SCHOOL OF CIVIL ENGINEERING
土木工程学院
SOUTHEAST UNIVERSITY
东南大学

FINAL PROGRAMME

The 7th International Conference on

Advances in Steel Structures

in conjunction with

IJSSD Symposium on

Progress in Structural Stability and Dynamics

ICASS'2012 / IJSSD'2012

14 - 16 April 2012

Nanjing, China

Organised by

School of Civil Engineering, Southeast University

Sponsored by

Department of Civil & Structural Engineering,
The Hong Kong Polytechnic University
Joint Structural Division of HKIE
The Hong Kong Institute of Steel Construction
International Journal of Advanced Steel Construction

2012-4

CONFERENCE INFORMATION

Conference Venue

Zijin Building, *The International Conference Hotel Nanjing*
2 Sifangcheng ZhongShanLing, Nanjing, China
www.nic-hotel.com

Hotel Accommodation

The International Conference Hotel Nanjing
2 Sifangcheng ZhongShanLing, Nanjing, China
www.nic-hotel.com

Conference Email

ICASS2012@gmail.com

Conference WebSite

www.ICASS2012.net
www.hkisc.org

Conference Secretary

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IMPORTANT NOTES

Instructions to speakers

Official language is English. For keynote lectures, the presentation duration is 30 minutes and, for lectures in parallel sessions, the duration is less than 15 minutes. Discussion will be at the end of each session if time is left for the respective session.

Please check your presentation according to its topic and then locate the room, time and date for your presentation. Please email ICASS2012@gmail.com for any query.

Speakers are invited to pass the biography and power-point file to the organizer at the Conference organizing counter outside the lecture rooms at least one hour before the lecturing session. For early morning presentations, speakers are invited to pass the power-point file to the organizer one day before their presentations. Your powerpoint file should be compatible with Microsoft PowerPoint 2007 or earlier versions and please advise the organizer if you have any movie inside your file.

Instructions to session chairmen

Please arrive at the lecture rooms 10 minutes before the lecture starts. Introduce the speaker while he is preparing the setting up of his presentation. Please control the time for presentation by ringing bell for the speaker 3 minutes before the session ends.

Please ask for help by the session helper in setting up of presentation power-point etc. Each session will have one stand-by session helper.

Activate discussion if time is left for each session; otherwise invite the audiences to discuss with the speakers after lectures in the coffee breaks etc.

Note to all

All speakers and chairmen are invited for the conference banquet at 6:30pm for 7:00pm to 9:00 pm on 14th April 2012 in the Zijin Restaurant, The International Conference Hotel Nanjing.

For all participants, please telephone **Conference Secretary Members (*Listed in the above page*)** in case of assistance required.

TECHNICAL PROGRAM

FRI – 13 APR	SAT –14 APR	SUN –15 APR	MON –16 APR
	0800 Registration (Lobby, 1st floor)		
	0830 – 0900 Opening Ceremony (Peace Hall, 2nd floor)	**0830 – 1000 Keynote Lectures SU1** (Peace Hall, 2nd floor) SU1H: Keynote Lecture by *J.Y.R. Liew* Keynote Lecture by *D. Camotim* Keynote Lecture by *D. Lam*	**0830 – 1030 Concurrent Sessions MO1** MO1A: IJSSD Symposium III- Plates and shells MO1B: Connections II MO1C: Frames & Trusses II MO1D: Fatigue & Material II & Retrofitting
	0900 – 0920 Take photograph (1st floor)		
	0920 – 1050 Keynote Lectures SA1 (Peace Hall, 2nd floor) SA1H: Keynote Lecture by *Y.B. Yang* Keynote Lecture by *K. Rasmussen* Keynote Lecture by *G.Q. Li*		
	1050 – 1100 Coffee Break (Tea Plaza, 1st /2nd floor)	**1000 – 1015 Coffee Break** (Tea Plaza, 1st /2nd floor)	**1030 – 1045 Coffee Break** (Tea Plaza, 1st /2nd floor)
0930 – 2000 **Registration** (Lobby, 1st floor)	**1100 – 1230 Concurrent Sessions SA2** SA2A: IJSSD Symposium I-Numerical Methods SA2B: Composite Construction I SA2C: Projects & Space Structures & Arches I SA2D: Seismic Engineering I	**1015 – 1230 Concurrent Sessions SU2** SU2A: IJSSD Symposium II- Beams, Trusses and Frames SU2B: Composite Construction II SU2C: Projects & Space Structures & Arches II SU2D: Seismic Engineering II	**1045 – 1230 Concurrent Sessions MO2** MO2A: Beams & Columns II MO2B: Bridges MO2C: Fire Engineering II & Frames & Trusses III MO2D: Cold-formed & Light-gauge Structures
	1230 – 1330 Lunch (Rose Garden, 1st floor)		
	1400 – 1600 Concurrent Sessions SA3 SA3A: Dynamics & Damage Detection SA3B: Connections I SA3C: Frames & Trusses I SA3D: Fatigue & Material I	**1400-1800** **Technical Tour** Nanjing No.4 Yangtze River Bridge Southeast University New Stadium	1400 – 1500 Keynote Lectures MO3 (Peace Hall, 2nd floor) MO3H: Keynote Lecture by *R. Zandonini* Keynote Lecture by *Y.J. Shi*
	1600 – 1615 Coffee Break		**1500 – 1515 Coffee Break**
	1615 – 1745 Concurrent Sessions SA4 SA4A: Beams & Columns I SA4B: Fire Engineering I SA4C: Plates & Shells I SA4D: Nonlinear Analysis & Progressive Collapse		**1515 – 1600 Closing Ceremony** (Peace Hall, 2nd floor)
1730 - 2000 **Dinner** (Rose Garden, 1st floor)	**1830 -** **Welcome Banquet** (Zijin Restaurant)	**1830 -** **Dinner** (Confucius Temple Scenic Areas)	**1800 -** **Dinner** (Rose Garden, 1st floor)

Conference Venue: Zijin Building, The International Conference Hotel Nanjing（南京国际会议大酒店 紫金楼）
Room A —— Scarlet Kaffirlily Hall, 2nd floor（君子兰厅） Room B —— Tulip Hall, 2nd floor（郁金香厅）
Room C —— Jasper Hall, 1st floor（碧玉厅） Room D —— Lilac Hall, 2nd floor（紫丁香厅）
NOTE: SA2A (i.e. SA-2-A) means SAturday, the 2nd group of lectures (including Keynote Lecture) in Room A.

