyoto University, Japan	Fire Safety Design Chairs: Ying Hu, Chong Qing University, China Jinwoo Lee, KEPCO E&C	Steel Bridge Rehabilitation Chairs: Masahiro Sakano, Kansai University, Japan Eunsoo Choi, Hongik University, Korea
10:40 - 10:55	Identification of the Vibration Characteristics of Steel Bridges and Its Uncertainty Using SSVS-VAR Model <i>Kosuke Kazumi, Kodai Matsuoka, Kiyoyuki Kaito</i>	Impact of Bending Moment Distribution Mode on Fire Behavior of Restrained PEC Columns <i>Xiao-Yong Mao, Xiao-Fei Jin, Jian-Zheng Man</i>	Influence of Plate Thickness, Diameter of Hole and Screw on Strength of Lap Joint connected by using Thread Rolling Screws <i>Hiroyuki Suzuki, Kazuhiro Nakajima</i>
10:55 - 11:10	Development of a Structural Dynamic Behavior Model for PC Girder Bridges Subject to Variation of Tension Force in Tendons <i>WonWoo Lee, MinChul Jeong, KangHo Lee, JungSik Kong</i>	Assessment of Connection Performance in a Sub-Framed Structure in Fire <i>Ying Hu, Roger Plank</i>	Effects of Ultrasonic Peening on Fatigue Strength of Out-of-Plane Gusset Joints <i>Koji Kinoshita, Akito Imamura, Yoshihiro Watanabe, Mitsuru Handa</i>
11:10 - 11:25	Damage Evaluation of a Railway Bridge Based on Vibration Monitoring <i>Yoshinobu Oshima, Jin-Young Kim, Kunitomo Sugitara</i>	Damaging Effects and Investigation of Steel Bridge Fires <i>Heungbae Gil, Junsang Cho, Jongchil Park</i>	Strengthening of Longitudinal and Transverse Beam Connection Joint in Old Steel Railway Bridges <i>Weiwei Lin, Teruhiko Yoda, Nozomu Tanguchi, Yusuke Sugino</i>
11:25 - 11:40	Estimation of Structure Deformed Shape Using Measured Displacement Data <i>Junho Choi, Seungjun Kim, Keesei Lee, Youngjong Kang</i>	Failure Temperatures of Steel H-Section Columns under Elevated Temperatures <i>Hyunsik Choi, Seongdeog Kang, Jaekuk Kim</i>	Investigation of Thermal Stress in Steel Plate Reinforced by CFRP Composite Material <i>Ken-itaro Matsumoto, Hironori Mamki, Hiroyuki Suzuki, Yoshimichi Fujii, Yoshiaki Yamaguchi, Syogo Toriyama</i>
11:40 - 11:55	Composite Behavior of Steel I-girders to Inverted-T Bent Cap <i>Heeyoung Lee, Daeyeon Cho, Zuog An, Wonseok Chung</i>	Welding Heat Transfer Analysis of an Embedded Steel Plate-to-RC Column Connection <i>Jae-Kwon Ahn, Cheo-Ho Lee, Jong-Rak Kim, Jin-Keun Kim, Sung-Woo Shin</i>	Non-destructive Tests Applied to Yodogawa Bridge during Repair Works <i>Luiza H. Ichinose, Yuzuru Kohno, Kanshirou Masuda, Masahiro Sakano</i>
11:55 - 12:10	Dynamic Response of Continuous Beam Bridge under Movingtrain Load with Track Irregularity <i>Di Mu, Dong-Ho Choi</i>	Analysis of Fibre Reinforced Concrete Metal Decking Floor at Elevated Temperature <i>D.Y.M. Wu, R.Y. Xiao</i>	Dynamic Loading Tests and Stress Measurements to Investigate the Effectiveness of Repair Works in the Yodogawa Bridge <i>Luiza H. Ichinose, Yoshihiro Natsuaki, Kanshirou Masuda, Masahiro Sakano</i>
12:10 - 13:10	Lunch		

