



DRAFT FINAL PROGRAM

The First International Conference on Building Energy and Environment (COBEE)

*July 13-16, 2008
Dalian, China*

Organized by
Tianjin University
Dalian University of Technology
Co-Organized by
Purdue University
University of Colorado at Boulder



<http://bechtelrh.colorado.edu/ceae/cobee/>

Welcome to COBEE 2008



Energy and environment concerns have been ranked among the top problems facing society for the next 50 years, of which buildings are a major factor. This is because buildings use a significant portion of electricity and thermal energy, and the conversion of primary energy to electricity and thermal energy accounts for a large portion of greenhouse gas emissions. Energy is used to maintain comfortable and healthy environments in buildings, although such environments are difficult to achieve. Indeed, reports of building related symptoms and health complaints have been increasing.

This conference is organized to provide a platform for discussing energy and environmental issues and for initiating collaboration among building engineers, environmental scientists, architects, facility managers, and policy makers. The objective for the conference is to provide a forum for discussion that addresses the challenges and opportunities we are facing, while enabling collaboration that encourages the participants from both developed and developing countries to work together to solve the most critical problems.

This first International Conference on Building Energy and Environment (COBEE) will be held in Dalian, which is a scenic, coastal city in Northeast China.

Welcome to charming and beautiful Dalian!



Neng Zhu, Ph.D.
Tianjin University
Co-President



Jili Zhang, Ph.D.
Dalian University of Technology
Co-President

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General Information

Emergency

Police: Call 110

Ambulance: Call 120

Fire: Call 119

All emergency issues must be reported to the COBEE 2008 Conference Secretariat. The cellular phone number is +86-139-4288-5761.

Arrival at Dalian International Airport and Local Transportation

After you exit the customs service, please go to the taxi stand and tell the driver to go to your hotel (Please print your hotel name in English and Chinese below and give it to your taxi driver). The taxi ride from the airport to your hotel costs around RMB ¥36.00 (US \$5.20). Please do not take an unlicensed taxi offered inside the airport terminal.

Taking a taxi is inexpensive in Dalian. It is highly recommended that you use taxi for local transportation. Please keep taxi receipts and write down the driver's license number that is displayed on front of the passenger seat and taxi license plate number if you have any problems.

Hotels

The following hotels are used by COBEE 2008 conference participants and their accompanying persons:

Furama Hotel Dalian – 大连富丽华大酒店 (★★★★★)

No. 60 Renmin Road, Dalian, 116001, China

Tel: +86-411-82630888 Fax: +86-411-82804455

Delight Hotel – 心悦大酒店 (★★★★)

No. 81 Renmin Road, Zhongshan District, Dalian, 116001, China

Tel: +86-411- 82809000 Fax: +86-411-82809222

Lee Wan Business Hotel – 丽月湾商务酒店 (★★★★)

No. 26 Zhifu Street, Zhongshan District, Dalian 116001, China

Tel: +86-411-8265-9666 Fax: +86-411-8265-9555

Friendship – 友谊宾馆 (★★★)

No. 91 Renmin Road, Zhongshan District, Dalian, 116001, China

Tel: +86-411-82634121/82639779 Fax: +86-411-82815277



Map of Conference Venue and Accommodation

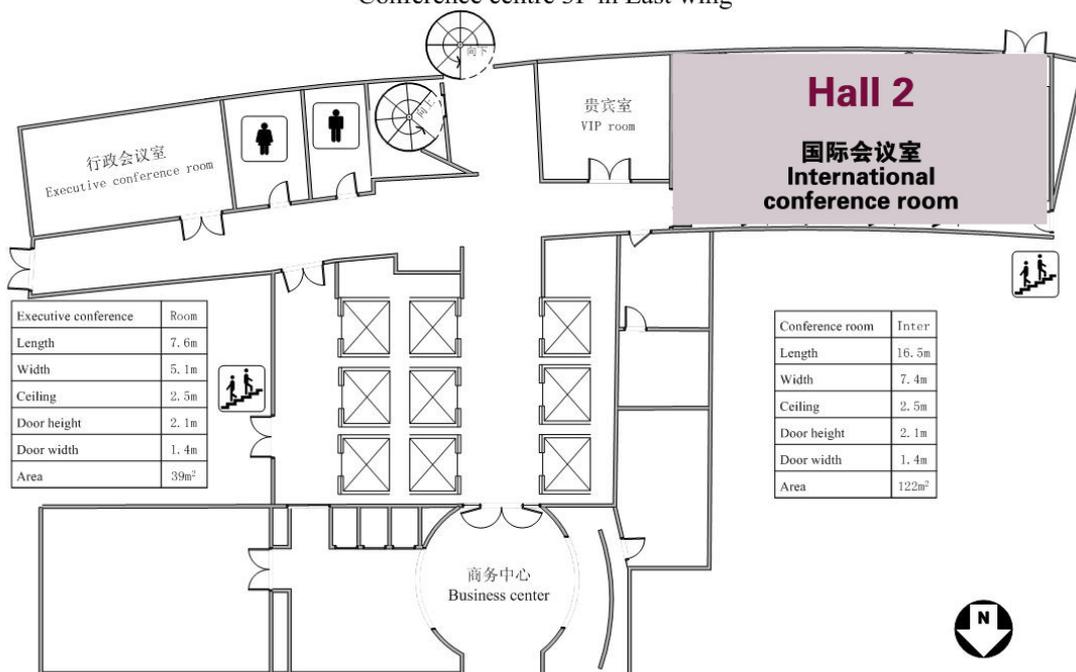
Conference Venue

Furama Hotel Dalian

The conference will be held at Furama Hotel Dalian, in the center of the commercial, shopping, and entertainment area of Dalian. Furama Hotel Dalian is the first five-star deluxe hotel in Northern China. It is about 25 minutes from the airport and, within 10 minutes to the railway station by taxi, and 10 minutes walking to the ferry terminal.



富丽华大酒店东楼三楼会议中心平面图
Conference centre 3F in East wing



Registration

Registration Hours

The Registration Desk and Information Desk will be opened:

09:00 – 17:00 on July 13

08:00 – 17:00 on July 14-16

On-Site Registration Fees

Participant (standard)	US \$450
Participant (package)	US \$550
Student (standard)	US \$300
Student (package)	US \$400
Each additional paper over two papers/ abstracts allowed	US \$100
Accompanying Person(s) (standard)	US \$70
Accompanying Person(s) (package)	US \$170

The Standard Registration for Participants and Students Includes

- Opening ceremony
- Welcome reception
- All plenary, parallel, and poster sessions
- One CD of conference proceedings
- One copy of abstract book
- Coffee and tea breaks
- Technical visit to the seawater source heat pump project
- Closing ceremony

The Registration Package for Participants and Students Includes

- Opening ceremony

- Welcome reception
- All plenary, parallel, and poster sessions
- One CD of conference proceedings
- One copy of abstract book
- Coffee and tea breaks
- Technical visit to the seawater source heat pump project
- Excursion to Bin Hai Road
- Lunches from July 14 to 16
- Dinner on July 14
- Party on July 15
- Closing ceremony

The Standard Registration for Accompanying Persons Includes

- Opening ceremony
- Welcome reception
- Coffee and tea breaks
- Technical visit to the seawater source heat pump project
- Closing ceremony

The Registration Package for Accompanying Persons Includes

- Opening ceremony
- Welcome reception
- Coffee and tea breaks
- Technical visit to the seawater source heat pump project
- Closing ceremony
- Excursion to Bin Hai Road
- Lunches from July 14 to 16
- Dinner on July 14
- Party on July 15

Name Badges

A name badge will be issued to each registered participant. The name badge must be worn for all the conference events.

Practical Information

Language

The official language of the COBEE 2008 is English.

Dress Code

Business attire is appropriate for meetings and social events. Casual dress is suggested for the Bin Hai Road tour and technical visits.

Weather

The weather in Dalian is pleasant with a temperature in mid July ranging from 19 to 30°C and relative humidity around 60-70%.

Water

Tap water is generally not safe for drinking. Please drink only boiled water or bottled water. Hotels usually provide one or two bottles of water for their guests free of charge.

Please check with your hotel.

Electricity

The electrical current in China is 220V 50Hz, and most hotels provide 110V outlets for shavers. The electric outlets in China will generally work with plugs from North America, Japan, and Korea so no converters are needed. For our European and Australian participants, it is recommended that you bring an adapter.

Public Toilets

Many public toilets in Dalian do not provide toilet paper. Please carry some with you when you go outside the hotel and conference center.

Lost and Found

Any articles found should be taken to the Registration Desk/Information Desk. Lost property can be claimed at the same place.

Message Center

You can post or find messages on the message board located near the Information Desk.

Currency Exchange

In China, only Chinese Yuan (RMB) is used. However, currency exchange services can be found at airports, most hotels, and large shopping centers. Furama Hotel Dalian can change money for their guests. When exchanging money, please keep your receipt so that you can change any remaining Chinese Yuan back to foreign currency when leaving China. Visa and MasterCard are accepted in many department stores and hotels. You may cash Chinese Yuan from an ATM with your credit card or bank debit card.

Air Ticket Reconfirmation

Reconfirmation of your air travel is generally not needed. However, please check with your travel agents/airliners before you leave for China. Your travel agent should provide you with the local number of your airliner in China.

Medical Service

In case of emergency, please contact the Information Desk. For ambulance, please call 120. In case of illness, please contact conference secretariat: 139-4288-5761, who will help you to find a doctor or hospital. There are English-speaking physicians providing services to foreign visitors:

- The Affiliated Zhongshan Hospital of Dalian University
- The First Affiliated Hospital of Dalian Medical University
- Dalian Municipal Friendship Hospital

Business Center

The front desk in Furama Hotel Dalian can help you for most daily business service, including mail delivery.

Telephone

You can purchase an IC card and use it on most public telephones, including those inside the Furama Hotel Dalian. There are RMB ¥30 and RMB ¥50 cards. To dial outside of China, call 00-country code-city code-local number, e.g. 00-1-123-4567890.