TECHNICAL PROGRAM

Friday, 13 April 2012

REGISTRATION **0930-2000**

Saturday, 14 April 2012

REGISTRATION **0800**

OPENING CEREMONY **0830-0900**
Session SA0H in Peace Hall

TAKE PHOTOGRAPH **0900-0920**

KEYNOTE LECTURES SA1 **0920-1050**
Session SA1H in Peace Hall

Keynote Lecture I
Chairman: J.Y.R. Liew, National University of Singapore, Singapore

A rigid-body-qualified plate theory for nonlinear analysis of structures involving torsional actions
Y.B. Yang, Taiwan University, Taiwan, China

Keynote Lecture II
Chairman: R. Zandonini, Trento University, Italy

System-based design of steel scaffolding structures using advanced analysis
K. Rasmussen, University of Sydney, Australia

Keynote Lecture III
Chairman: D. Camotim, Technical University of Lisbon, Portugal

Research for Application of High Strength Structural Steels in Seismic Zones
G.Q. Li, Tongji University, China

COFFEE BREAK **1050-1100**

CONCURRENT SESSIONS SA2 **1100-1230**

Session SA2A in Room A
IJSSD Symposium I-Numerical Methods
Chairmen: S. Kitipornchai, City University of Hong Kong, HK, China

On the applicability of Hilbert-Huang Transform for analysis of a two-member truss in vibration
Y.B. Yang, C.T. Chen and K.C. Chang
On mode orthogonality of complex structures
W. Q. Chen, Y. Q. Guo and Y. -H. Pao

Estimation of dynamic response of structural elements subject to blast and impact actions using a simple unified approach
Yi Yang, R. Lumantarna, N. Lam, L.h. Zhang and P. Mendis
Energy absorption of carbon nanotube subjected to impact loads
Ke Nan Feng, Edmund J. Hunter, W. H. Duan and X. L. Zhao
Finite element method to determine critical weight of flexible pipe conveying fluid subjected to end moments
C. Athisakul, B. Phungpaingam, W. Chatanin and S. Chucheepsakul
A broad frequency vibration analysis of built-up structures with modal uncertainties
H. A. Xu and W. L. Li
Dynamic analysis by Kriging–based finite element methods
W. Kanok-Nukulchai and C. Wicaksana

Session SA2B in Room B
Composite Construction I
Chairmen: B. Uy, University of Western Sydney, Australia

Buckling resistance of steel and high-strength-concrete circular columns
M. Karmazínová
Research on the confined model for concrete filled thin-walled steel tube square stub column
Y. Chen, Z. F. Dong, J. Gao and Y. C. Zhang
Hysteretic experiments of extended end plate joints to concrete filled steel tubular columns
J. F. Wang, Z. Jiang, L. Zhang and X. Y. Chen
An experimental study on full scale composite joints to concrete filled steel tubular columns under cyclic loadings
J. F. Wang, Z. Jiang, T. Jiang, W. L. Shi and W. Y. Shen
Study on flexural performances of the concrete filled circular CFRP-steel tubes （C-CFRP-CFST）
B. Zhou, Q. L. Wang and Y. B. Shao
Experimental investigation of shear connectors in partially-restrained steel frame with RC infill walls
G. H. Sun, W. X. Yang, Q. Gu, R. Q. He and Y. Z. Fang
Steel-concrete composite beam with a new type of shear connectors
B. S. Huang， X. Y. Shi and G. Z. Huang
Steel-wood composite bridge and steel-wood connection
M. Z. Fu, Y. J. Liu and N. Li

Session SA2C in Room C
Projects & Space Structures & Arches I
Chairmen: X.T. Wang, Ningbo University, China

Parametric analysis for stability behaviors of kiewitt single layer latticed spherical shells with stochastic imperfections
G. Tang, L. F. Yin, X. M. Guo, L. Y. Lian and F. W. Wang
Research on non-bracket tow-lifting construction technology and a complete process analysis of a cable dome
Z. X. Guo, B. Luo, F. Gao and G. P. Ding
The reliability analysis of suspend-dome under the influence of construction error
Z. Zhou, Z. G. Zhou, S. P. Meng, Z. X. Ding and M. Hong
Similarity analysis of sheet space structure
T. J. Jin, X. M. Guo, H. Xia, N. L. Zhang and J. Cui
Pretension control process objective analysis of long-span suspen-dome
Y. Q. Wang, Z. Zhou, Z. X. Guo, B. Luo, C. Hui and Y. B. Ye

Stability analysis on long-span spherical suspen-domes of low rise-span ratio
Y. Q. Wang, Z. Zhou, Z. X. Guo, B. Luo, Z. Ding and H. Man
Analysis of mechanical properties for large-span steel structure during different construction process
J. P. Hao, L. M. Tian, R. Bai and Y. Wang

Session SA2D in Room D
Seismic Engineering I
Chairmen: Y.Y. Chen, Tongji University, China

Investigation of a new type of mild steel plate damper with drum shaped opening
Z. J. Li, Z. Huang, A. Q. Li and P. Sun
Study on seismic behavior of frame structure with high-strength concrete filled square steel tubular column with inner CFRP circular tube - I-shaped steel beam based on openseesnavigator
G. C. Li, C. Y. Zhang and C. Fang
A seismic performance study on beam-to-column connections with beam-end horizontal haunch of steel frame
L. Y. Zhang, Y. Wang, Y. T. Wang and Y. S. Yu
Seismic tests and FEA of the strengthen-weakened modified beam-to-column connections in steel moment frame
Y. X. Zhang, F. Yang and L. Y. Wang
Research on effects of bracing location on bracing forces of longitudinal column-bracing systems
J. Y. Zhao and S. C. Teng
Mathematical modeling for the hysteretic response of yielding shear panel device (YSPD)
M. R. Hossain and M. Ashraf
The seismic behavior of suspended megastructure of concrete filled steel tube lattice columns
Y. T. Gao, X. Hu and G. Wang