Time	Session 4 (Crystal)	Session 5 (Jade)	Session 6 (Amethyst)
13:10 - 15:10	<p>Advanced Design of Steel & Composite Structures Chairs: Huiyong Ban, The University of New South Wales, Australia Sungkon Kim, Seoul Natl. University of Science and Technology, Korea</p>	<p>Evaluation of Seismic Performance of Members & Connections Chairs: Satoshi Yamada, Tokyo Institute of Technology, Japan Hyung-Joon Kim, University of Seoul, Korea</p>	<p>Connections Chairs: Jingfeng Wang, Hefei University of Technology, China Jae-Guen Yang, Inha University, Korea</p>
13:10 - 13:25	<p>Ductility of Composite Beams Constructed with High-Strength Steel Sections Huiyong Ban, Mark A. Bradford</p>	<p>Seismic Performance of Beam-to-Column Connections with Improved Horizontal Stiffeners Sanghoon Oh, Haeyong Park</p>	<p>Frictional Contact Behavior of a PPWS Socket Hoon Yoo, Sung-Hyung Lee, Ju-Won Seo</p>
13:25 - 13:40	<p>Compression Tests of Steel Columns Bonded CFRP Strips of High Elastic Modulus Focusing on Adhesive Length Masahide Matsumura, Shinya Koda, Nobuhiro Hisabe, Takashi Yamaguchi</p>	<p>Numerical Stability of Self-Centering Structural Elements under Seismic Excitation Hyung-Joon Kim</p>	<p>Blind Bolted End Plate Connections for Moment-Resisting CFST Frames Jingfeng Wang, Xiaolian Wang</p>
13:40 - 13:55	<p>Suggestion of Shear Resistance Equation for Y-type Perforated Rib Shear Connector by Empirical Analysis Chi-Young Jung, Se-Jun Park, Kyu-Tae Choi, Sang-Hyo Kim</p>	<p>Damage Index of Tension Brace Based on Residual Deformation Shoichi Kishiki, Nobuhiko Tatsumi</p>	<p>Seismic Behavior of Shear-critical Steel Coupling Beams in Hybrid Coupled Shear Wall Systems with Shape Steel Boundary Elements Anliang Song, Mingzhou Su</p>
13:55 - 14:10	<p>Flexural Capacity of Corrugated Steel Beams under Pure Bending Seung-Hee Lho, Young K. Ju, Chang-Hwan Lee, Sang-Dae Kim</p>	<p>Seismic Retrofit on Beam-to-Column Connections in Existing Steel Buildings Using Supplemental H-shaped Haunch Hayato Asada, Hiroaki Matoba, Tsyuyoshi Tanaka, Satoshi Yamada</p>	<p>Experimental Study on Panel Zone Behavior in Steel Moment Resisting Frames Sungyeob Shin, Michael D. Engelhardt</p>
14:10 - 14:25	<p>Experimental and Numerical Evaluation of the Seam Strength of Deep Corrugated Steel Plates Sungkon Kim, Young-Suk Park, Jungwhae Lee, Jaehoon Lee</p>	<p>Evaluation of Plastic Deformation Capacity of Steel Beams Subjected to Random Loading Histories Through Analytical Method Yu Jiao, Shoichi Kishiki, Satoshi Yamada</p>	<p>Nonlinear Finite Element Analysis of Column-Tree Steel Moment Connections Subjected to Cyclic Loads Kangmin Lee, Keunyeong Oh, Rui Li, Luyi Chen</p>
14:25 - 14:40	<p>Codification of High Strength Steel Structures Design Specification in China and Its Research Background Gang Shi, Fangxin Hu, Yongjiu Shi</p>	<p>Structural & Constructional Performance evaluation of Full-scale Mock-up Using Reuse Structure with New-shaped Hysteretic Damper Hongsik Ryu, Jinwon Kim, Youngju Kim, Sanghoon Oh</p>	<p>Experimental Tests for Evaluation of the Energy Dissipation Capacity of a Double Split Tee Connection with SMA Bolts Jae-Guen Yang, Min-Chang Baek</p>
14:40 - 14:55	<p>Flexural Behavior of a Full-Scale 65-kW Wind Turbine Tower Hyoung-Bo Sim, Ian Prowell, Ahmed Elgamal, Chia-Ming Ueng</p>	<p>Post Buckling and Deterioration Behavior of RHS Columns under Bidiirectional Forces Takanori Ishida, Yuko Shimada, Satoshi Yamada</p>	<p>Prediction of Fracture in Welded Seismic Steel Moment Connections Based on Continuum Damage Mechanics Jae-Hoon Kim, Cheol-Ho Lee</p>
14:55 - 15:10	<p>The Optimization Process for Design of Horizontal Girders of Rising Sector Gate Using PIA^{no} Kabsoo Lee, Bokyoung Shim, Xiaozhe Lu, Youngdoon Kwon</p>	<p>Random Loading Test on Beam-to-Column Connection Norihito Miki, Shigehito Watanabe, Yu Jiao, Satoshi Yamada</p>	<p>Numerical Investigation on the Structural Behaviors of Ferritic Stainless Steel (STS430) Two-Bolted Connections TaeSoo Kim, YongHyun Cho</p>
15:10 - 15:30	Coffee Break		