Tipping

Tipping is not expected for all the services in China, such as taxi, hotel, restaurants, cinemas, etc. However, a small tip could be left to hotel porters and tour guides for extraordinary service. The prices in most hotels and restaurants include service charges, unless the service charge is explicitly listed in the hotel bill or restaurant menu.

Tax

All the prices listed in China include tax, unless the tax is stated explicitly.

Insurance

The registration fee does not include insurance for the participants regarding accidents, sickness or loss of personal property. COBEE participants should make their own arrangements with respect to health and travel insurance before leaving their countries.

Internet

Wireless internet access is provided in Furama Hotel Dalian for a fee. Please contact The Registration Desk/Information Desk if you need help.

Cellular Phone Use Policy

Cellular phone must be switched off during a conference session. Please be considerate for not disturbing your fellow participants. It is not appropriate to answer a phone during a session.

Conference Publications

All accepted one-page abstracts are published in an abstract book of COBEE 2008. One can find the abstract according to paper number used in the abstract book and the final program or authors' index in the abstract book. The authors have chosen to publish only the one-page abstract or the abstract and a full paper. The full papers are published in the conference proceedings on a CD-ROM and in a printed version. The abstract book of COBEE 2008 and the CD proceedings will be distributed to all registered participants at the conference. The printed proceedings and additional copies of the abstract book of COBEE 2008 and the CD proceedings can be purchased at the conference.

One set of printed proceedings (3 volumes): US \$150 or RMB ¥1,050, COBEE can mail to your address with a fee.

One additional copy of the abstract book: US \$50 or RMB ¥350.

One additional copy of the CD proceedings: US \$120 or RMB ¥840.

Conference Facilities

Projectors

Multimedia LCD projectors will be available in all the meeting rooms.

Speaker's Lounge

The Registration/Information Desk is also served as the speaker's lounge. The opening hours are:

09:00 – 17:00 on July 13, in the western lobby on the first floor

08:00 – 17:00 on July 14-16, in front of Tianbofu Ballroom on the 2nd floor

All the speakers must give their PowerPoint files at least a half days prior to their sessions to the Information Desk to ensure they will work properly in COBEE PCs and for the inspection of commercialism, if presentation materials are not emailed to the

Secretariat by July 9. No personal laptops from the meeting participants will be allowed for use in the presentations to avoid any potential interruption.

Instructions for Speakers

Oral Presentations in Parallel Sessions

It is highly recommended that an oral presenter practice his/her talk several times prior to the presentation. The presenter must make sure he/she can complete the presentation in ten (10) minutes during the practice. Note that when the presenter presents to a large audience, a ten-minute presentation will take twelve (12) minutes to finish.

A presenter is kindly requested to be in the meeting room ten (10) minutes prior to the beginning of the session. The presenter should check if the PowerPoint file works in the computer. Introduce himself/herself to the session chair, co-chair, and other presenters in the same session. Due to limited time, the introduction by the session chair and co-chair for each presenter will be very brief. Each presenter is asked to please prepare a brief note as follows and gives it to the session chair or co-chair. For example: "Dr. Junjie Liu will present the paper entitled: 'The Experiment Research on Transport of Biological Aerosol in Saliva Droplets within a Room' that is authored and co-authored by Dr. Shusen Liu. Dr. Junjie Liu is an Associate Professor from the School of Environment Science and Technology at Tianjin University, China." When the session chair or co-chair asks a presenter to start the presentation, the presenter should please

1. Start the talk immediately on the topic and avoid another introduction by the presenter.
2. Pace the talk to end before the scheduled ending time. This will allow time for questions and discussion.
3. Listen carefully to the questions from audience and answer them briefly. If the presenter cannot answer the questions briefly, ask for a private discussion after the session.
4. Adhere to session chair's instructions.

Poster Presentations in Poster Sessions

Poster presenters are encouraged to set up posters at the beginning of the conference on the afternoon of Sunday, July 13. Presenters are then kindly requested to remove posters by 16:00 on Wednesday, July 16.

Poster presenters must be available in front of their posters during the poster session either on Monday between 17:00 and 18:00 or Wednesday between 09:00 and 10:00. Please check this final conference program for the day of your presentation. In order to attract a large audience to the poster, the presenter should start to give a summary of the results if there are more than four people standing around the poster. If there are fewer people around, a presenter should encourage an audience by approaching others and asking: "Do you have any questions about my poster?" or "Could I explain more to you about the results shown on my poster?"

Social Events

Opening Ceremony

16:00-17:00 on Sunday, July 13 in Hall 1 on the 2nd floor of Furama Hotel Dalian. Name badge is required for admission.

Welcome Reception

18:00-22:00 on Sunday, July 13 in Hall 1 on the 2nd floor of Furama Hotel Dalian. Name badge is required for admission.

Party and Performance

18:30-22:00 on Tuesday, July 15 in Delight Hotel. Ticket is required for admission.

Closing Ceremony

13:30-15:30 on Wednesday, July 16 in Hall 6 on the 2nd floor of Furama Hotel Dalian. Name badge is required for admission.

Lunch and Dinner

For participants with package registration, lunch and dinner will be provided in Lee Wan Business Hotel in Dalian. Lunch is from 12:30 to 13:30 from July 14 through 16. Dinner on July 14 is also served at Lee Wan Business Hotel at 18:30. Ticket is required.

Coffee and Tea

Coffee and tea will be served in front of Tianbofu Ballroom on the second floor of Furama Hotel Dalian.

Social Tour

COBEE 2008 has organized a tour to the Bin Hai Road for participants with package registration on Tuesday, July 15. Please sign up when register. Coach will leave at 16:00 from Furama Hotel Dalian and will return back to Delight Hotel around 18:30. Please gather 10 minutes prior to the departure time in the lobby of the first floor of Furama Hotel. Ticket is required.

Technical Tour

COBEE 2008 has organized a tour to the seawater source heat pump project on Sunday, July 13. The outward coach will depart at 13:00 from Furama Hotel Dalian and the return coach will leave from Xinghai Bay area, the site of the Seawater Source Heat Pump Project at 14:30. The coach will return back to Furama Hotel Dalian around 15:00. Please gather 10 minutes prior to the departure time in the lobby of the first floor of Furama Hotel Dalian.

Tour Information

The COBEE 2008 conference has organized two local tours. Please check with the Tour and Ticket Desk in case of any last minute changes. Ticket is required. All local tours will depart from the lobby on the first floor of Furama Hotel Dalian. Please be there at least 10 minutes prior to the departure time.

The COBEE Organizing Committee has invited several tour agents at the conference venue. If there are sufficient people interested, the tour agents can organize tours on your requests. Should you need any further assistance, please contact the Information Desk.

Travel Information

Dalian is with convenient air, rail, water, and land transportation.

Air

Dalian has many direct flights from/to a dozen of Asian countries and regions, such as Tokyo, Osaka, Seoul, and Hong Kong. Dalian has over 20 daily flights to Beijing, 14 daily flights to Pudong, Shanghai, 5 daily flights to Guangzhou, and hundreds of flights to over 40 other domestic destinations. For flight schedule, please access the website at <http://www.dlairport.com/English/home.aspx>.

Dalian Zhoushuizi International Airport is around 14 kilometers from downtown. It is a twenty-minute ride by taxi to the conference venue and the cost is about RMB 36.00 (USD 5.20). Passengers shall pay 30% additional fare for service between 22:00 to 05:00. One should pay the taxi fare according to the fare meter reading that could be slightly different from the above price. Buses 516, 532, 610, 701, and 710 run between the airport and downtown at fare of RMB ¥1.00 (USD 15 cents). The airport has also special shuttles to downtown with fare of RMB ¥5.00 (USD \$0.70).



Ticketing office: 0411-3642136

Domestic airlines: 0411-3621493

International airlines: 0411-3637090

Taxi stand: The taxi stand is at the exit of the airport terminal.

Trains

Dalian railway is connected with the railway network of Northeast China. Everyday more than 50 trains leave Dalian for Beijing, Shenyang, Harbin and many other cities. Dalian railway station, the terminal of Hada railway, is located in Qingniwa Bridge of downtown Dalian, which is only one kilometer from the conference venue.



Sea

Dalian is a very busy seaport with ferries serving to Yantai, Weihai, Penglai, Qinhuangdao, Tianjin, and Changhai County. High-speed tourist ferries are available for Yantai, Qinhuangdao, and Changhai County. There is ferry service between Dalian and Incheon, Korea. Dalian seaport terminal is located in North Wuwu Road in east Dalian. Buses 801 and 13 operate between the seaport and downtown.

Highways

Liaoda expressway connects Dalian with Shenyang, Liaoyang, Anshan, and Yingkou. Huanghai expressway runs from Dalian to Dandong, bordered with North Korea. Heda highway (highway 201) to Hehang and Heida highway (highway 202) to Heihe start from Dalian (Lushun).

Information on Dalian

Dalian is a charming city with a blue sea, a lot of sunshine, beautiful landscaping, gourmet seafood, and friendly people. The city is known to many as “Home of Track and Field” and “City of Fashion”. Dalian has many beautiful parks and contains attractive buildings demonstrating various unique and interesting architectural styles. For those who enjoy ocean, the city's beaches are ideal places to escape the summer heat.



Other local attractions in Dalian include: Xinghai Park, Tiger Beach Park, Golden Pebble Beach Scenic Area, Fujia Village Tourist Center, and the Museum of Natural Science, and many others. Dalian is also famous for its shell carving pictures and glassware. Exploring scenic spots and places of historic interests will help you to recharge following a busy day at the

conference. At night, you can soak in the city while observing the unique, urban lighting, strolling along the seaside to assess thermal comfort, and taking in the air quality from the sea breezes. A diverse selection of local restaurants offers delicious food and wine from various regions of China. Studying the impact of the local cuisine on your health is perfect practice for evaluating energy and environment.

Dalian, located on a peninsula, is a flourishing and beautiful coastal, port city. The weather in Dalian is very pleasant, with summers that are not extremely hot and winters that are not too cold. The average temperature in Dalian is about 10 °C. The temperature in mid July ranges from 19 °C to 30 °C with relative humidity from 62% to 66%. The fair weather ensures that Dalian can receive a high rank for outdoor thermal comfort. Due to the moderate summer temperatures, late May to middle September is the peak travel season in Dalian.