MONDAY LUNCH 1230-1330

CONCURRENT SESSIONS SA3 1400-1600

Session SA3A in Room A
Dynamics & Damage Detection
Chairmen: W.Q. Chen, Zhejiang University, China
F.W. Wang, Nanjing University of Aeronautics and Astronautics, China

Development and experimental testing of steel post-tensioned connections with innovative seismic energy dissipaters
G. Vasdravellis, T. L. Karavasilis and B. Uy
A cable force estimation method for cable-truss structures based on static displacement measurement
G. Y. Tian, Y. L. Guo, X. A. Wang, K. Wang and B. H. Zhang
Finite element analysis on the natural frequency of a wind turbine tower under different boundary constaints
J. J. Wang, G. Shi, Y. J. Shi and Y. Q. Wang
Damping identification for closely spaced modes with wavelet-based demodulation method
P. Sun, A. Q. Li, Y. L. Ding and Z. J. Li
A novel numerical technique for predicting fluctuating wind loads on a tall steel building
C. R. Zheng, Y. C. Zhang and H. Li
Wind tunnel test on aeroelastic model of 500kV transmission line system
C.Y. Duan, H. Z. Deng, X. H. Jin and Z. H. Wang

Vibration control analysis for large-span steel floors system based on human comfort
Z. Q. Zhang, M. Y. Huang, M. Y. Qi and A. Q. Li
Wind-induced response analysis in strong winds for monolayer cable net curtain wall
L.F. Yin, G. Tang, J. Cui and B. J. Wang
Analysis on wind-induced vibration response of cable-stayed lattice structure
G. S. Bian, Y. M. Zhang and B. Guo

Session SA3B in Room B
Connections I
Chairmen: X.P. Shu, Hunan University, China
S. Herion, Vallourec & Mannesmann Tubes, Germany

Experimental analysis on the local buckling behavior at panel zone of beam-to-column connection in steel gabled frames
Y. Shi, Y. Chen, Y. Xu and X. Z. Zhao
Joints composed of various sections their behavior and resistance
K. Vincent, B. Pavol and R. Vargová
Fracture behavior analyses of welded flange-bolted wed connection of steel structure
Y. P. Sun and Z. L. Teng
Experimental study on bending capacity of multiplanar RHS-to-CHS TT-joints in space trusses
L. W. Tong, Y. Y. Hu, Y. Y. Chen and Z. M. Yin
Constitutive relation of end plate connections based on correlation and sensitivity
J. R. Pan, Z. Wang, L. Q. Zheng and C. Gong
Analysis of semi-rigid boltless beam-to-column connectors in steel storage racks
Z. Y. Wu, B. Cheng and Y. Zhang
Study on tensile bearing behavior of reinforced gusset plate connections to slotted tubes
X. P. Shu, Z. S. Yuan, Z. L. Ding, H. Zou and Y. S. Ding
Full-scale experiment research on K and KK joints
X. P. Shu, Y. Yao, S. N. Zhu, Z. S. Yuan and B. R. Lu
The effect of yield-to-ultimate ratio on the bolted connection under static shear
B. Pan, Y. J. Shi and Y. Q. Wang

Session SA3C in Room C
Frames & Trusses I
Chairmen: G.S. Tong, Zhejing University, China
J.L. Peng, Yunlin University of Science & Technology, Taiwai, China

Development of limit state criteria for drive-in steel racks under forklift truck impact
H. Zhang, B. P. Gilbert and K. J. R. Rasmussen
Stability behavior of the circular arch with steel tube-truss
Y. Lu and Q. H. Han
Study on static and dynamic behaviors of truss string structure with double cables
G. G. Liu, Z. W. Wu and J. Cai
Parameters influence on lateral load-displacement curve of steel plate-brick masonry composite frame
G. L. Zhang, D. H. Jing and S. Y. Cao
Load-carrying capacities of shoring structures used in construction
J. L. Peng, P. L. Wang and Y. B. Yang
Effect of member initial stresses on space truss
M. Q. Liu, X. X. Du and L. W. Zhu
Equivalent bending stiffness of truss based on continuum assumption
J. Wu, M. Yang, M. Li, C. Wang and L. Wang

Preon - the flexible standard in hall construction
O. Josat
Experimental study on moment modulation of partially prestressed frames
X. Y. Xiong, C. Cheng, Y. Li and P. Lv

Session SA3D in Room D
Fatigue & Material I
Chairmen: B. Young, The University of Hong Kong, HK, China
L. Gardner, Imperial College of London, UK

Experimental study on fatigue behavior of SRC beam-to-CFRHS column connections in high speed railway station
Q. J. Xian, L. W. Tong, L. Y. Zhou, Y. Y. Chen and E. Xie
Experimental study on fracture toughness of butt weld of Q460C high-strength construction steel
Y. Q. Wang, Y. Lin, Y. N. Zhang and Y. J. Shi
The analysis on mechanics performance of CFRP lamina reinforce in multi-function bridge under high temperature environment
X. Yuan, J. W. Zhang, S. T. Song and Z. P. Feng
Flexural strength analysis of hybrid girders fabricated from high performance steel
L. Duan, L. Zheng, C. S. Wang and J. M. Wang
Static test of a full-scale orthotropic steel deck model
C. S. Wang, B. N. Fu, Q. Zhang and Y. C. Feng
Fatigue of CFRP strengthened steel connections under combined actions
H. B. Liu and X. L. Zhao
Full-scale fatigue test of orthotropic steel deck
C. S. Wang, B. N. Fu, Q. Zhang and Y. C. Feng
Experimental study of fatigue performance of tempered glass panels under cyclic loading
G. P. Shu, H. Y. Li and R. H. Lu
Test on stainless steel welded I-columns
G. P. Shu, B. F. Zheng and X. M. Shen
Application progress of fiber reinforced plastics in civil engineering
K. Fu and W. Wang

COFFEE BREAK 1600-1615

CONCURRENT SESSIONS SA4 1615-1745

Session SA4A in Room A
Beams & Columns I
Chairmen: P.Z. Cao, Hohai University, China