Time	Session 7 (Crystal)	Session 8 (Jade)	Session 9 (Amethyst)
15:30 - 17:15	Steel & Composite Structures Chairs: Lanhui Guo, Harbin Institute of Technology, China Jae-Hyuk Choi, Chosun University, Korea	Super High Strength Steels & POSCO Chair: Kangmin Lee, Chungnam Natl. University, Korea	SMA Applications for Civil Structures Chairs: Reginald DesRoches, Georgia Institute of Technology, USA Jong Wan Hu, University of Incheon, Korea
15:30 - 15:30	Behaviour of Thin-walled Circular Hollow Section Tubes Subjected to Bending Shijun Yang, Lanhui Guo, Ben Niu	Analytical Performance Simulation of Built-up Square Hollow Section Structural Members Fabricated with High Performance Steel Jungshan Yoo, Joowoo Kim, Jaeguen Yang, Joowon Kang, Myungjae Lee	Behavior of Recentering Buckling-Restrained Braced Frame Structures Jiwoong Park, Jongwan Hu
15:30 - 15:45	Experimental Research on the Hysteretic Behavior of T-stub Connection with Insearted Plates Zhaoqi Wu, Xiaoming Zhu, Shao-fei Jiang	Analytical Performance Simulation of Built-up H-Section Structural Members Fabricated with HSA800 of High Performance Steel Jungshan Yoo, Joowoo Kim, Jaeguen Yang, Joowon Kang, Myungjae Lee	Bond-slip Characteristics of SMA Concrete Reinforcing Fibers Due to Pull-Out Tests Eunsoo Choi, Dongjoo Kim, Young-Soo Chung, Tae-hyun Nam
15:45- 16:00	In-Plane Stability and Design of Fixed Concrete-Filled Steel Tubular Circular Arches Changyong Liu, Yuyin Wang, Sumei Zhang	Experimental Study on the Structural Performance of Built-up Square Tubular Beam-Columns Fabricated with High Performance Steel (HSA800) Kangmin Lee, Myung Jee Lee, Young Suk Oh, Tae Soo Kim, Luyi Chen	Seismic Fragility of RC Columns Retrofitted by SMA Wire Jackets Using Open SEES Analytical Model Sun-Hee Park, Eunsoo Choi, Jaewon Lee, Chunsung Jung, Yoon Eo
16:00 - 16:15	Time-Dependent Behavior of Recycled Aggregate Concrete Filled Steel Tubes: A Comparative Study Using Different Methods Yue Geng, Yuyin Wang, Jie Chen	Structural Performance of H-Shaped Beam-Columns Fabricated with High Performance Steel (HSA800) under Concentric Axial and Lateral Loadings Kangmin Lee, Myung Jee Lee, Young Suk Oh, Tae Soo Kim, Do Hwan Kim	Seismic Performance of a Double Split Tee Connections to CFT Column with Shape Memory Alloys Sungju Lee, Joo-Woo Kim, Jae-Guen Yang
16:15 - 16:30	Stability Strength of Aluminum Alloy Columns with H-section under Eccentric Compression Ximei Zhai, Xu Yang, Lijuan Sun	Ultimate Shear Strength of High-Performance Steel Plate Girders Do Hyeong Kim, Yong Soo Choi, Tae Sik Hwang, Sung Chul Lee	Alternative Shape Memory Alloy Devices for Seismic Response Modification Emily R. McCarthy, Jamie E. Padgett, Darel Hodgson, Reginald DesRoches
16:30 - 16:45	An Experimental Study on Behaviour of Steel Tube Confined Reinforced Concrete Columns after Fire Yanchong Pan, Hua Yang, Faqi Liu	Features of the 800MPa High-Strength Steel Plates for Building Constructions Do-Hwan Kim, Seung-Eun Lee, Jin-Ho Kim, Seung-Ho Yu	Testing, Modeling, Analyzing Various Energy Absorbing SMA Devices R. DesRoches, R. Mizzaifar, A. Yavari, K. Gall
16:45- 17:15	Performance Testing and Comparison of Buckling-Restrained Braces with H and Crisscross Cross Section Unrestrained Segments Mingming Jia, Lanhui Guo, Lin Sun, Sumei Zhang, Dagang Lu	Structural Behavior of Anchorage for High Strength 7-Wire Strand Jin-Kook Kim, Taek-Ryong Seong, Myung-Hyun Noh	
18:00 - 20:00	Banquet (Crystal Ballroom)		