COBEE 2008 Secretariat

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General Timetable

TIME	JULY 13, SUN	JULY 14, MON	JULY 15, TUE	JULY 16, WED
08:00-09:00		Parallel Sessions (T1.1, T3.1, T8.1, T9.1, F4, F5.1)	Parallel Sessions (T2.3, T6.3, T8.4, T1.3, F1)	Plenary Session II (P2.1, P2.2)
09:00-10:00				Poster Session II
10:00-10:30		Coffee and Tea	Coffee and Tea	Coffee and Tea
10:30-12:30		Parallel Sessions (T2.1, T6.1, T10, T11, F7)	Parallel Sessions (T4, T5, T3.3, T7, T6.4, F6)	Parallel Sessions (T1.4, T3.5, T6.5, T9.3, F1)
12:30-13:30	Technical Tour	Lunch Break	Lunch Break	Lunch Break
13:30-15:30		Parallel Sessions (T1.2, T3.2, T13.1, T8.2, F5.2)	Parallel Sessions (T9.2, T2.4, T3.4, T8.5, F8, F3)	Closing Ceremony
15:30-16:00		Coffee and Tea	Coffee and Tea	
16:00-17:00	Opening Ceremony	Parallel Sessions (T2.2, T6.2, T13.2, T8.3, F2)	Social Tour	
17:00-18:00	Plenary Session I (P1.1, P1.2)	Poster Session I		
18:00-18:30	Welcome Reception			
18:30		Dinner	Party and Performance	

Introduction to the Technical Program

COBEE 2008 technical program consists of

- **Plenary sessions**, each invited speaker has 30 minutes for presentation;
- **Parallel sessions**, each presenter has 15 minutes for presentation, including discussion;
- **Poster sessions**, each presenter has 60 minutes for presentation and discussion in front of his/her poster;
- **Forums**, each forum has 60-120 minutes. The forums are to discuss challenges and opportunities in building energy and environment. There is ample time for discussion;
- **Advanced Technologies from Industry**, A forum in which each presenter has 20 minutes for presentation.

Plenary Sessions

Four internationally renowned scholars have been invited as the plenary session speakers of COBEE 2008. Their topics of presentation are:



P1.1 Understanding Exposure to Air Pollutants in the Built Environment, William W Nazaroff (USA) (Su-P1)



P1.2 Energy and Environment in Chinese Rural Housing: Road to Sustainability, Xudong Yang, Yi Jiang (China) (Su-P1)



P2.1 Sustainable Building Design, Koen Steemers (UK) (We-P2)



P2.2 Ventilation and Health in Built Environment, Yuguo Li (China) (We-P2)

Parallel and Poster Sessions

The parallel and poster sessions consisted of peer-reviewed papers/abstracts organized in the following topics:

T-1 Building Energy Demand and Energy Performance of Buildings, Systems, and

- Components (Mo-T1.1, Mo-T1.2, Tu-T1.3, We-T1.4)
- T-2** Passive Heating, Passive Cooling, and Renewable Energy for Buildings (Mo-T2.1, Mo-T2.2, Tu-T2.3, Tu-T2.4)
- T-3** Indoor and Outdoor Air Quality, Thermal Comfort and Health Impact Related to Built Environments (Mo-T3.1, Mo-T3.2, Tu-T3.3, Tu-T3.4, We-T3.5)
- T-4** Indoor and Outdoor Acoustic Comfort and Noise Control (Tu-T4)
- T-5** Indoor and Outdoor Lighting, Lighting Control, and Visual Comfort (Tu-T5)
- T-6** Ventilation, Infiltration, and Air Distributions (Mo-T6.1, Mo-T6.2, Tu-T6.3, Tu-T6.4, We-T6.5)
- T-7** Sustainable and Advanced Built Environments (Tu-T7)
- T-8** Advanced or Innovative HVAC&R Systems and System Components (Mo-T8.1, Mo-T8.2, Mo-T8.3, Tu-T8.4, Tu-T8.5)
- T-9** Advanced or Innovative Building Envelopes and Materials for Energy Conservation and Indoor Environment Improvement (Mo-9.1, Tu-T9.2, We-T9.3)
- T-10** Intelligent Buildings and Advanced Control Techniques (Mo-T10)
- T-11** Computer Tools and Experimental Techniques for Assessment of Building Energy and Built Environments (Mo-T11)
- T-12** Integration of Technologies and Tools for Building Design and Operation (Mo-T11, Mo-T13.2, Tu-T1.3, Tu-T2.3, Tu-T2.4, Tu-T4, Tu-T5, Tu-T6.3, Tu-T9.2)
- T-13** Public Policies Related to Building Energy and Environment (Mo-T13.1, Mo-T13.2)
- T-14** Retrofit and Optimal Operation of the Building Energy System (Mo-T10, Mo-T1.2, Tu-T1.3, Tu-T2.3, Tu-T8.4)

Forums

The forum topics are:

- F-1** A Commentary on the Residential Energy Consumption in China: Data Secured and Required (We-F1)
Chair: Hiroshi Yoshino, Tohoku University, Japan
- F-2** Multifunctional Facades and Building Structures-performance Prediction and Validation (Mo-F2)
Chair: Marija Todorovic, University of Belgrade, Serbia
- F-3** Inverse Tracking of Indoor Pollutant (Tu-F3)
Chair: Qingyan Chen, Purdue University, USA
- F-4** HVAC Design for High-rise Residential Buildings (Mo-F4)
Chair: Jianlei Niu, Hong Kong Polytechnic University, China
- F-5** Balance between Energy Use and Indoor Environmental Quality (Mo-F5.1, Mo-F5.2)
Co-chair: Yuanhui Zhang, University of Illinois at Urbana-Champaign, USA
Co-chair: James Bennett, National Institute for Occupational Safety and Health, USA
- F-6** IAQ Problems in China: Current Status and Future Perspective (Tu-F6)
Co-chair: Guoqiang Zhang, Hunan University, China
Co-chair: Qihong Deng, Central South University, China
- F-7** Recent Progress in IAQ and Health Research in China (Mo-F7)
Co-chair: Yuguo Li, Hongkong University, China
Co-chair: Xu Yang, Huazhong Normal University, China
Co-chair: Jinliang Zhang, Peking University, China
- F-8** Advances in EnergyPlus Development and Application (Tu-F8)
Chair: John Zhai, University of Colorado at Boulder, USA

Advanced Technologies from Industry

Yamatake Environmental Control Technology (Beijing) Co., Ltd. (Tu-FI)

Aldes (Shanghai) Indoor Air Technology Co.,Ltd. (Tu-FI)

Session Codes

All the sessions have been assigned a code, such as “Mo-T1.2”. The first two letters stand for:

Su = Sunday

Mo = Monday

Tu = Tuesday

We = Wednesday

The third letter stands for:

P = Plenary sessions

T = Technical sessions

F = Forums

Po=Poster sessions

FI= Advanced Technologies from Industry

The number before the period stands for the sequence number of topics/plenaries/forums.

The number after the period is the sequential number of the sessions for the topics/plenaries/forums.

For example: “Mo-T1.2” means the second part of topic one to be presented on Monday.

Best Posters

The COBEE 2008 will select several best poster awards. The members of the best poster selection committee are: Yuguo Li, William Nazaroff, Koen Steemers, Jan Sundell, and Xudong Yang.

Summary of the Technical Program

Sunday, July 13 2008

Sessions	Titles	Hall No.
17:00-18:00		
Su-P1	Plenary Session I	1

Monday, July 14 2008

Sessions	Titles	Hall No.
08:00-10:00		
Mo-T1.1	Energy Performance in Buildings	3
Mo-T3.1	Indoor Environment Analyses	4
Mo-T8.1	Heat Pumps (1)	5
Mo-T9.1	Advanced Building Envelopes	2
Mo-F4, Mo-F5.1	Forum 4: HVAC Design for High-rise Residential Buildings (08:00-09:00) Forum 5: Balance between Energy Use and Indoor Environmental Quality (1) (09:10-10:00)	6
10:30-12:30		
Mo-T2.1	Solar and Geothermal systems	3
Mo-T6.1	Airflow and Ventilation (1)	4
Mo-T10	Building Control and Operations	5
Mo-T11	Integrated Building Simulation	2
Mo-F7	Forum 7: Recent Progress in IAQ and Health Research in China	6
13:30-15:30		
Mo-T1.2	Case Studies of Energy Performance in Buildings	3
Mo-T3.2	Outdoor Environment	4
Mo-T13.1	Policies Related to Building Energy and Environment	5
Mo-T8.2	HVAC Systems and Their Applications	2
Mo-F5.2	Forum 5: Balance between Energy Use and Indoor Environmental Quality (2)	6
16:00-17:00		
Mo-T2.2	Energy Conservation in Buildings	3
Mo-T6.2	Particle Deposition, Dispersion and Filtration (1)	4
Mo-T13.2	Smoke and Fire Studies	5
Mo-T8.3	Advanced Refrigeration Systems	2
Mo-F2	Forum 2: Multifunctional Facades and Building Structures-performance Prediction and Validation	6
17:00-18:00		
Mo-Po1	Poster Session I: All Topics	Furama Ballroom Foyer

Tuesday, July 15 2008

Sessions	Titles	Hall No.
08:00-10:00		
Tu-T2.3	Impact of Solar Radiation and Ice Storage on Building Energy Performance	3
Tu-T6.3	Airflow and Ventilation (2)	4
Tu-T8.4	Heat Pump (2)	5
Tu-T1.3	Advanced Building Energy Simulations	2
Tu-FI	Advanced Technologies from Industry	6
10:30-12:30		
Tu-T4,T5	Lighting and Vibration	3
Tu-T3.3	Thermal Comfort (1)	4
Tu-T7	Sustainable Building Assessments	5
Tu-T6.4	Particle Deposition, Dispersion and Filtration (2)	2
Tu-F6	Forum 6: IAQ Problems in China: Current Status and Future Perspective	6
13:30-15:30		
Tu-T9.2	Impact of Material on Building Energy Performance	3
Tu-T2.4	Wind Effect on Building Performance	4
Tu-T3.4	VOC Impact on Indoor Air Quality	5
Tu-T8.5	Heat and Mass Transfer in HVAC Systems	2
Tu-F8, Tu-F3	Forum 8: Advances in EnergyPlus Development and Application (13:30-14:30) Forum 3: Inverse Tracking of Indoor Pollutant (14:30-15:30)	6