Experimental study on the local buckling behavior of 460Mpa steel welded square box section columns under axial compression
G. Shi, C. C. Lin, Y. Q. Wang and Y. J. Shi
Steel I-beams with varying section: investigation into optimal geometry
C. Thirion, P. Greening, S. Hanna and P. Winslow
Experimental investigation of residual stresses in welded high strength steel H-sections
Y. B. Wang, G. Q. Li and S. W. Chen
Economy comparison of double limbs lattice steel column under unidirectional eccentric load
Y. F. Wang, P. Z. Cao and K. Wu
Prediction of the cross-section capacity of hot-rolled profiles using the direct strength method and the continuous strength method

Y. Li and B. Rossi

Behaviour and design of composite beams under bending and axial tension

G. Vasdravellis, B. Uy, E. L. Tan and B. Kirkland

Formulation and implementation of three-dimensional doubly symmetric beam finite elements with warping effects in opensees

X. Zhang, K. J. R Rasmussen and H. Zhang

Compression tests of cold-formed steel channel columns with complex edge stiffeners and intermediate stiffeners

C. G. Wang and Z. N. Zhang

Session SA4B in Room B

Fire Engineering I

Chairmen: *J.C. Zhao*, Shanghai Jiaotong University, China

Refined FE model to predict the temperature field within concrete-filled steel tubes

Z. Tao and M. Ghannam

Method for calculation of the tension cable limited loading capacity at elevated temperature

Y. Du and Y. Z. Lu

Material degradation of Q345 cold-formed steel under elevated temperatures

W. Chen, J. H. Ye, X. L. Zhao and Y. Bai

Simplified probability-based assessment of a safety level for unrestrained steel beam exposed to fire

M. Maślak

Development of a pilot furnace for testing structural steels under standard fire model

J. A. Trilleros, S. Mato and I. Huertas

Parametric study and design method on fire resistance of concrete encased steel (CES) columns under 3-side heating

X. Y. Mao, W. H. Gao and L. L. Li

Numerical investigation of behaviour of cold-formed steel sheeting systems in fire

W. Lu, P. Mäkeläinen, J. Outinen and Z. Ma

Experimental study of mechanical behavior of the restrained h-steel columns after exposure to fire

X. T. Wang, H. L. Sun and M. Zhou

Session SA4C in Room C

Plates & Shells I

Chairmen: Y. Zhao, Zhejiang University, China

Study on the equivalent thickness of stiffened spherical shell for large scale cylinder gasholder piston

D. Y. Jia, W. Y. Liu, D. J. Jiang and P. Z. Cao

Improved shape of circumferential weld-induced imperfections for tapered-wall cylindrical shells

Z. Wang and Y. Zhao

Numerical simulation of residual stress and damage distribution in welding thick steel plate

S. Lin, N. Yang, B. F. Fan and L. Qiao

Temperature effects on the buckling of large flat-bottom squat steel silos for alumina

Y. H. Yang and Y. Zhang

Numerical simulation of wind loads on large steel tanks

Y. Lin and Y. Zhao

Experimental research on performance of lightweight energy-saving composite wall on the vertical and lateral loads

Y. Q. Guo, P. Z. Cao and X. F. Dong

Distinct element method analysis for bending capacity of metal skinned sandwich composite panel

X. X. Zha, Y. Fan and C. Y. Wan

Research on the simplified analytical model for stiffened steel plate shear wall with slits
J. Y. Lu, L. N. Yan, S. G. Fan and H. H. Wang

Session SA4D in Room D

Nonlinear Analysis & Progressive Collapse

Chairmen: S.L. Chan, The Hong Kong Polytechnic University, HK, China

On the modelling of geometric imperfections of steel structural members and frames
S. Shayan, K. J. R. Rasmussen and H. Zhang

The inelastic behavior of perforated sections under axial compression
Z. Y. Yao and K. J. R. Rasmussen

Static equilibrium form-finding analysis of cable-strut system based on a nonlinear dynamic finite element method
B. Luo, Z. X. Guo, F. Gao and K. Wang

Nonlinear finite element analysis of high-strength bolt splices
J. S. Fan, X. G. Liu and J. G. Nie

The dynamic analysis of progressive collapse for steel tower structure
S. G. Fan, J. Liu, M. J. Liu and C. L. Liu

Collapse behavior of tall core-outrigger structures under severe earthquakes
F. F. Sun, R. X. Ge and J. M. Xu

A planar membrane element for nonlinear shear analysis of steel plate-concrete composite structures based on RA-STM
J. G. Nie and M. Zhou

Geometric and material nonlinear torsional analysis of steel members
Y. L. Pi and M. A. Bradford

WELCOME BANQUET 1830-2100

Sunday, 15 April 2012

REGISTRATION **0800**

KEYNOTE LECTURES SU1 **0830-1000**
Session SU1H in Peace Hall

Keynote Lecture IV
Chairman: Y.J. Shi, Tsinghua University, China

Futher investigation on composite columns with high strength steel and ultra-high strength concrete
J. Y. R. Liew, National University of Singapore, Singapore

Keynote Lecture V
Chairman: K. Rasmussen, University of Sydney, Australia

Behaviour and design of thin-walled angle columns: geometrical simplicity vs. structural complexity
D. Camotim, Technical University of Lisbon, Portugal

Keynote Lecture VI
Chairman: Y.B. Yang, Taiwan University, Taiwan, China

Predicting unfavourable stud capacity in composite beams with profile decking
D. Lam, Bradford University, UK

COFFEE BREAK **1000-1015**

CONCURRENT SESSIONS SU2 **1015-1230**

Session SU2A in Room A
IJSSD Symposium II- Beams, Trusses and Frames
Chairmen: J.N. Reddy, Texas A&M University, USA