November 8, Friday

08:00	Registration (Crystal Ballroom)	Chair: Cheol-Ho Lee, Seoul Natl. University, Korea	
08:30 - 09:10	Keynote Lecture 3 (Crystal Ballroom)	Structural-Fire Engineering: Towards Performance-Based Design <i>Michael D. Engelhardt, University of Texas at Austin, USA</i>	
09:10 - 09:50	Keynote Lecture 4 (Crystal Ballroom)	Recent Trend on Design, Construction and Maintenance of Steel and Steel-Concrete Hybrid Bridges in Japan <i>Masatsugu Nagai, Nagasaki University of Technology, Japan</i>	
09:50 - 10:10	Coffee Break		
Time	Session 10 (Crystal)	Session 11 (Jade)	Session 12 (Amethyst)
10:10 - 12:10	Reliability, Monitoring & Management of Infrastructures Chairs: Hitoshi Furuta, Kansai University, Japan Jung-Sik Kong, Korea University, Korea	Large Span Structures Chairs: Feng Fan, Habin Institute of Technology, China Dongkyu Lee, Sejong University, Korea	Seismic Analysis & Design Chairs: Taejin Kim, CHANG MINWOO Structural Consultant, Korea Kiyoshi Ono, Osaka University, Japan
10:10 - 10:25	Traffic Control System for Reducing Bridge Live Load <i>Moon-Seock Choi, Sang-Hyo Kim, Jung-Yeon Jung</i>	The Effects of Seismic Motion Spatial Correlation on Earthquake Response of Single-Layer Spherical Lattice Shell <i>Feng Fan, Yugang Li, Xudong Zhi, Lu Li</i>	Experimental Research on Seismic Behavior of Eccentrically Braced Steel Frames <i>Jiaojiao Wang, Yongjiu Shi, Yuanqing Wang</i>
10:25 - 10:40	Considering Change of Environmental and Operational Conditions on Long-term Monitoring of a Steel Bridge by Bayesian Regression <i>C.W. Kim, T. Morita, S. Kitauchi, K. Sugiyra</i>	Database-assisted Design of Large-span Flat Roofs for Wind <i>Ying Sun, Ning Su, Yue Wu</i>	Evaluation of Seismic Performance of Steel Bridge Piers by Revised Design Earthquake Ground Motions <i>Sayuri Kitaichi, Kiyoshi Ono, Seiji Okada</i>
10:40 - 10:55	Finding Various Failure Modes of Lifeline Network Using Metaheuristics <i>Koichiro Nakatsu, Hitoshi Furuta, Yasutoshi Nomura, Ken Ishibashi, Masahiro Uchida</i>	Anti-seismic Effect of Lattice Grid with Friction Pendulum Bearings under the Earthquake Impact of Various Dimensions <i>Feng Fan, Dewen Kong, Menghan Sun, Xudong Zhi</i>	Study on Inelastic Buckling Behavior and Residual Strength of H-Section Steel Column <i>Daniel Y. Abebe, Jinwoo Kim, Charles Clifton, Jaehyook Choi</i>
10:55 - 11:10	Effectiveness of Optimization for Bridge Maintenance Planning <i>Koichiro Nakatsu, Hitoshi Furuta, Kyosuke Takahashi, Ken Ishibashi, Masahiro Uchida</i>	Assessment and Strengthening of a Space Truss Structure Damaged by Heavy Snow <i>Bo Nan, Yue Wu</i>	A Comparison of Design Standards for the Calculation of Wind and Earthquake Loads and the Design of Steel Structural Members in Industrial Plants <i>Jong-Han Lee, Eunsoo Choi, Baik-Soon Cho</i>
11:10 - 11:25	Health Monitoring of a Truss Bridge Utilizing Wireless MEMS Sensors and Vehicle-Induced Vibration Data <i>Mitsuo Kawatani, Chul-Woo Kim, Hiromasa Doi, Ai Yamano</i>	Seismic Performance of Single Layer Lattice Shell with VFFPB <i>Dewen Kong, Feng Fan, Xudong Zhi</i>	Probabilistic Assessment of Seismic Performance Variation due to Changes of the Characteristics of Hysteretic Energy Dissipation Systems <i>Hyung-Joon Kim, Dong-Hyeon Shin</i>
11:25 - 11:40	Seismic Performance of RC Bridge Piers in Consideration of Unthinkable Earthquake <i>Hiroaki Kinomura, Tateki Toi, Hiroaki Tsuruta, Masahiro Dogaki</i>	Numerical Analysis of Single-Layer Reticulated Shells with Socket Joints <i>Huihuan Ma, Feng Fan, Gengbo Chen, Shizhao Shen</i>	Seismic Performance Evaluation of Fixed Steel Jacket Offshore Platforms with Buckling-Restrained Braces <i>Mohamed Nour El-Din, Jinkoo Kim</i>
11:40 - 11:55	Stress Redistribution by Member Fracture in Steel Truss Bridge <i>Kunitomo Sugiyra, Kunitaro Hashimoto, Eri Nakamura</i>	A Continuous Model of a Standing Human Body in Vertical Vibration <i>Qingwen Zhang, Yu Zhang, Feng Fan, Tianjian Ji</i>	Multi-Objective Seismic Design Method for Steel Moment Frames Considering the Effect of Panel Zone <i>Se Woon Choi, Yousook Kim, Hyo Seon Park</i>
11:55 - 12:10	Seismic Response Characteristics of Curved Girder Viaducts Incorporating Bridge-Vehicle Interaction <i>Mitsuo Kawatani, Chul-Woo Kim, Ayumi Yamamoto, Shinya Yokoyama</i>	Predicting Dynamic Failure Mode of Single-Layer Shell Based on LCA <i>Yu Zhang, Guangchun Zhou, Ming Zhang, Qingwen Zhang</i>	
12:10 - 13:10	Lunch		