Wednesday, July 16 2008

Sessions	Titles	Hall No.
08:00-09:00		
We-P2	Plenary Session II	6
09:00-10:00		
We-Po2	Poster Session II: All Topics	Furama Ballroom Foyer
10:30-12:30		
We-T1.4	Building Energy Analyses	3
We-T3.5	Thermal Comfort (2)	4
We-T6.5	Airflow and Building Ventilation (3)	5
We-T9.3	Advanced Building Envelopes	2
We-F1	Forum 1: A Commentary on the Residential Energy Consumption in China: Data Secured and Required	6

Detailed Technical Program

Sunday, July 13 2008

13:00—15:00 Technical Tour

16:00—17:00 Opening Ceremony

Room: Hall 1

Chair: Jili Zhang, Co-President of COBEE 2008, Dalian University of Technology

Welcome addresses

- Welcome by Neng Zhu, Co-President of COBEE 2008, Tianjin University
- Welcome by Qingyan Chen, Co-Chair of COBEE 2008 Organizing Committee, Purdue University
- Welcome by John Zhai, Co-Chair of COBEE 2008 Organizing Committee, University of Colorado at Boulder
- Welcome by Ke Gong, President of Tianjin University
- Welcome by Jinping Ou, President of Dalian University of Technology

Practical information by Tengfei Zhang, Secretariat of COBEE 2008

17:00—18:00 Plenary Session

Session Su-P1: Plenary Session I

Room: Hall 1

Co-Chairs: Jan Sundell and Hiroshi Yoshino

- P1.1 Understanding Exposure to Air Pollutants in the Built Environment, William W Nazaroff (USA)
- P1.2 Energy and Environment in Chinese Rural Housing: Road to Sustainability, Xudong Yang, Yi Jiang (China)

18:00 Welcome Reception

Room: Hall 1

Chair: Lin Duanmu

Monday, July 14 2008**08:00—10:00 Parallel Sessions****Session Mo-T1.1: Energy Performance in Buildings****Room: Hall 3****08:00—10:00 Monday****Co-Chairs:** Yutaka Tonooka and Peter Ellis

T01-08 Experimental Assessment of Thermal Performance of an Elevated Chinese Kang System

Zhi Zhuang, Yuguo Li, Lin Duanmu, Zongshan Wang, Bin Chen, Hua Qian, Yafeng Sun, Yang Zhao, Li Liu

T01-91 Energy Performance of Concrete Buildings in Five Climates

Martha G. VanGeem, Medgar L. Marceau

T01-88 Optimization of the Energy Performance of the System: Trade-off Between Environmental and Economical Objectives

Enrico Fabrizio, Marco Filippi, Joseph Virgone

T01-62 Comparison of the Climate in China and Europe with Respect to the Energy Performance of Buildings

Guangyu Cao, Olli Seppänen

T01-82 The Impact of Urban Heat Island Effect on Office Building's Cooling Load

Zhe Tian, Neng Zhu, Peng Peng

T01-69 The Potential for Improved Energy Performance in Pre 2006 Housing – An Irish Case Study - In the Context of the Energy Performance of Buildings Regulations 2006 (S.I.No.666 of 2006).

Donal Lennon, Liyan Guo

T01-110 Building Energy Consumption and Emissions of GHGs and Air Pollutants in Japan and China

Yutaka Tonooka, Yadong Ning

Session Mo-T3.1: Indoor Environment Analyses**Room: Hall 4****08:00—10:00 Monday****Co-Chairs:** Nianping Li and Jiancheng Qi

T03-107 Studies on Design and Construction of a Chamber with Multiple Performances

Yanju Li, Huili Duan, Xinzhi Zhao, Jinming Zhang, Jiancheng Qi

T03-103 A Study on Dividing Heating Area of Radiant Floor Heating System

G. S. Joe, G. Y. Cho, S. W. Lee, M. S. Yeo a, K. W. Kim

T03-14 Numerical Simulation of Airflow and Temperature Fields in Air-conditioned Vehicle

Liping Xiang, Hanqing Wang

T03-13 Indoor Air Quality Benchmarks of ‘Grade A’ Offices in Hong Kong
P. S. Hui, L. T. Wong, K. W. Mui

T03-07 Summer Thermal Comfort Conditions in University Classrooms
Fang Wang, Xiaosong Zhang

T07-17 Modeling of Coupled Heat Transfer and Air Flow in a Partitioned Dwelling with a Zonal Model – a Case Study Approach.
Yosr Boukhris, Leila Gharbi, Nadia Ghrab-Morcoc

T03-41 New Development of Airflow Fluent Characteristics and It’s Impact on Human Thermal Comfort
Ning Yu, Hongfa Di, Rongyi Zhao

Session Mo-T8.1: Heat Pumps (1)

Room: Hall 5

08:00—10:00 Monday

Co-Chairs: Ryozo Ooka and Jili Zhang

T01-15 The Proper Scale and Energy Efficiency Requirement of Seawater Source Heat Pump District Heating System
Haiwen Shu, Lin Duanmu, Yingxin Zhu, Xiangli Li

T08-27 The Applied Research on the Pipe-flowing Characteristics of Urban Sewage
YueBin Wu, Qiong Yu, Ying Xu

T02-64 Gas Engine Heat Pump Using Sludge
Yuntao Jiang, Yitai Ma, Zhao Yang

T08-97 Progress of the Intaking, Defouling and Heat Transfer in Sewage Water Side of the Sewage Water Source Heat Pump System Part I: Research on Urban Sewage Source Heat Pump in North Europe and Japan
Jili Zhang, Liangdong Ma, Ruobing Liang, Tianyi Zhao, Zhixian Ma

T08-98 Progress of the Intaking, Defouling and Heat Transfer in Sewage Water Side of the Sewage Water Source Heat Pump System Part II: Research on Urban Sewage Source Heat Pump in China
Jili Zhang, Liangdong Ma, Ruobing Liang, Tianyi Zhao, Zhixian Ma

T02-46 Numerical Simulation of Ground Heat and Water Transfer for Groundwater Heat Pump System
Ryozo Ooka, Yujin Nam

T01-44 Energy Consumption Simulation and Analysis of the Two-stage Centrifugal Vapor-compression Water Source Heat Pump
Quan Jin, Haiwen Shu, Lin Duanmu

Session Mo-T9.1: Advanced Building Envelopes**Room: Hall 2****08:00—10:00 Monday****Co-Chairs:** Per Heiselberg and Lin Duanmu

T09-36 Storage and Exchange Thermal Characteristic Analysis of Phase Change Wallboard Room with Different Condition

Guohui Feng, Shui Yu, Ruobing Liang, Huiyu Guo, Shilei Lu, Xudong Chen, Guangyu Cao

T09-35 Experimental Evaluation of a Climate Façade: Energy Efficiency and Thermal Comfort Performance

Marco Perino, Valentina Serra, Fabio Zanghirella

T01-11 Comparison of Energy Demand in Buildings with Dual Airflow, Low-Emissivity, and Blinds Windows

Jingshu Wei, Jianing Zhao, Qingyan Chen

T09-05 Fenestration Products with Adjustable Heat-Protective Characteristics: Heat-reflecting Screen and Venetian Blends

Mikhail I. Nizovtsev, Victor I. Terekhov

T09-22 Contribution of Natural Ventilation in Double Skin Envelope on Heating Load Reduction in Winter

Yu-Min Kim, Soo-Young Kim, Sung-Woo Shin, Jang-Yeul Sohn

T09-11 Experimental and Numerical Analysis of Heat Transfer and Airflow on an Interactive Building Façade

Roberto Fuliotto, Francesco Cambuli, Natalino Mandas, Nicoletta Bacchin, Giampiero Manara, Qingyan Chen

T09-43 Measurement and Modelling of Air Flow Rate in a Naturally Ventilated Double Skin Façade

Per Heiselberg, Olena Kalyanova, Rasmus Lund Jensen

Session Mo-F4: HVAC Design for High-rise Residential Buildings**Room: Hall 6****08:00—09:00 Monday****Chair:** Jianlei Niu

F04-01 What Is the Best Cooling System for High-rise Residential Buildings?
Yingxin Zhu

F04-02 Simulation Study for Preventing Environmental Troubles Caused by Stack Effect in High-rise Residential Buildings

Hiroshi Yoshino, Mitsutoshi Fujikawa, Maatouk Khoukhi, Shin Hayakawa, Joonghoon Lee, Kyunghun Woo

F04-03 Suggestions for Placement of Split-type A/C Outdoor Units at High-rise Residential Buildings

Zhang Lin, T.T. Chow

F04-04 Ventilation Design to Minimize Infectious Diseases Spread in High Rise Residential Buildings
Jianlei Niu

Session Mo-F5.1 Balance Between Energy Use and Indoor Environmental Quality (1)

Room: Hall 6

09:10—10:00 Monday

Co-Chairs: Yuanhui Zhang and James Bennett

F05-01 A Systems Approach to the Optimal Design of Safe-rooms for Shelter-in-place Scenarios
James S. Bennett

F05-02 High Efficient Photocatalytic TiO₂ Thin Films Coated on Porous Ceramic Air Filters for Indoor Air Pollution Control
S. C. Lee

10:00—10:30 Coffee and Tea

10:30—12:30 Parallel Sessions

Session Mo-T2.1: Solar and Geothermal Systems

Room: Hall 3

10:30—12:30 Monday

Chair: John Zhai and Huan Zhang

T02-30 Study of Solar Thermal Power Generation in Buildings
Meng-Chieh Lee

T02-31 Comparison of Two Kinds of Solar Collector/Energy Storage
Sujuan Zhou, Xiaosong Zhang