Some conceptual issues in the modelling of cracked beams for lateral-torsional buckling analysis
N. Challamel, A. Andrade and D. Camotim
On the mechanics of angle column instability
P.B. Dinis, D. Camotim and N. Silvestre
Instability of variable-arc-length elastica subjected to end moment
B. Phungpaingam, C. Athisakul and S. Chucheepsakul
Dynamics of a Duffing-van der Pol oscillator with time delayed position feedback
A.Y.T. Leung, Z.J. Guo and H.X. Yang
Anti-seismic reliability analysis of continuous rigid-frame bridge based on ANSYS
Y.L. Jin
Fracture mechanics analysis of steel connections under combined actions
H.B. Liu and X.L. Zhao
Second-order analysis for long span steel structure protecting a heritage building
Y.P. Liu, S.W. Liu, Z.H. Zhou and S.L. Chan
Buckling behaviour of continuous beams and frames subjected to patch loading
C. Basaglia and D. Camotim
Nonlinear vibration of functionally graded piezoelectric actuators

J. Yang, Y.J. Hu, S. Kitipornchai and T. Yan

Session SU2B in Room B

Composite Construction II

Chairmen: *Z. Wang*, South China University of Technology, China
Z. Tao, University of Western Sydney, Australia

The development of rectangular concrete filled tube column to steel beam connections
Z. H. Chen, Y. Qin and J. J. Bai

Numerical simulation on steel reinforced concrete beam-to concrete-filled steel tubular column under cyclic loading
C. Y. Zhao, H. Li, and L. Y. Li

Fiber beam-column model considering the slab spatial composite effect in steel-concrete composite frame structures
M. X. Tao and J. G. Nie

Analysis on influence factor of behavior of connection with outer diaphragm between CFSSTCs and steel beams
B. S. Huang, P. Y. Du and Y. L. Ge

Design study of CFSSTCs and steel beams joint with vertical stiffener
B. S. Huang, P. Y. D and X. Y. Shi

Experimental analysis of concrete-filled steel SHS and RHS columns
M. Mimoune and F. Z. Mimoune

A new theoretical model for analyzing torsion behavior of concrete filled steel tube columns under pure torsion
J. G. Nie, Y. H. Wang and J. S. Fan

Ultimate bearing capacity factor analysis for large size square concrete filled steel tube columns
X. Lv and G. P. Shu

Design and application of the long-span steel-concrete composite structure
J. G. Nie and R. Ding

Experiment study and FEM analysis of the composite structure composed by steel beam and concrete girder
Z. D. Lu, J. H. Liao and J. T. Yu

Session SU2C in Room C

Projects & Space Structures & Arches II

Chairmen: Z.H. Chen, Tianjin University, China
R.Q. Feng, Southeast University, China

The form-finding of cable domes by dynamic relaxation method
X. Ying and X. Zhuo

Integrated optimization for free-form space grid structures based on energy method
N. Li. and J. Y. Lu

Stability analysis of grid shell with semi-rigid joints
R. Q. Feng, B. Yao and J. H. Ye

Support analysis and unloading research on solid-web frame in Hefei Xinqiao airport
H. Y. Wan, Q. F. Li and X. H. Du

Analysis of selection of boee center's structure schemes
Z. Q. Chen, W. Xu, Y. Zhang and D. S. Yang

Form analysis of suspen-dome structures considering construction process
Z. Zhou, Y. L. Feng, S. P. Meng, Y. Q. Wang, H. Chen and Y. B. Ye

Installation and monitoring analysis of ring-shaped ferris wheel structure
K. Y. Duan, Z. X. Guo and J. H. Zheng

Out-of-plane buckling of roller bent wide flange arches imperfections and finite element modeling
R. C. Spoorenberg, H. H. Snijder, J. C. D. Hoenderkamp and D. Beg
Optimization design of curtain wall under the requirements of green mark certification
Z. W. Wu, G. G. Liu and Z. C. Sun
Analysis of tensigrity construction simulation of ring-shape tensile structure
Y. L. Geng, W. B. Sun and W. X. Zhou
Coordinate-based form-finding of irregular tensegrity: analysis and implementation
J. Y. Lu, N. Li, G. P. Shu and X.L. Zhao

Session SU2D in Room D
Seismic Engineering II
Chairmen: L.W. Tong, Tongji University, China
C.L. Wang, Southeast University, China

Pushover analysis of steel staggered truss structure
Q. S. Guo and Q. S. Yang
Residual seismic performance evaluation of a damaged steel frame structure
H. D. Zhang and Y. F. Wang
Study on seismic performance of Y-eccentrically braced frames links
B. C. Zhao and A. L. Yu
Energy dissipation analysis of a hybrid frame-core tube structure with three-dimensional model
Z. W. Miao, Z. Y. Qiu and A. Q. Li
Improving safety margin of buckling-restrained braces against multiple earthquakes
C. L. Wang, T. Usami, F. Imase and J. Funayama
Resonant behavior of core-outrigger structure with fuses
F. F. Sun and L. Sheng
Analysis of hysteretic behavior for unbonded steel plates or steel bars installed between the upper and lower concrete shear walls
Y. K. Ding, W. Y. Zhang, W. Wang, and Y. C. Zhang
Performance testing of buckling-restrained brace with I cross section unrestrained segment
M. M. Jia, L. Sun, S. M. Zhang and D. G. Lü
Nonlinear time-history analysis of a complex high-rise building with diagonal gird structure
R. Pang, S. T. Liang, X. J. Zhu, M. F. Gong, T. Dai, B. Leng and R. Y. Jin
Friction damper devices for seismic performance improvement of steel frames
M. Valente
Seismic upgrade of steel frames using dissipative knee bracing elements
M. Valente

SUNDAY LUNCH	**1230-1330**

TECHNICAL TOUR	**1400-1800**

DINNER	**1830-2100**

Monday, 16 April 2012

REGISTRATION **0800**

CONCURRENT SESSIONS MO1 **0830-1030**

Session MO1A in Room A

IJSSD Symposium III- Plates and shells

Chairmen: C.M. Wang, National University of Singapore, Singapore

Modified couple stress theories of functionally graded beams and plates
J.N. Reddy and J. Kim

Dynamic stability of piezoelectric braided composite plates
S. Kitipornchai, J. Yang, T. Yan and Y. Xiang

Reducing hydroelastic response of very large floating structures using flexible line connector and gill cells
C.M. Wang, R.P. Gao and C.G. Koh

Assessment of shell and membrane models for predicting wrinkling phenomenon in annular graphene under in-plane shear
Z. Zhang, W.H. Duan and C.M. Wang

Nondestructive method for predicting buckling loads of elastic spherical shells
Shahin Nayyeri Amiri and Hayder A. Rasheed