Time	Session 13 (Crystal)	Session 14 (Jade)	Session 15 (Amethyst)
13:10 - 14:40	<p>Performance of Steel Bridge & Influential Factors Chairs: Eiki Yamaguchi, Kyushu Institute of Technology, Japan Chang Kook Oh, Kookmin University, Korea</p>	<p>Seismic Steel Design: From Dampers and Connections to System Collapse Chairs: Taichiro Okazaki, Hokkaido University, Japan Young K. Ju, Korea University, Korea</p>	<p>Innovative Steel Structural Design for Fire Conditions Chairs: Anthony Abu, University of Canterbury, Newzealand Jeong-Ki Min, Korea Conformity Laboratories, Korea</p>
13:10 - 13:25	<p>Fatigue Damage of a Diagonal Member in a Steel Truss Bridge and Its Cause Identification Shozo Nakamura, Toshihiro Okumatsu, Takafumi Nishikawa, Takatoshi Okabayashi</p>	<p>Effects of Column Base Behavior on Seismic Performance of Multi-Story Steel Moment Resisting Frames Yao Cui, Satoshi Yamada</p>	<p>Edge Beam Stability of Composite Floors in Fire Conditions Anthony K. Abu, Taidi Gu, G Charles Clifton</p>
13:25 - 13:40	<p>Proposed Revisions to Fatigue Provisions of Orthotropic Steel Deck Systems for Long Span Cable Bridges Chang Kook Oh, Doobyeong Bae</p>	<p>Behavior of Hourglass-Shaped Steel Damper Subject to Monotonic and Cyclic Loadings Chang-Hwan Lee, Young K. Ju, Seung-Hee Lho, Sang-Dae Kim</p>	<p>The Critical Temperature of Steel Beams with Moment-Resisting Beam-Splice Connections Takeo Hirashima</p>
13:40 - 13:55	<p>Effects of Land Use Data on Numerical Simulation of Corrosive Environment Caused by Airborne Seasalt Particles Makoto Obata, Masato Fukushima, Selya Suzuki</p>	<p>Bi-axial Loading Tests of Beam-to-Column Connection with Exterior Diaphragms Shintaro Matsuo, Takuro Oyamada</p>	<p>A Study on Clarification of a Relationship between Thermal Stress Attenuation and Strain Hardening of Steel for Steel Beams subjected to Fire Fuminobu Ozaki</p>
13:55 - 14:10	<p>Influence of Local Corrosion on Load-Carrying Capacity of Steel I-Section Girder End Eiki Yamaguchi, Toshiaki Akagi</p>	<p>Shake-Table Tests to Evaluate the Seismic Performance of Moment Frame Connections in High-Rise Steel Buildings Taichiro Okazaki, Tomohiro Matsumiya, Takuya Nagae, Kunio Fukuyama, Takahito Inoue, Masayoshi Nakashima</p>	<p>Mechanical Properties of ASTM A992 Steel at Elevated Temperature after Yielding Jinwoo Lee, Michael D. Engelhardt</p>
14:10 - 14:25	<p>Fatigue Assessment of Composite Steel Box Girder Bridge with Measurement Data Jun-Yong Park, Hyun-Joong Kim, Ho-Kyung Kim</p>	<p>Method of a New Shaking Table Test Overcoming the Scale Effect on Small-scale Steel Frame Yuko Shimada, Satoshi Yamada</p>	<p>Fire Performance of Composite Beams with Different Web Thickness Jeong-Ki Min, Young K. Ju</p>
14:25 - 14:40	<p>Residual Stress and Ultimate Strength of Welded Steel Columns with Rectangular Section Shota Hashimoto, Kiyoshi Ono, Seiji Okada, Nobuo Nishimura</p>	<p>Collapse Behavior and Ultimate Earthquake Resistance of Weak Column Type Multi-Story Steel Frame with RHS Columns under Bi-axial Ground Motion Satoshi Yamada, Yuko Shimada, Hiroyasu Sakata, Muneo Hori</p>	<p>Non-Target Image-based Techniques for Measuring the Displacement of Bearings with changes in Temperature Using Visual Inspection Photographs Junsang Cho, Heungbae Gil, Jongchil Park, Young Huh</p>
14:40 - 15:20	Poster Session		
	<p>Design of Flexible High-neck Forging Flange Applied in Transmission Towers Jing Wu, Guoqiang Wu, Qinghua Li, Jingbo Yang</p>	<p>Structural Behavior of Beam-to-Column Connections of Circular and Rectangular CFT Structures Improving Concrete Filling Ning Wang, Myung-jae Lee</p>	<p>Residual Stresses Analysis of Welded Joints by Using Coercive Method M. Seenivasan, A. Baskar, R. Arunpichaimuthu</p>
	<p>Elasto-plastic Behavior of Beam-to-column Connections of Steel Bridge Frame Piers with Circular Columns Koji Kinoshita, Tatsuya Suzuki</p>	<p>Seismic Behavior of Steel Coupling Beams in Innovative Hybrid Coupled Shear Wall Systems Anliang Song, Mingzhou Su</p>	<p>A Study on Structural Characteristics of Circular Hollow Steel Damper for Aspect Ratio Jinwoo Kim, Daniel Y. Abebe, Jaehyuk Choi</p>
	<p>Experimental Investigation on Steel Plate-Concrete Column-to-Steel Beam Connections under Cyclic Loadings Daniel J. Choi, Cheol-Kyu Kang, Tae-Gu Cho, Myoung-Hwan Han, Byong Choi</p>	<p>Nonlinear Finite Element Analysis of Semi-Rigid Column-Tree Moment Connections Kangmin Lee, Luyi Chen, Rui Li, Keunyeong Oh</p>	<p>An Analytical Study on Steel-Concrete Composite Girder with Y-Type Perforated Rib Shear Connector Sejun Park, Chiyoung Jung, Byunggun Ahn, Sanghyo Kim</p>
14:40 - 15:20	<p>The Stability of Continuous Welded Rail Tracks Considering Various Wheel Loads Sang-Yun Han, Taek-Hee Han, Jeong-Hun Kim, Young-Jong Kang</p>	<p>Experimental Study on Fatigue Behavior of Corroded Steel plate Shan-hua Xu, Bin Qiu</p>	<p>Compressive Strength and Residual Stress Evaluation of Stub Columns Fabricated of High Strength Steel Dae-Kyung Kim, Cheol-Ho Lee, Kyu-Hong Han, Jin-Ho Kim, Seung-Eun Lee, Hyung-Bo Sim</p>
	<p>A Study on Stainless Steel Roof Panel for Cool Roof Performance Evaluation Inho Lee, Jongmin Yang, Wei Bing, Kwang-il Ko, Mija Chung, Euntaek Lee</p>	<p>Inelastic Analysis of Steel Frame Considering Influence of Strain Hardening on Bending Moment-Axial Force Interaction Jeong Soo Kim, Moon Kyum Kim</p>	<p>Blast-Resistant Performance of the Earth Covered Magazines using Corrugated Steel Plates Sungkon Kim, Jungwhae Lee, Young-Suk Park</p>
	<p>Structural Behavior of Beam-to-Column Connections of Rectangular CFT Structures having Different Opening Shapes for Filling Ki-hoon Kim, Myung-jae Lee</p>	<p>Analysis of the Dynamic Response of Ice-shedding on Double Circuit 1000kV and Double Circuit 500kV Transmission Lines on the Same Tower Jun-ke Han, Chun-lei Zhang</p>	<p>The Study on Crack and Corrosion Inspection for Steel Structure by using EPDM Kyong-Ho Chang, Tae-Hwan Um, Jaeyik Lee</p>