T09-33 Numerical Simulation of Heat Transfer of Solar Flat-plate Collector with Energy Storage
Donghua Peng, Zhenqian Chen, Mingheng Shi

T02-04 Area Compensation of Solar Panels Integrated onto Facade of Buildings
Runsheng Tang, Hongbo Wu, Tong Wu

T02-01 Numerical Analysis of Performance of a Building Integrated Photovoltaic-thermal Collector System
Charles D. Corbin, Zhiqiang (John) Zhai

T02-19 Experimental Analysis of Control Modes in the Soil Thermal Energy Storage
Qing Gao, Ming Li, Yan Jiang, Chunqiang Ma, Ming Yu, Y.Y. Yan

T02-70 Gradient Utilization of Low Temperature Geothermal Water in a HVAC System

Huan Zhang, Xianli Li, Leilei Wang, Shijun You

Session Mo-T6.1: Airflow and Ventilation (1)

Room: Hall 4

10:30—12:30 Monday

Co-Chairs: Liangdong Ma and Zhang Lin

T06-64 Numerical Simulation on a Horizontal Airflow for Airborne Particles Control in Hospital Operating Room

Junjie Liu, Haidong Wang, Wenyong Wen

T06-60 On the Estimates of Air and Pollutant Exchange Performance for Urban Street Canyons Using the RANS Renormalized Group k- ϵ Turbulence Model

W. C. Cheng, Chun-Ho Liu, Dennis Y. C. Leung

T06-59 Analysis with Field Synergy Principle of Air-conditioning Room on Four Ventilation Patterns

Wenheng Zheng, Jiaping Liu, Qing Zhang, Yi Wang

T06-37 Large Eddy Simulation of Turbulent Flow and Heat Transfer in a Rotating Rectangular Duct

Liangdong Ma, Jili Zhang, Dingcai Zhang

T06-01 Experimental and Numerical Study of Flow and Contaminant Transport Inside an Aircraft Cabin with a Moving Body

Sagnik Mazumdar, Stephane Poussou, Qingyan Chen, Paul E. Sojka, Michael W. Plesniak

T03-105 Energy Conservation and Improved IAQ with Existing Ventilation Standards

Christopher O. Muller

T06-32 Hybrid Ventilation for Low Energy Building Design in South China

Yingchun Ji, Kevin J Lomas, Malcolm J. Cook

T06-49 Stratum Ventilation – Solution to Elevated Indoor Temperatures

Zhang Lin, T.T. Chow, C.F. Tsang

Session Mo-T10: Building Control and Operations

Room: Hall 5

10:30—12:30 Monday

Co-Chairs: Peter Boait and Juifah Chou

T10-09 Local vs. Integrated Control Strategies for Double-skin Systems
Cheol-Soo Park, Godfried Augenbroe

T10-04 Agent Technology to Improve Individual Comfort and Save Energy
Wim Zeiler, Maarten Hommelberg, Rene Kamphuis, Gert Boxem

T10-03 First Experience of the Control System of HVAC Based on KNX Fieldbus Applied in Intelligent Buildings Laboratory
Martin Zalesak, Petr Polach

T01-72 Demand Response Combined with On-site Generation and Clustered Building Demand Control
Michael R. Lavelle

T11-02 A Study on the Energy Penalty of Various Air Side System Failures in Buildings
S.H. Lee

T14-15 Indexes of Systematic Deviation from the Optimal HVAC System Operation by Commissioning
Weijie Zhang, Lanlan Huai, Jiuling Liu

T10-02 Self-configuring Domestic Energy Management System
Peter J. Boait

Session Mo-T11: Integrated Building Simulation

Room: Hall 2

10:30—12:30 Monday

Co-Chairs: Lisa Guan and Angui Li

T11-36 An Integrated Modeling Tool to Simulating Effect of Natural Ventilation on Indoor Air Quality and Room Thermal Conditions
Hui Shi, Peng Gao, Caiqing Yang, Bin Zhao, Xudong Yang

T11-12 Urban Climate Simulation and the Evaluation of Thermal Environment of a Southern Coastal City in Korea
In-Ae Yeo, Seong-Hwan Yoon

T11-24 A Study on the Thermal Performance Simulation Integrated with Hydronic Analysis in Radiant Floor Heating System
K. W. Yang, H. Jung, K. N. Rhee, S. R. Ryu, M. S. Yeo, K. W. Kim

T11-16 Appropriate Parameters of the ASHRAE Clear Sky Model for Cooling Load Calculation in Thailand
Teerapot Wessapan, Nisakorn Somsuk

T12-03 Virtual Building—an Object-Oriented Database Approach Toward Data-Driven Simulations of Whole Building Performance
Shinsuke Kato, Ryohei Kono, Kelvin Feng, Jensen S. Zhang

T11-23 Adaptation to Global Warming by Changing Internal Loads of Buildings
Lisa Guan

Session Mo-F7: Recent Progress in IAQ and Health Research in China**Room: Hall 6****10:30—12:30 Monday****Co-Chairs:** Yuguo Li, Xu Yang and Jinliang Zhang

F07-03 Types of Heating System Terminals and Indoor Thermal Comfort
Jianing Zhao

F07-04 Urbansation and Its Impact on Building Energy Efficiency and Built Environment in China
Baizhan Li

F07-05 Use of Neurobehavioral Tests to Evaluate the Effects of IE on Productivity
Li Lan, Zhiwei Lian

F07-06 A New Assessing Method for Airborne Fungi Spore Concentration in Indoor Environment
Zhen Lu

F07-07 Study of Indoor Pollution of Radon and Its Daughters: Numerical Simulation and Investigation
Dong Xie

F07-08 Indoor Air Pollution and Mental Disorder
Xu Yang

12:30—13:30 Lunch Break**13:30—15:30 Parallel Sessions****Session Mo-T1.2: Case Studies of Energy Performance in Buildings****Room: Hall 3****13:30—15:30 Monday****Co-Chairs:** Baizhan Li and Kwang-Seop Chung

T01-26 Energy Consumption and Retrofit Strategy Analysis for Greening a University Campus
Hui Zhou, Nianping Li, Ji Ni, Shubo Xiao, Lijun Hu, Xiaoqing Wei

T01-10 Energy Efficient Analysis on an Industrial Building Coated with Solar Reflective Materials: a Case Study in China and Australia
Xiaoxin Wang, Chris Kendrick, Ray Ogden, James Maxted

T01-93 Analysis and Research on the Scheme of Energy Conservation Renovation of Existing Heating Residential Building — The Renovation Project of NO.25 Building in the Xi Zhimen South Avenue in Beijing
Yue Yu, Deying Li, Hongbing Chen

T01-84 Effect of Introducing Combined Heat and Power (CHP) System in New

Residential Buildings in Changchun
Ling Jing, Xindong Wei

T01-66 Energy Simulation for a Typical Small Office Building in Indonesia
Rahmi Andarini, Hermann Schranzhofer, Wolfgang Streicher

T01-99 Applying Simulation-based Optimization to Improve Energy Efficiency in Two Generic Office Buildings
Liang Zhou, Edward Morofsky, Fariborz Haghighat

T01-96 Improvement of Intermittent Central Heating System of University Buildings
Kwang-Seop Chung, Youngil Kim, Myo Sun Kim

T14-25 Case Study- Energy Diagnosis of Two Campus Buildings to Analyze Commissioning Benefits Persistence
Yongning Zhang, Liang Chang, Jianjun Xia, Yi Jiang

Session Mo-T3.2: Outdoor Environment

Room: Hall 4

13:30—15:30 Monday

Co-Chairs: Soheil Rastan and Qinglin Meng

T03-32 Field Survey of Semi-outdoor Spaces in Singapore
Jiafang Song, NyukHien Wong, Jun Zhao

T03-59 A Model for Assessing the Effects of Shading Systems on Outdoor Thermal Comfort
Márcia P. Alucci, Leonardo M. Monteiro

T03-60 A Methodology for Comparative Evaluation of Outdoor Thermal Comfort Models
Leonardo M. Monteiro, Márcia P. Alucci

T03-61 Experimental Analysis of Outdoor Thermal Comfort in a Residential Community in the Hot-humid Climate of South China
Zhuolun Chen, Qinglin Meng, Lihua Zhao, Moncef Krarti, John Zhai

T07-01 Study on Relaxation Measures for Outdoor Thermal Environment on Present Urban Blocks in Tokyo Using Coupled Simulation of Convection, Radiation and Conduction
Hong Chen, Ryoza Ooka, Takashi Tsuchiya, Hong Huang

T03-113 The Canadian Environmental Sustainability Indicators: On Population Weighted Ground-level Ozone
Soheil Rastan, Fariborz Haghighat

Session Mo-T13.1: Policies Related to Building Energy and Environment**Room: Hall 5****13:30—15:30 Monday****Co-Chairs:** Qingyuan Zhang and Yi Jiang

T13-06 Implementation of Energy Efficiency in Residential Areas – Public Policies Versus Energy Suppliers

Anna Joelsson, Leif Gustavsson

T13-14 Building Energy and Environmental Issues in a Finnish Technology Roadmap of Building Services

Satu Paiho, Toni Ahlqvist, Erkki Lehtinen

T13-08 Buildings as Distributed Energy Networks: the Next Urban Transformation

Sopitsuda Tongsopit, Yanyong Boon-Long

T13-22 Brief Introduction of Design Standard for Energy Efficiency of Residential Buildings in Tibet Autonomous Region

Liu Yang, Xinrong Zhu, Xiaolin Qi, Runshan Wang, Dalong Liu, Jiaping Liu

T13-13 Heat Reform in Tianjin China

Xuejing Zheng, Shijun You, Ying Shang

T13-19 Recent Initiatives for GHG Reductions in Singapore and Their Likely Impact on the Construction Industry

Asanga Gunawansa

T13-15 Comparative Study of Residential Energy Efficiency Standards of China and Japan

Qingyuan Zhang, Hiroshi Yoshino

T13-16 Influence of Climate Change on Weather Data for Heating and Air-conditioning Design in China

Qingyuan Zhang, Joe Huang

Session Mo-T8.2: HVAC Systems and Their Applications**Room: Hall 2****13:30—15:30 Monday****Co-Chairs:** Henrik Enstrom and Tatsuo Oka