Molecular dynamics simulations results for axial buckling of double walled carbon nanotubes
A.N.R. Chowdhury and C.M. Wang

Investigation on efficiency of water transport through single-walled carbon nanotubes
M. Z. Sun, W. H. Duan and M. Dowmam

Free vibration and buckling characteristics of composite panels having anisotropic damage in a single layer
P.K. Datta and S. Biswas

Session MO1B in Room B

Connections II

Chairmen: X. Sun, Architectural Design & Research Institute of Southeast University, China

Experimental study on the influence of stiffening ring on bearing capacity of tubular-plate joint
X. B. Wei, Y. L. Peng, J. F. Yang and H. B. Li

FEM-analysis of beam-column rigid joints transferring forces outside box columns
Z. G. Xu, D. R. Cheng and C. G. Deng

Transmission of warping through joints of steel frames
S. Shayan, K. J. R. Rasmussen and H. Zhang

Analysis of influencing factors for bearing performance of high strength bolted connection in stainless steel which carried shear force
J. Guan, Y. Q. Wang, Y. Zhang and Y. J. Shi

Analysis of moment-rotation curve for semi-rigid joint of extended end plate connection
L. Wang, B. S. Liu and X. T. Dong

Static behavior of partially overlapped tubular N-joints of square chords with circular braces
X. P. Shu, Z. S. Yuan, Z. R. Zhu, Y. Yao and B. R. Lu

Development and research on a series of plate joint
M. H. Wang and S. S. Shi

Finite element analysis of wide-type large capacity end-plate connections
G. Shi, H. Fan, Y. J. Shi and Y. Q. Wang

The influence of the angle of ribbed stiffener and the multi-directional loads on the welded hollow spherical joints
J. T. Yu, Y. M. Zhang, K. Q. Yu and B. Tang

Session MO1C in Room C
Frames & Trusses II
Chairmen: *J. Wu*, Southeast University, China

Wind loading and its effects on light-weight buildings with gabled frames
X. K. Jing and Y. Q. Li
Experimental study on tension-only concentrically braced frame with stiffened beam-through connections
Q. Zhou, W. Wang, Y. Y. Chen and L. W. Tong
Co-rotational formulation of second order analysis of panel and walled frame systems
F. W. Wang, G. Tang and S. L. Chan
Benchmark example for advanced analysis of semi-rigid steel frame
S. L. Chan and Y. P. Liu
Combined sway & non-sway buckling and storey-based stability factors of steel frames
G. S. Tong, P. Y. Lin and G. R. Xing
Optimal stiffness-based structural design of steel braced tube systems for tall buildings
K. S. Moon
Optimal structural design and construction of steel diagrid systems for tall buildings
K. S. Moon
Nonlinear dynamic response of compound structure using inter-story isolation
N. Sun and G. P. Shu

Session MO1D in Room D
Fatigue & Material II & Retrofitting
Chairmen: G. Shi, Tsinghua University, China

Residual stress influence on multiple contact fatigue
M. J. Pazdanowski
Fatigue cracking monitoring and evaluation using AE sensors for existing steel bridges
C. S. Wang, L. Tian and B.N. Fu
Exploiting strain hardening in structural steel design
F. Wang, A. Liew and L. Gardner
Behaviour and design of indeterminate stainless steel structures
L. Gardner and N. Saliba
Flexural behavior of steel beams strengthened with fiber reinforced composite plates
H. T. Wang, G. Wu, Z. S. Wu and H. Y. Liu
Experimental study on fast repair of equal-angle steel lattice column with GFRP pultruded profiles
Y. Zhan, G. Wu, M. Yang and L. S. Yang
Experimental research on slender circular tubular steel braces strengthened by carbon fiber reinforced polymer
X. Y. Gao, Y. J. Liu, T. Balendra and C. G. Koh
Seismic performance of school buildings strengthened by light steel braces
H. Zhou, P. Z. Cao and K. Wu
A boundary element analysis of non-load-carrying cruciform welded joints strengthened with FRP materials
T. Chen, X. L. Zhao, X. L. Gu and Z. G. Xiao
Seismic behavior of steel plate shear walls
L. Zhu and J. G. Nie

COFFEE BREAK 1030-1045

CONCURRENT SESSIONS MO2 1045-1230

Session MO2A in Room A

Beams & Columns II & Plates and Shells II

Chairmen: Y. Xi, Nanjing University of Science and Technonlogy, China
Y.M. Tu, Southeast University, China

Numerical simulation of residual stresses in welded monosymmetric I-section and comparison with experimental measurements
Z. N. Zhang, C. G. Wang and L. Hu

Economical contrast of double limbs lattice steel column under axial compression load
X. Tan, P. Z. Cao and K. Wu

Beam-element-based analyses of locally and distortionally buckled columns
X. Zhang, K. J. R Rasmussen and H. Zhang

Dynamic behaviors of hot-rolled steel beams under drop weight impact loading
J. S. Huo, J. Q. Zhang B. S. Chen and Y. Xiao

Numerical simulation of internal explosion loading in large cone-roof cylindrical tanks
K. Hu, Z. Wang and Y. Zhao

Finite element analysis of steel plate reinforced high-strength concrete composite shear walls
J. G. Nie and H. S. Hu

Comparative study on design methods for unstiffened steel plate shear wall in different codes
J. Xu, Y. J. Shi, G. X. Dai, Y. Q. Wang and W. B. Yang

Simulation of silo discharge in particle flow code and research of solids pressure on silo wall
C. Zhang and G. P. Shu

Finite element analysis and parametric study on the stability of dendritic column
J. Lv and Q.L. Zhang

Session MO2B in Room B

Bridges

Chairmen: C.S. Wang, Chang'an University, China
H. Wang, Southeast University, China

Experimental verification and analysis of temporary bridge structure actual behaviour
M. Karmazínová , J. J. Melcher , M. Pilgr and M. Štrba

Post-evaluation of the fired concrete bridges repaired by steel plate and concrete composite strengthening technique
C. S. Wang, L. P. Liu, L. J. Feng and Z. Y. Yuan

Ductility evaluation of stiffened steel pipe-section bridge piers under cyclic loading
S. B. Gao and Y. Li