14:40 - 15:20	<p>A Buckling Characteristics of Single-Layer Lattice Domes According to Section Size and Junction's Condition of Main Frames Cheol Hwan Kim, Byeong-Soo Kang, Won-Tak Chae, Hwan-Mok Jung</p> <p>Extracting Statistically Dominant Modes of a Steel Truss Bridge from Vehicle-Induced Vibrations C.W. Kim, K.C. Chang, P.J. McGettrick</p> <p>Flexural Behavior of Prestressed Steel Plate Welded I-Shape Girder Young Geun Lee, Sung Il Kim, Won Hee Hong, Soon Jong Yoon</p> <p>Dynamic Topology Optimization with Non-stochastic Uncertainties of Structures Dongkyu Lee, Jaehong Lee, Soami Shin</p> <p>Life Cycle Performance of Railway Track Based on Metro Wear Data Min Chul Jeong, Won Woo Lee, Sung Wook Kim, Jung Sik Kong</p>	<p>Influence of the Data Filtering and the Attachment State of Sensor on Measurement Data in BHMS Hyun-Jun Jung, Tae-Hwan Yang, Dae-joong Moon, Jin-Woo Jung</p> <p>Seismic Evaluation of Wood Shear Wall Hwanseon Nah, Hyeonju Lee, Sungmo Choi</p> <p>Bend-Buckling of Corrugated Webs under Pure Bending Seung-Hee Lho, Young K. Ju, Chan-Hwan Lee, Jin-Tak Oh, Sang-Dae Kim</p> <p>Study on Bridge Live Loads and Traffic Modes by Using Weigh-in-Motion Data Jung-Yeun Joung, Byung-Geon Ahn, Dong-Woo You, Sanghyo Kim</p> <p>On the Two-dimensional Static Stiffness of a Parabolic Cable Sun-Gil Gwon, Dong-Ho Choi</p>	<p>A New Accelerated Replacing Method and Full-Scale Test of a New Superstructure for Existing OSPG Railway Bridges Eunsoo Choi, Hyunmin Kim, Jaewon Lee, Chunsung Jung, Yoon Eo</p> <p>Experimental Research and Numerical Analysis of Spindle Tensairity Structure Zhenggang Cao, Feng Fan</p> <p>Development of XSEA Software for Offshore Structure Analysis Ki-Du Kim, Chana Sinsawatodom, Pasin Plochpradit, Anapatit Manovachirasan, Bum-Jun Kim</p> <p>Experimental Study on the Strength Reduction Factor of Q420 Large Size and High Strength Angle Steel Compression Members Hai-Jun Xing, Xu-ming Wang, Jia-jia Wang, Ying-jie Zhang, Zhi-peng Liang</p>
15:20 - 15:40	<p>Coffee Break</p>	<p>Session 16 (Crystal)</p>	<p>Session 17 (Jade)</p>
15:40 - 17:15	<p>Fatigue and Dynamic Behaviors Chairs: KabSoo Kyung, Korea Maritime University, Korea Mitsuo Kawatani, Kobe University, Japan</p> <p>Progressive Collapse Mitigation of Simple Braced Frames Using Vierendeel Truss S. Jayarajan, J Y Richard Liew, C G Koh</p> <p>Numerical Approaching for Fatigue Strength Evaluation of Welded Steel Member Kyong-Ho Chang, Chin-Hyung Lee, VuongNguyen VanDo</p> <p>Study on Dynamic Behavior of Isolated Viaduct with Triggers; Modeling and Analysis Procedure Masahide Matsumura, Takahiro Kanata, Yasuyuki Nakanishi, Takashi Yamaguchi</p> <p>Fatigue Strength of Stop Hole Improved by Closing Crack Surface Under Bending Risa Matsumoto, Toshiyuki Ishikawa, Atsushi Hattori, Hiroataka Kawano, Kentaro Yamada</p> <p>Mechanical Properties and Constitutive Equation under Cyclic Loading of Higher Yield Strength Steel Plates for Bridges SBHS700 Keita Hamamura, Kiyoshi Ono, Seiji Okada, Shinji Yamada, Nobuo Nishimura</p> <p>Enhancement of Fatigue Performance of a Steel Bridge by Removal of Expansion Joint SungJin Lee, KabSoo Kyung, HeeHyun Lee, JunChang Jeon</p>	<p>Innovation in Fire Design of Steels Structures Chairs: Venkatesh Kodur, Michigan State University, USA Sungmo Choi, University of Seoul, Korea</p> <p>Experimental Study on Local Buckling of Steel Columns at Elevated Temperatures Wei-Yong Wang</p> <p>Development of Time Lag Considered Crowd Load Model Based on Spectral Density Approach Sung-Yong Kim, Cheol-Ho Lee, Kyungkoo Lee</p> <p>Analysis on Thermal Deformation of Welded Built-up Square Composite Columns Reinforced Steel-fibres Sunhee Kim, Kyongsoo Yom, Sungmo Choi</p> <p>Experimental Studies on CFST Frames with ALC Walls under Cyclic Loadings Bo Wang, Jingfeng Wang</p> <p>Development of Importance Factor for Design of Steel Bridges Against Fire Hazard Venkatesh K. Kodur, Mohammad Z. Naser</p> <p>Response of Double Angle Connections under Transient Fire Conditions Purusotham Pakala, Venkatesh Kodur</p>	<p>Long Span Bridges Chairs: Hokyung Kim, Seoul Natl. University, Korea Kunitomo Sugiuira, Kyoto University, Japan</p> <p>Effects of Initial Geometric Imperfection on Ultimate Strength of Stiffened Plate System Jong Seo Kim, Hae Sung Lee, Kyungsik Kim</p> <p>New Approach on the Safety Factor of Cable in Long-span Bridges Chan Min Park, Sang Hoon Shin, Jong Gyun Paik, Ho Kyung Kim</p> <p>Computer-Aided Understanding of Load Path of Cable-Stayed Structures Namhee Kim Hong, Hyun-Moo Koh, Sung-Gul Hong</p> <p>Experiments on the Flexural Behaviors of Parallel Wire Cable Minjae Lee, Jonghoon Moon, Jaheal Yoon, Ho-Kyung Kim</p> <p>Dynamic Vessel Collision Load for Long-Span Cable-Supported Bridges Jung-Hyun Lim, Wonsuk Park, Hyun-Moo Koh</p> <p>Wind Load Factor for Long-Span Cable-Supported Bridges Chul-Hwan Yoo, Ho-Kyung Kim</p>
15:40 - 15:55			
15:55 - 16:10			
16:10 - 16:25			
16:25 - 16:40			
16:40 - 16:55			
16:55 - 17:15			