T08-73 Modular Modelling for HVAC Design Evaluation

H.T. Grimmelius, Wei Zheng

T11-07 Numerical Investigation of Thermal-hydraulic Behaviour in HVAC Pipe Networks

Shugang Wang, Jinpeng Sun

T01-27 Optimal Design of DHC Pipe Network of Seawater-source Heat Pump in Dalian's Xinghai Bay Commercial District

Lixing Li, Lin Duanmu, Haiwen Shu

T08-53 A New Adjustable Dynamic Flow Balancing Valve and Its Application in Central Air-conditioning Water System
Jianxiang Guo, Chang Liu

T08-49 A simplified Calculation Method for Estimating Heat Flux from Ceiling Radiant Panels
Shigeru Okamoto, Hisataka Kitora, Hiromasa Yamaguchi, Tatsuo Oka

T08-21 Study on Manufacturing Process and Performance of Sintered Zeolite Composite Adsorbent
Xuesheng Wang, Jianli Cong, Jingjing Dai

T08-28 Abstract of Construction and Design of a Hybrid Air Conditioning System for Residential Buildings with High Comfort and Low Energy Consumption
Yi Jiang, Xiaosong Zhang, Yinghua Chen, Qingfeng Song

T08-58 District Cooling and Its Impact on Environment, Health and Building Architecture
Henrik Enström, Tan Lei

Session Mo-F5.2: Balance Between Energy Use and Indoor Environmental Quality (2)

Room: Hall 6

13:30—15:30 Monday

Co-Chairs: Yuanhui Zhang and James Bennett

F05-03 Effect of Carbon Doping on the Mesoporous Structure of Nanocrystalline Titanium Dioxide and Its Solar-light-driven Photocatalytic Degradation of NO_x
S. C. Lee

F05-04 Experimental and Numerical Study of Droplets Dispersion and Evaporation After Coughing
Yuanhui Zhang

F05-05 Optimization of Aerodynamic Particle Separators for Dust Control
Yuanhui Zhang

F05-06 Balancing Indoor Environment Quality and Energy Use with a Human-oriented Evaluation Method of Indoor Air Distribution
Hao Cai, Xianting Li

F05-07 Solar Decathlon - A Challenge to Achieve Good Balance Between Energy Use and Indoor Comfort
Xinlei Wang

F05-08 Air Intrusion and Its Impact on Energy Performance of Roofing Assemblies
Suda Molleti, Bas A. Baskaran, Pascal Beaulieu, David Van Reenen

15:30—16:00 Coffee and Tea

16:00—17:00 Parallel Sessions

Session Mo-T2.2: Energy Conservation in Buildings

Room: Hall 3

16:00—17:00 Monday

Chair: Stefano Paolo Corgnati

T02-53 Analysis of Energy Conservation Strategies for Rural Housing in Northern China

Ming Yang, Ming Shan, Caiqing Yang, Xudong Yang

T02-51 Implementing Effects of Dispersion Energy System into Residential Building in Changchun

Jindan Cui, Xindong Wei, Ling Jing

T02-41 A Life Cycle Energy Perspective on the Passive House Concept

Anna Joelsson, Leif Gustavsson

T02-56 Night Cooling to Reduce Energy Summery Demand for Indoor Climate Control of Office Buildings

Stefano Paolo Corgnati, Andrea Kindinis, Marco Perino

Session Mo-T6.2: Particle Deposition, Dispersion and Filtration (1)

Room: Hall 4

16:00—17:00 Monday

Chair: Yanming Kang

T11-04 Prediction of Particle Deposition onto Indoor Surfaces by CFD with a Modified Lagrangian Method

Zhao Zhang, Qingyan Chen

T03-108 Effects of Ventilation Strategies and Source Locations on Indoor Particle Deposition

Ke Zhong, Xiufeng Yang, Yanming Kang

T03-109 Effects of Supply Air Temperature and Inlet Locations on Particle Dispersion in a Displacement Ventilated Room

Yanming Kang, Youjun Wang, Ke Zhong

Session Mo-T13.2: Smoke and Fire Studies

Room: Hall 5

16:00—17:00 Monday

Chair: Wan Ki Chow

T12-07 Optimum Design for Smoke Control System in Buildings Considering Robustness Using CFD and Genetic Algorithms

Hong Huang, Ryoza Ooka, Hong Chen, Shinsuke Kato

T11-45 Estimation of Heat Release Rate for Gasoline Pool Fires
W.K. Chow, S.S. Han, C.L. Chow

T06-43 Application of Zone Model in Fire Hazard Assessment for Non-industrial Workplaces
H.M. Ng, W.K. Chow

T13-10 Fire Safety for Public Transport Interchanges in Hong Kong
Lu Qu, W.K. Chow

Session Mo-T8.3: Advanced Refrigeration Systems

Room: Hall 2

16:00—17:00 Monday

Chair: Xiaosong Zhang

T08-03 Introduction of Heat Recovery Chiller Control and Water System Design
Jing Jia

T08-85 The Foundation of Exergy Analysis Model Based on the Open-cycle Absorption Chiller
Genming Zhou, Jianmin Ma

T07-19 Development and Evaluation of the Combined Solar Thermal and Electric Desiccant Cooling System
Napoleon Enteria, Hiroshi Yoshino, Akashi Mochida, Rie Takaki, Akira Satake, Ryuichiro Yoshie, Teruaki Mitamura, Seizo Baba

T08-20 Analysis and Construction of New Solar Liquid Desiccant Cooling Systems
Donggen Peng, Weihua Yang, Xiaosong Zhang, Yonggao Yin

Session Mo-F2: Multifunctional Facades and Building Structures-performance Prediction and Validation

Room: Hall 6

16:00—17:00 Monday

Chair: Marija Todorovic

F02-01 Integrating Insulation and Surface Finishes into Concrete Walls and Floors
Martha G. VanGeem

F02-02 Active and Multifunctional Building Facades and Structures Properties and Performance Determination
Marija Todorovic

F02-03 Empirical Validation Data Sets for Double Skin Façade Models
Olena Kalyanova, Rasmus Lund Jensen, Per Heiselberg

17:00—18:00 Poster Session

Session Mo-Po1: Poster Session I

Poster Display Area: Furama Ball Room Foyer

- T01-05 Simulations on Water Film over Roofs for the Cooling of Buildings
Runsheng Tang , I. A. Meir
- T01-38 The Effect of Building Envelope on Peak Cooling Load Reduction of HVAC System and Its Impact on Energy Conservation
Zhun Li, Changzhi Yang
- T01-46 Influence of the Window-wall Ratio on Energy Consumption of Civil Constructions in the Region of Hot Summer and Cold Winter
Zhen Chen , Jiapeng He, Qiuyu Xu
- T01-51 Systemic Evaluation of Envelop Thermal Performance of Residential Buildings
Jinghua Yu, Changzhi Yang, Dan Liao, Liwei Tian
- T01-65 Numerical Simulation of Centrifugal Impeller in High Temperature Heat Pump System with Variable Flux
Shuang Li, Shijun Ma, Jili Zhang
- T01-76 Field Measurements of Urban Residential Energy Consumption and Thermal Environment in China
Zhongtian Jiang, Hiroshi Yoshino, Zhenhai Li, Nianping Li, Jing Liu
- T01-95 Energy Performance of Air-cooled Chillers with Sprayed Water on Condenser
Jian Lu, Shengfeng Ren, Junlan Yang, Ru Chang, Zheng Shen, Hongxing Yang
- T02-16 Effectible Factors of Ground Source Heat Pumps Operating Characteristics
Jinggang Wang, Mingjie Zhang, Jie Liu
- T02-22 Experimental Study on Dynamic Thermal Response of a Passive Solar Cooling System
Jinling Zhao, Bin Chen, Zhi Zhuang
- T02-35 A Hybrid Cooling System to Reduce Building Energy Consumption
Lisa Guan, John Bell, Alan Sharp, Michael Ball, Dale Gilbert
- T03-01 Establishment of Human Thermoregulation Model and Simplified Solution in Non-uniform Environment
Lin Duanmu, Yuming Sun, Xiangli Li, Zhonghua Hou, Shengqiang Shen
- T03-02 Progress on Purification Techniques for Improving Indoor Air Quality
Haiying Wang, Angui Li, Songtao Hu
- T03-10 Thermal Activated Buildings Systems; the Resulting Thermal Comfort
Wim Zeiler , Gert Boxem

T03-19 Measurement of Research on the Indoor Air Quality of the Modern Bamboo House in China

Shubo Xiao, Nianping Li, Hui Zhou, Qie Su, Ji Ni, Ruizhen Yang

T03-31 The Effect of Plants on Outdoor Thermal Sensation in Subtropical Climatic

Jen-Hao Lo, Ming-Jen Cheng, Ruey-Lung Hwang

T03-34 Measurements of Outdoor Thermal Environment in Apartment Complex in Summer

Hualan Piao, Mira Moon, Jungwoo Nam, Beungyong Park, JongYeon Lim, Taeyeon Kim, Seung-bok Leigh, Doosam Song

T03-51 Mathematical Simulation of Particle Penetration Through Smooth and Rough Building Envelop Leakage

Liwei Tian, Guoqiang Zhang, Jinghua Yu, Quan Zhang, Jin Zhou

T03-91 A Thatched Roof Smoking Experiment of Traditional Residential Buildings in Japan and Renovation of Ancient Japanese Sake Cellar

Yan Wang, Yasuko Yoshino, Takumi Osawa, Katsuaki Sekiguchi, Kazukiyo Kumagai

T04-01 Experimental Investigation on Noise Level in Terminal Air Conditioning Unit

Fang Wang, Junfeng Shi, Yuteng Wang, Meijing Liu

T04-04 Sound Insulation Performance of Gypsum-board Walls by Various Influence Factors

Hyun-jung Choi, Kyoung-woo Kim, Young-sun Jeong, Kwan-seop Yang

T05-04 Experiment and Evaluation of the Influence of Dynamic Outdoor Artificial Lighting on Vision and Perception