Innovative design and applications of U-shaped girder in bridge engineering
C. S. Wang, H. T. Li and G. F. Ren

The experiments on bond length of CFRP lamina under the effect of high temperature environment
B. T. Huang, X. Yuan and S. T. Song

Seismic analysis on extra-dosed cable-stayed bridge with corrugated steel web PC combined box girder
Y. R. An, S Zeng and G Zheng

Parameter sensitivity analysis of flutter stability and its application on TaiZhou bridge
H. Wang, J. Niu and Z. Zong

Research on effective length factor of tower column lengthwise buckling in steel truss bridge stiffened with rigid cables
S. Z. Liu, Y. J. Liu, J. G. Zhang and W. Q. Yao

Session MO2C in Room C

Fire Engineering II & Frames & Trusses III

Chairmen: X.Y. Mao, Suzhou University of Science and Technology, China
Y. Du, Nanjing University of Technology, China

Screwed connection tests of light gauge steel at elevated temperatures
S. Yan and B. Young
3D temperature fields in shot-nailed cold-formed steel sheeting joints
Z. Ma, W. Lu, P. Mäkeläinen and J. Outinen
The experimental research on fire-resistant performance of high-strength bolt connection
S. G. Fan, G. P. Shu and C.S. Huo
Parametric study on the residual deformation of eccentric compression SRC columns after heating and cooling
E. F. Du, G. P. Shu and X. Y. Mao
Comparison between first and second order elastic analysis of steel frame
J. Sun, H. X. Qiu and Y. Shao
A design method for a new type of assembled steel buckling-restrained braces
X. A. Wang, Y. L. Guo, G. Y. Tian and Z. Q. Jiang
Finite-deformation theory analysis and test research of ultimate strength for steel frames
X. P. Shu, B. R. Lu, P. S. Shen and Y. Yao
Material behaviour of high strength structural steel S460 in fire and after fire
X. Qiang, F. S. K. Bijlaard and M. H. Kolstein
Computational model of numerical analysis of pre-stressed steel structure with semi-rigid connection in fire
X. T. Wang, M. Zhou and J. Y. Zhang

Session MO2D in Room D

Cold-formed & Light-gauge Structures

Chairmen: H.H. Lau, Curtin University Sarawak Campus, Malaysia

GBT -based elastic-plastic analysis of cold-formed steel members
M. Abambres, D. Camotim and N. Silvestre
Direct strength design of high strength complex C-sections in pure bending
C. H. Pham and G. J. Hancock
Calculation of the buckling of cold-formed thin gauge purlins connected to sheeting
Y. Q. Chen
Parametric analysis of hysteretic performance of the C-section columns of cold-formed steel
X. Peng, X. Q. Cheng , Y. Guo and L. Giao
FRP strengthening of lean duplex stainless steel hollow section subjected to end bearing load
S. M. Z. Islam and B. Young
A parametric study on the modified slenderness ratio for cold-formed steel built-up back-to-back channel stub column
H. H. Lau and T. C. H. Ting
Flexural behaviour of purlin-roof-sheeting assemblies
J. Yang, Q. Liu and A. H. C. Chan
Optimisation of composed double-Z cold-formed steel members
I. Georgieva, L. Schueremans, L. Pyl and L. Vandewalle

MONDAY LUNCH	**1230-1330**

KEYNOTE LECTURES MO3 **1400-1500**

Session MO3H in Peace Hall

Keynote Lecture VII
Chairman: S.L. Chan, The Hong Kong Polytechnic University, HK, China

Long-term behaviour of composite steel-concrete structures: an overview of the state of the art
R. Zandonini, Trento University, Italy

Keynote Lecture VIII
Chairman: G.Q. Li, Tongji University, China

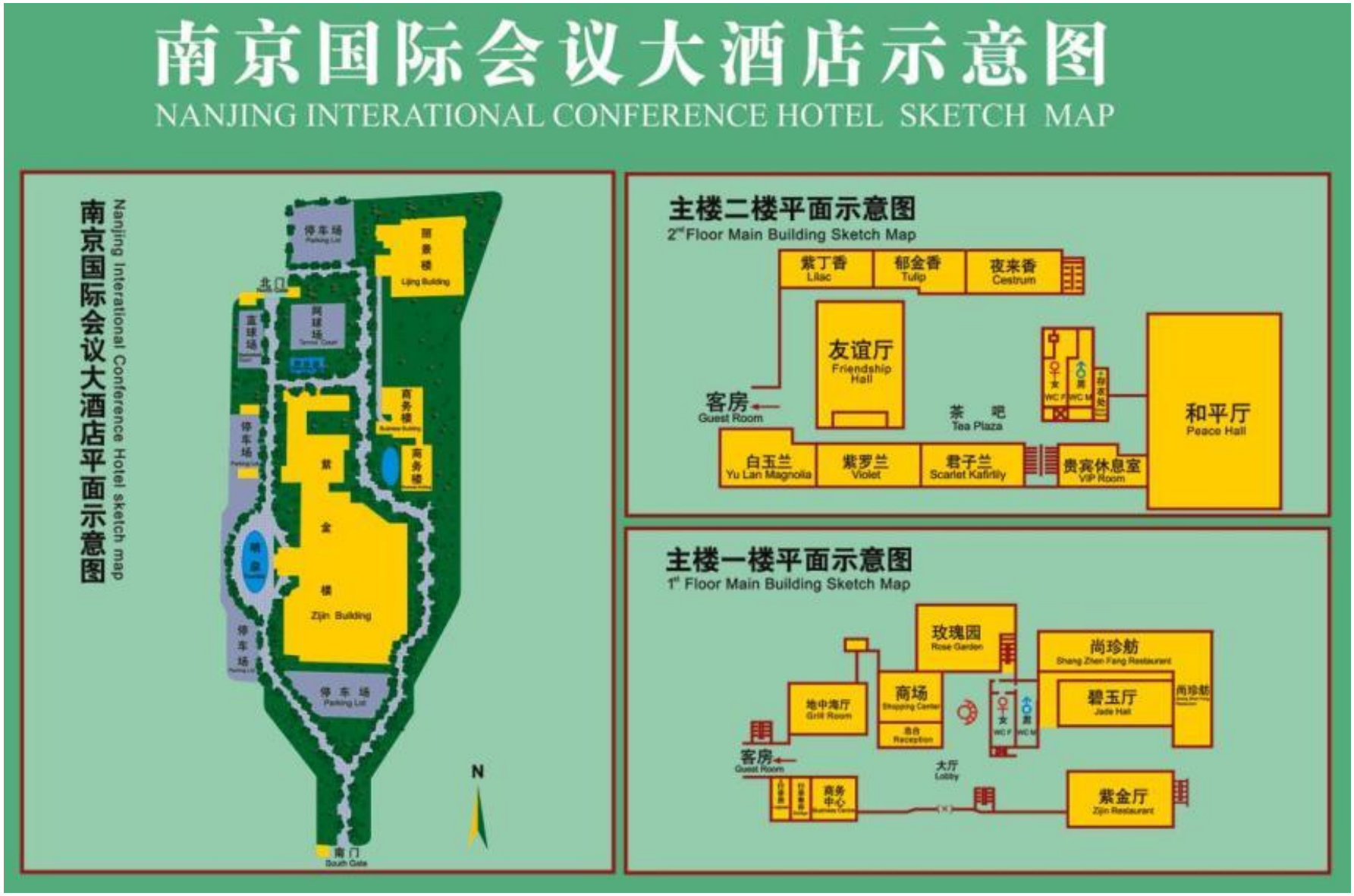
Structural performance of high strength steel applied in buildings
Y.J. Shi, Tsinghua University, China