SOCIAL PROGRAM

WELCOMING RECEPTION

A Welcoming Reception will be held in the Sky Ballroom(16th Fl.) to provide the opportunity for participants to socialize in a relaxed atmosphere from 18:00-19:30 on Wednesday, November 6, 2013.

BANQUET

The Conference Banquet scheduled for 18:00-20:00 on November 7, 2013 in the Crystal Ballroom(2nd Fl.), will provide the opportunity to enhance your friendship with attendees from throughout the world.

CULTURAL AND TECHNICAL TOURS



Jeju is an oval-shaped island that is 73km from east to west and 31km from north to south, with Mt. Hallasan in the center. The island has a coastal ring road of 181km and 258 km of coastline. It has a temperate climate with temperatures that rarely drop below zero degrees.

The island is home to both polar and tropical animals. It is home to 77 types of mammals, 198 species of birds, 8 kinds each of reptiles and amphibians, 873 types of insects and 74 varieties of spiders. The island, with Mt. Hallasan at its center, has recorded a total of 2,001 types of vertically distributed sub-tropical, temperate, and polar vegetation, in comparison with Mt. Baekdusan, which has about 500 types, and Mt. Jirisan, which has about 1,000.

TOUR PROGRAM

■ Schedule

DATE: November 9, 2013

TIME: Hotel start (08:30) → Udo tour/Lunch (10:00~13:30) → Sungsan Ilchulbong (13:40~14:30) → Aqua Planet Jeju (14:50~17:00) → Hotel stop

■ Information

- Minimum Participation Required: at least 20
- Vehicle: 45 seated bus
- Fare: 85,000KRW per 1 person (VAT included-available only cash)
- Included: Entrance fee, Vehicle, English tour guide, Lunch



Tour Desk

- Title: ISSS-2013 The 7th International Symposium on Steel Structures
- Venue: Jeju Grand Hotel
- Date: 2013.11.07 ~ 2013.11.09
- The Services Provide
 - Airline Reservation Service
 - Car rental Reservation Service
 - Tour Information Service
 - Transportation Information Service
 - Restaurant Information Service
 - Tour Guide Book

■ Udo

The island was named “Udo” or “Cow island” as its contours look like a cow lying down on the ground. There are 8 scenic wonders of Udo, and we'll visit 3 spots(Udo-bong, Seobin-baeksa, Dongan-gyeonggul).



■ Seongsan Ilchulbong

Sungsan Ilchulbong is recognized and registered as a worldwide cultural Inheritance by UNESCO and is formed due to volcano activity. Watching sun rise at Sungsan Ilchulbong is known to be very beautiful.



■ Aqua planet Jeju

Aqua planet Jeju is the largest aquarium in Asia and an eco-friendly aquarium. There are several programs: Ecology of the Flying Penguin, the Dancing Sea Lion, and learning about the behaviors and characteristics of sea lions, elephant seals, and dolphins with different attractions at a presentation on ecology provided by professional aquarists.