Ming Liu, Jian Ma, Baogang Zhang

T06-06 The Research on the Underground Temperature Change Around the Double Vertical U-tube Ground Heat Exchanger in Winter

Zhijia Zhou, Shihua Zhang, Lingyan Li

T06-12 Numerical Study on Hybrid Ventilation System of Classroom

Shuhui Xu, Zhebin Wang, Ying Yan

T06-20 Simulation of the Effect of Smoke-exhausting Way and Outlet Arrangement on Smoke Diffusion in Walkway Under Nature Ventilation

Chengyin Jing, Jiapeng He, Ru Zhou, Qiuyu Xu

T06-26 The Influence Characteristic of In-house Interferential Factors on Thermal Stratification in Room

Xuemin Sui, Yanling Guan, Angui Li, Xu Zhang

T06-55 A Study on Influencing Factors of Night Ventilation Efficiency

Teng Fu, Zhonghua Tang

T06-58 Study on Ventilation Pattern of Outdoor Air Intake from the Back of Local Exhaust Hood in Hotel Kitchen

Zhihong Zhang, Zhonghai Chen, Jincheng Xing, Yuanting Yu

T06-63 Experimental Study on Performance of Electret Filtration Materials

Yinghui Wang, Henggen Shen

T07-16 Improving Thermal Physical Property of LiBr Aqueous Solution by Adding Nano-particles and Dispersants

Guozhen Xie, Shujuan Guo, Gang Wu

T08-10 Experimental Study on Energy Conservation of Variable Chilled Water Temperature with DDC

Cong Zhou, Hong Zou, Jianbo Chen

T08-18 Freezing and Heat Transfer Characteristics of Turbulent Flow Water in Freezing Latent Heat Exchanger

Jianfeng Qian, Jiandong Meng, Dexing Sun

T08-30 Analysis of Novel Multi-function Heat-Pump System Applicable to Indoor Swimming Pool Space

Xiaofeng Niu, Kai Du, Xiaosong Zhang

T08-56 Thermodynamic Comparison Between Real Thermoelectric Refrigeration System and Compression Ones

Qinghai Luo, Zehua Liu

T08-62 Preliminary Experimental Study on Heat Transfer Performance of the Radiant Floor Heating and Cooling System

Pin Wu, Chao Chen, Jie Lin, Yiwen Jian, Wei Zhou

T08-70 Simulation and Analysis of Triple-effect Lithium Bromide Absorption Cycles

Leilei Wang, Shijun You, Hejiang Sun

T08-74 Investigation on Air-flow Fields in Air Side Heat Exchanger of an Air Source Heat Pump Heater/Chiller

Jiaying Gong, Xiuling Yuan

T08-90 The Study on the Optimal Operation of Groundwater Heat Pumps

Yongan Ao, Jinhua Chen, Congmin Wang, Lin Duanmu, Shengqiang Shen

T09-08 Study on Energy Consumption of Breathing-type Glass Curtain Wall in Chinese Cold Region in Summer

Zhihua Zhou, Lingyan Li, Shihua Zhang

T09-30 Energy Saving and Indoor Comfort Features in Residential Buildings Using Electro-chromic Windows

Concettina Marino, Antonino Nucara, Antonio Piccolo, Matilde Pietrafesa, Alfredo Pudano

T09-38 Research on the Preparation and Crystallization Action of Porous Glass-ceramics Based on CSA system
Mei Yang, Lijiu Wang, Shanyu Zhao

T09-42 Energy Efficiency of Double-skin Façade in Office Buildings of Shanghai
Lu Sun, Phil J. Jones, Don K. Alexander

T10-15 Research About the Auto-control Design of the HVAC System in BSL-3 Laboratory
Chengzhi Lou, Gang Han

T10-17 Intelligent Building Assessment Rating Methods
Yu Ma, Kecheng Liu

T11-09 The Structure Development for the General Steady-state Compression Refrigeration Virtual Laboratory
Yunyu Jiang, Caihua Liang, Xiaosong Zhang

T11-17 Analysis of CO₂ Emission of Apartments Based on Major Construction Materials
Young-Sun Jeong, Chang-U Chae, Jae-Sik Kang, Seung-Eon Lee

T11-37 Numerical Study on the Impact of Air-conditioning Use on Outdoor Thermal Comfort and Heat Island Formation in Urban Districts
Jiang He, Akira Hoyano

T11-46 Predication of Building Energy Consumption Based on PLSR
Hailin Mu, Ming Zhang, Xudong Kang, Yadong Ning, Yongchen Song

T12-02 Integral Design of Flexible Sustainable Energy Infrastructures; Flexergy
W. Zeiler, Gert Boxem, Rinus van Houten, Willem Wortel, Joep van der Velden, Rene Kamphuis, Maarten Hommelberg, Henk Broekhuizen

T12-17 Economical Match of Radiators and Water Source Heat Pump Hybrid Heating System
Hejiang Sun, Yunxia Zhang, Shijun You

T13-11 Evacuation Strategy for Supertall Buildings
Edgar C.L. Pang, W.K. Chow

T13-18 Fuzzy Evaluation of the Social and Environmental Impacts of Multi-purpose Public Projects Involving Multiple Stakeholders
Xiwang Zhu, Congdong Li, Bo Wang, Xinyue Hu, Jiangang Cheng

T13-23 Study on the Appraisal Indicator System of Large-scale Public Building Green Degree
Youhao Xu, Yunliang Hu, Qianying Ge

T14-07 COP-restricting Parameter Analysis of Centrifugal Refrigerating Units
Xinyu Li, Xing Jin, Jie Chen

T14-24 Application of Air-conditioning Technology with Independent
Temperature-humidity Control in Textile Mills
Xinyu Li, Jie Chen, Xing Jin, Jie Xu

18:30 Dinner

Lee Wan Business Hotel

Tuesday, July 15 2008

08:00—10:00 Parallel Sessions

Session Tu-T2.3: Impact of Solar Radiation and Ice Storage on Building Energy Performance

Room: Hall 3

08:00—10:00 Tuesday

Co-Chairs: Junjie Liu and Badr Habeebullah

T01-49 A Case Study of Energy Performance for Solar Film Coating in an Air-conditioned Commercial Building

Danny Hin Wa Li, Sai Lee Wong, Ada Hoi Lam Mak

T01-58 Distribution of Beam Solar Radiation in Buildings. Effect on Heating Demand.

Pierre Tittlein, Louis Stephan, Etienne Wurtz, Gilbert Achard

T01-57 Building Energy Simulation Using the ANNs Modelled Solar Radiation in Different Solar Climates

Kevin K.W. Wan, Liu Yang, Joseph C. Lam

T02-27 Outdoor Calorimetric Test Facility for Solar Heat Gain Through Glass Windows

Xing Jin, Xiaosong Zhang, Tong Qiu, Shuhong Li, Yiran Cao

T02-34 A Study of Solar Irradiance on Inclined Surfaces and Design Implications

Danny Hin Wa Li, King Lok Cheung, Sai Li Wong, Tony Ngan Tung Lam

T14-13 Economical Analysis of Ice-storage Air-conditioning Technology Applied in One Project in Beijing

Qiang An, Xunjun Hao

T08-93 A Novel Vertical Rectangular Capsule Ice Storage Tank

Huan Zhang, Xiaojing Yang, Ning Zhang, Shijun You

T12-04 Direct External Ice-on-coil Storage Tanks for Buildings Load Management

Badr A. Habeebullah, Galal M. Zaki

Session Tu-T6.3: Airflow and Ventilation (2)

Room: Hall 4

08:00—10:00 Tuesday

Co-Chairs: Chao-Hsin Lin and Risto Kosonen

T11-01 Real-time Airflow Simulation in Buildings by Using Graphic Processing Units

Wangda Zuo, Qingyan Chen

T12-16 Performance of Turbulence Models for Indoor Forced Convection Using Verification and Validation

Zhen Liang, Jili Zhang, Yajun Lu, Henggen Shen

T06-02 Numerical Simulation and Experimental Study of Air Flow Characteristics in the Architecture Interlayer
Xiaohua Li, Fuhua Gong

T06-39 Impact of Different Types of Fans in a Novel Enhanced Displacement Ventilation System on Vertical Temperature Profile and Air Distribution in a Field Environment Chamber
Weimeng Sun, David K. W. Cheong, Arsen K. Melikov

T07-22 Study on Evaluation Method of Residential Ventilation in China
Zhichao Wang, Zhijun Liu

T01-03 Environmental Parameters Distribution and Energy Saving Analysis with Personalized Ventilation System
Yuming Sun, Lin Duanmu, Xingli Li, Haiwei Shu, Zongshan Wang

T06-61 Impact of Heat Load Location and Strength on Air Flow Pattern with a Passive Chilled Beam System
Risto Kosonen, Pekka Saarinen, Alex Hole, Hannu Koskela

Session Tu-T8.4: Heat Pump (2)

Room: Hall 5

08:00—10:00 Tuesday

Co-Chairs: Guanyi Chen and Zhenqian Chen

T08-78 Study of CO₂ Transcritical Cycle Heat Pump Water Heater
Minxia Li, Wenjin Gong, Yitai Ma

T08-94 A New Form Floor Heating Using Transcritical CO₂ Heat Pump System as Thermal Resource
Linlin Wang, Minxia Li, Yitai Ma

T08-34 Experimental Investigation of a Novel Air Source Heat Pump for Cold Climate
Xu Jin, Shugang Wang, Meng Huo

T08-75 Analysis of Alternative Refrigerant in Water Source Heat Pump System
Yuntao Jiang, Yitai Ma, Hongli Wang

T08-87 Numerical Value Calculation and Energy Consumption Analysis on Gas Engine Driven Heat Pump
Zhenjun Xu, Zhao Yang, Zheng Fang

T14-20 The Natural Gas CCHP System with Heat Pump and It's Experiment
Lin Fu, Xiling Zhao, Shigang Zhang, Zuoliang Sun, Hui Li, Kecheng Geng

T08-99 Study on the Operating Parameters in Metal Hydride Refrigeration Cycle
Junjie Liu, Mingxiu Jiang, Bin Wang