COFFEE BREAK	**1500-1515**

CLOSING CEREMONY	**1515-1600**

DINNER	**1800-2000**

MAP OF CONFERENCE VENUE



MAP OF CONFERENCE VENUE

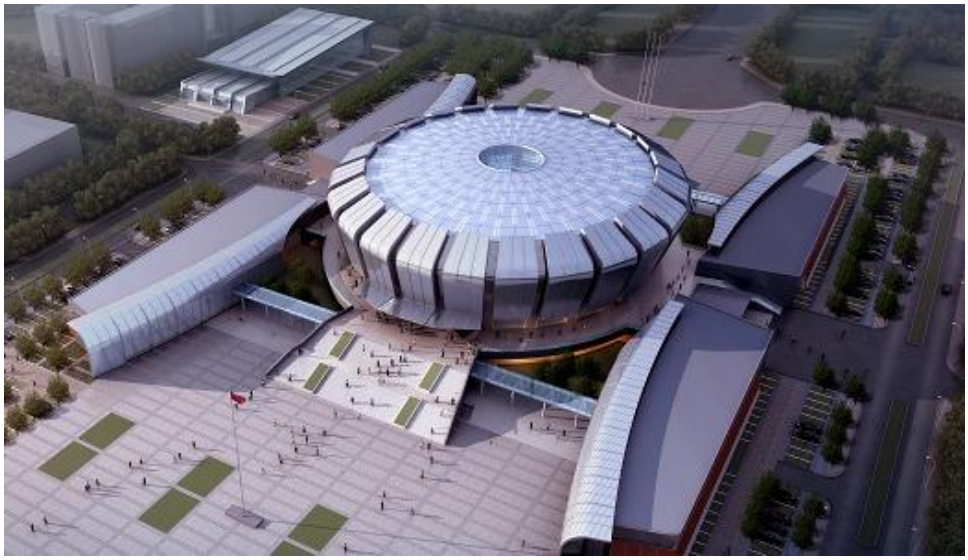
TECHNICAL TOUR I

Nanjing No.4 Yangtze River Bridge

Nanjing No.4 Yangtze River Bridge is about 10 km downstream of the Second Yangtze River Bridge; runs a length of 28.996 kilometers. The main span of the three-span suspension bridge is 1,418 meters. According to the Nanjing City Government, Nanjing No.4 Yangtze River Bridge is one of six river crossing tunnels in the blueprint of the overall city construction plan: "five bridges and a tunnel" project. It is also an important component of the State Express from Shanghai to Chengdu.

Nanjing No.4 Yangtze River Bridge is the first suspension bridge in Nanjing and the twin-tower three-span suspension bridge was accepted finally with a span arrangement of 166 m + 417 m + 1418m + 357 m + 122 m. The 1,418 meters main span takes the third among the same kind of bridges in the world. The stiff girders of main bridge adopted flat and streamlined closed thin-walled steel box girders, with 3.5 meters high, 38.8 meters wide (include the seal), and 15.6 meters long of standard segment. Mixed structure is adopted in the north tower and the south tower, which is composed of tower columns beams and arches, is 230 meters. The main cable is made of prefabricated parallel wire stands and each cable consists of 135 strands. Additional 6 wire strands (backstays) are installed at the north side span and 8 backstays are installed at south side span. Each single wire stand consists of 127 high-strength galvanized steel wires with diameter of 5.35 mm and standard tensile strength of 1770 MPa.

TECHNICAL TOUR II



Southeast University New Stadium

Southeast University (SEU) New Stadium is located in the east of SEU Jiulonghu Campus. Under the financial contribution of alumni all around the world, the stadium was finally put into construction in 2011. The whole project including a main stadium and 4 training centers will cover 56256 m^2. The roughly $10-million main stadium will seat 2996 (expandable to 4476) in a 9000 m^2, national leading venue with an innovative roof system.

Architectural Design & Research Institute of Southeast University and SEU Steel Structure R & D Center, the principal steel structural engineering team for the project, were selected in 2010 to design the stadium on the basis of their prior collaborations on national and local sports facilities. Working together closely, the two teams designed a stadium exemplifies engineering and architectural excellence and also achieves various innovative features.

The roof of the stadium is supported by a spoke beam string structure that spans 88m in long axis and 76.8m in short axis. The approximate ellipse-like outline of the roof is made up of 4 arcs. Total 24 beams are radiated from a rigid ring arranged at the center of the horizontal projection plane. The radius of the top compressive ring is 6m while the bottom tensile ring is 3.6m. The vector height of each beam is 3m and the sag is 5m. 4 hoop supports are designed at the top chord to ensure the out-of-plane stability.