TRANSPORTATION



Jeju Grand Hotel

263-15, Yeon-dong, Jeju-si, Jeju Province
 Tel: +82-64-747-5000 / Fax: +82-64-742-3150
 Website: <http://www.grand.co.kr>

From Jeju International Airport to Jeju Grand Hotel

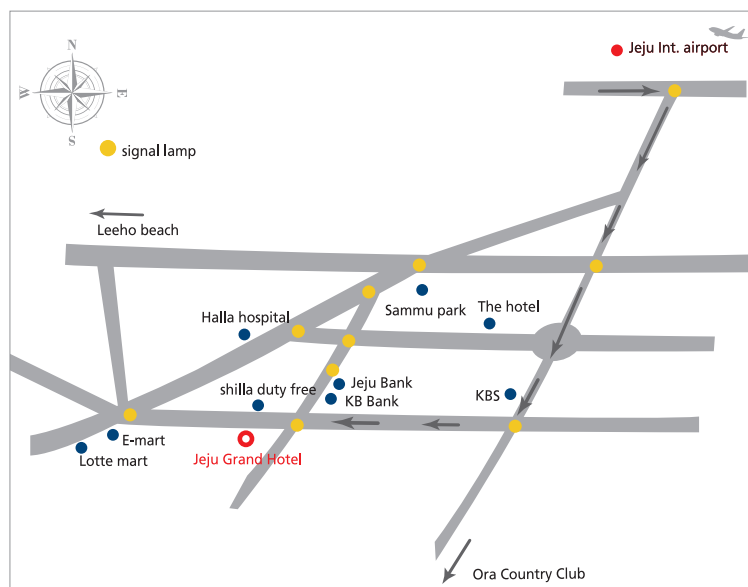
The distance between the airport and the hotel is app. 2.5 km and takes about 7 minutes by driving. Public Transportation/Shuttle Bus Information are the following. Local people usually use taxi instead of the bus or shuttle bus.

Classification	Service Lines	Operation	Required Time	Fee
Taxi	Airport - Hotel		7 minutes	KRW 5,000
Shuttle Bus	Airport - Hotel	by reservation	7 minutes	Free
Airport Bus	Airport -Shinjeullwon inside downtown of Jeju	-The First Bus : about 06:20 -The Last Bus : about 22:20 -Service Distance: 5~10min	20 minutes	KRW 1,000

※ In case of using airport bus, app. 2 minutes of walking will be required to Hallasan(Mt.) direction after taking 100, 200 ro 500 for Halla University direction and talking off at the Jaewon Apt. in Shinjeju.

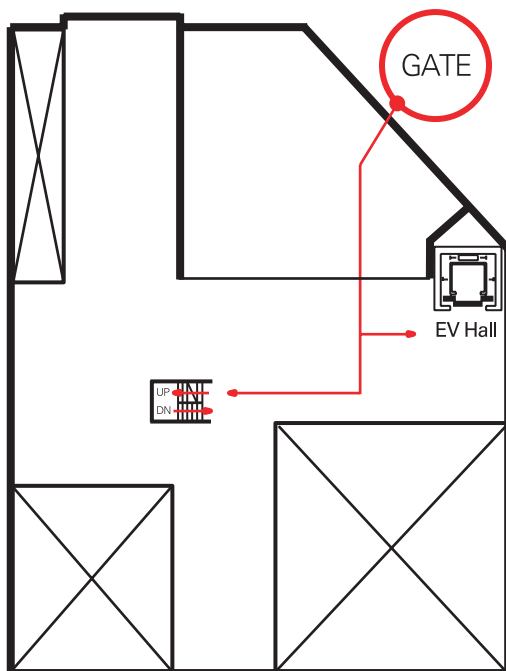
※ Hotel shuttle buses are operated when reserved by customers and may stop at parking lot no. C-10, 11 of airport for boarding.

※ US \$1 ≙ KRW 1,100.

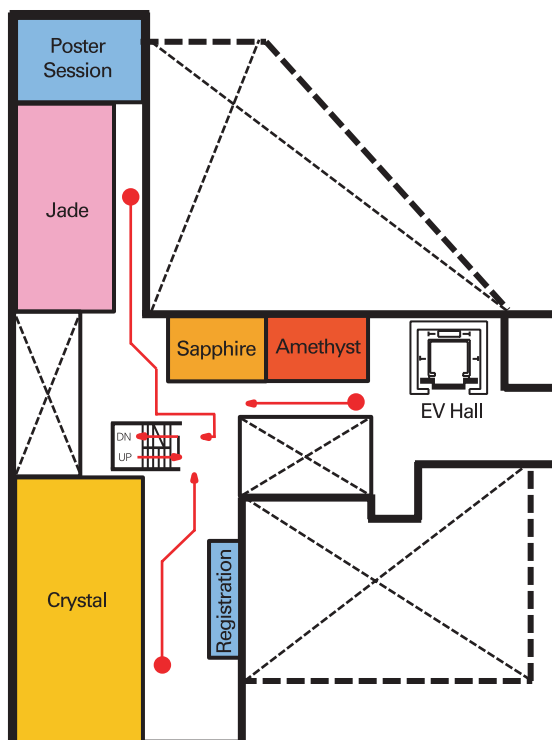


Jeju Grand Hotel

First Floor



Second Floor



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KOREAN SOCIETY OF STEEL CONSTRUCTION

ISSS-2013

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