T13-17 Economic Analysis of EHP and GHP Systems

Youngil Kim, Kwang-Seop Chung

Session Tu-T1.3: Advanced Building Energy Simulations

Room: Hall 2

08:00—10:00 Tuesday

Co-Chairs: Ismet Ugursal and Xu Zhang

T14-02 Operational Energy Efficiency Evaluation Method for Large-scale Public Buildings and Development of Database System
Yunhua Li, Jili Zhang

T11-11 The Application of Energy Simulation Program to Sustainable Building Performance
Xijing Zhao, Chris Hsieh, Celine Xi

T14-11 Energy Saving Effect of Hotel Central Air Conditioning Systems with Energy Efficiency Management System
Delin Wang, Wei Chen, Yi Li, Juxin Chen, Jibing Han, Miao Zhai

T12-06 Influencing Factors Analysis of Energy Consumption of an Office Building in Nanjing Based on Bin Method
Jian Zhao, Jinxiang Liu, Gao Ding

T11-42 Indoor Thermal Environment and Heating Energy Saving Analysis of Residential Buildings in Northern Small Towns of China
Jing Zhao, Neng Zhu

T11-30 Interoperability of Building Information Model and Energy Simulation to Improve Building Energy Demand and Performance
Pongsak Chaisuparasmikul

T11-40 One Simulation Tool for Urban Building Energy Planning
Lin Fu, Zhonghai Zheng, Sui Jun, Nianchang Li, Jie Chen, Hongfa Di, Yi Jiang

T11-03 A New Hybrid End-use Energy and Emissions Model of the Canadian Housing Stock
Lukas Swan, V. Ismet Ugursal, Ian Beausoleil-Morrison

Session Tu-FI: Advanced Technologies from Industry

Room: Hall 6

08:00—10:00 Tuesday

Chair: Yufeng Zhang

FI-01 Solution of Continuous Mechanical Extract Ventilation (CMEV)
Xiaoqing Bai, Aldes (Shanghai) Indoor Air Technology Co.,Ltd, Shanghai, China

FI-02 Building Energy and Environment Management System (BEMS) to Achieve Energy Saving and Comfort
Yamatake Corporation Building Systems Company
Yamatake Environmental Control Technology (Beijing) Co., Ltd

10:00—10:30 Coffee and Tea**10:30—12:30 Parallel Sessions****Session Tu-T4, T5: Lighting and Vibration****Room: Hall 3****10:30—12:30 Tuesday****Co-Chairs:** Khee Poh Lam and Valentina Serra

T05-01 A New Approach for Subjective Evaluation of the Luminous Environment of a Daylit Office with Side Windows

R.T.H. Ng, T.M. Chung, H.D. Cheung

T05-02 Study on Indoor Day-lighting Control with Shading Devices

Zhengrong Li, Haozhu Li, Sheng Yu, Xuan Du, Jianguo Geng, Haidong Zhang, Qian Huang

T05-09 User Preference Based Control Strategy of Automated Blind

Hye-Yeon Ku, So-Young Koo, Myoung-Souk Yeo, Kwang-Woo Kim

T05-11 Energy Consumption Assessment of Lighting Installations Equipped with Control Systems Through the European Standard EN 15193 Approach: A First Comparison with Measured Data

L. Blaso, A. Pellegrino, V. Serra, C. Aghemo

T12-13 Automated Calculation of Lighting Regulations

Yichun Huang, Khee Poh Lam

T12-12 Development of a Lighting Simulation Tool for Integrated Building Design

Khee Poh Lam, Yichun Huang, Gregory M. Dobbs

T04-06 Research on the Control of GEHP's Vibration and Noise

Zheng Fang, Zhao Yang, Yuan Yan

Session Tu-T3.3: Thermal Comfort (1)**Room: Hall 4****10:30—12:30 Tuesday****Co-Chairs:** Hui Zhang and Kwang Woo Kim

T03-03 Energy Consumption and Comfort Study in Sub-Saharan Africa

Anthony C. Ogbonna, Douglas J. Harris

T03-58 Thermal Comfort in High MRT Environments: Case Study of a Commercial Single Store Glazed Building

Leonardo M. Monteiro, Daniel Costola, Alessandra Prata, Joana Gonçalves

T03-90 Research on Productivity Model in Hot and Humid Environment Based on Heat Tolerance Time Analysis

Jing Zhao, Neng Zhu

T03-66 Experimental Research on Human Thermal Comfort in Energy Storage Electric Floor Room in North China
Ruobing Liang, Guohui Feng, Jili Zhang

T03-92 Actual Conditions and Its Mechanism on Thermal Environment and Indoor Air Quality in a Japanese Traditional House Corresponding to Sericulture
Yan Wang, Yasuko Yoshino, Kazukiyo Kumagai, Katsuaki Sekiguchi

T03-30 In-situ Measurement of Indoor Thermal Comfort During Winter in the Subtropical Zone
Hsin-Hung Lee, Jian-Yuan Chen, Chih-Cheng Feng, Kun-Chih Tsai, Cheng-Tsair Yang, Jiunn-Haur Shaw

T03-110 Comfort and Energy Performance of a Low-power Task-ambient Conditioning System
DongEun Kim, Hui Zhang, Edward Arens, Fred Bauman, Charlie Huizenga, Elena Buchberger

Session Tu-T7: Sustainable Building Assessments

Room: Hall 5

10:30—12:30 Tuesday

Co-Chairs: B. V. Venkatarama Reddy and Zhiwei Lian

T07-06 Will High Service Quality of Maintenance Make High Occupants' Satisfaction to Their Office's IEQ?
Suh-Hyun Kwon, Min-Sun Park, LiNa, Bi-Na Kim, Ro-Yeul Kwak, Chung-Yoon Chun

T07-20 Tunneling Through the Cost Barrier—Achieving Results Through Integrated Design
James S. Brew

T07-03 Beyond LEED®, Green and High Performance Design—What's Next?
James S. Brew

T07-21 Sustainable Evolution of the Chinese Building Stock During the Urbanisation Process
Wei Yang, Niklaus Kohler

T07-04 Systems Built Digital Housing
James S. Brew

T07-14 The Stabilised Mud Block: a Low Carbon Emission Alternative for Masonry Buildings
B. V. Venkatarama Reddy

T01-50 Developing a Quick Assessment Tool for Annual HVAC Energy Consumption of Commercial Buildings in Taiwan
Kuo-Tsang Huang, Hsien-Te Lin

T07-24 Sustainable and Advanced Built Environment – a Singapore Experience

Eng Khiam Tan

Session Tu-T6.4: Particle Deposition, Dispersion and Filtration (2)**Room: Hall 2****10:30—12:30 Tuesday****Co-Chairs:** William Nazaroff and Byeong-Kyu Lee

T03-106 Control of Airborne Bacteria in a School Classroom Using a Novel Air Purification System

Kohei Nozawa, Keiko Kurokawa, Masahiro Iseki, Tatsuo Suzuki, Shugang Wang

T03-48 Fungal Spore Release for Air-flow Parallel to Surface

Zhen Lu, Weizhen Lu, Jili Zhang, Dexing Sun, Lin Duanmu

T03-81 Source Apportionment and Chemical Composition of PM₁₀ in University Classrooms of Changsha, China

Bingbing Shi, Qihong Deng, Jiandong Li, Chan Lu

T03-78 Characteristics of Particle Mass Concentrations in University Classrooms of Changsha, China

Qi Wang, Qihong Deng, Meng Tang

T03-11 Investigation and Analysis of Indoor Biological Pollution in a College Student Hostels in the South of China

Wenbi Liu, Yingyun Liu, Songhe Dian, Jie Liao

T03-104 Heated Surfaces Contribute to Indoor Ultrafine Particle Exposures

Nasim A. Mullen, Seema Bhangar, William W. Nazaroff, Nathan M. Kreisberg, Susanne V. Hering

T03-15 The Experiment Research on Transport of Biological Aerosol in Saliva Droplets Within a Room

Shusen Liu, Junjie Liu

T03-89 Exposure Analysis to Particulate Matter and Aldehydes During Eating Periods in Different Restaurants

Byeong-Kyu Lee, Ui-Ryang Jeong

Session Tu-F6: IAQ Problems in China: Current Status and Future Perspective**Room: Hall 6****10:30—12:30 Tuesday****Co-Chairs:** Guoqiang Zhang and Qihong Deng

F06-01 Survey of Indoor Air Quality in New Residential Building in Dalian in Winter and Validation of Improvement Results with a Ventilation Window

Bin Chen

F06-02 Acceptable Indoor Thermal Environmental Conditions for Non-industrial Buildings in China

Baizhan Li

F06-03 IAQ Problems in China in an International Perspective
Jan Sundell

F06-04 IAQ Research in China: What are on Agenda?
Xudong Yang

F06-05 Air Quality Problems in Chinese Coal Mines
Tengfei Zhang

F06-06 Health Effects of Indoor Particulate Matter: We Know Less than It Does
Qihong Deng

F06-07 Experimental Research on Metro Indoor Air Quality
Guiyuan Han, Junjie Liu, Ruiying Qi, Jiyong Wang

12:30—13:30 Lunch Break

13:30—15:30 Parallel Sessions

Session Tu-T9.2: Impact of Material on Building Energy Performance

Room: Hall 3

13:30—15:30 Tuesday

Co-Chairs: Leif Gustavsson and Hiroatsu Fukuda

T12-10 Energy Implications of End-of-life Options for Building Materials
Ambrose Dodoo, Leif Gustavsson, Roger Sathre

T01-104 The Impact of AC Pattern and Heat Insulation Method on AC Load of Super High-rise Residences
Yupeng Wang, Hiroatsu Fukuda, Ozaki Akihito, Yuko Kuma

T01-103 Effect of Heat Insulation Methods on AC Load of Super High-rise Residences with In-frame Structure and Out-frame Structure
Hiroatsu Fukuda, Yupeng Wang, Ozaki Akihito, Yuko Kuma

T01-97 Study of the Characteristics on a Thermosyphon-embedded Floor Radiant Heating System
Hongting Ma, Yufeng Zhang, Na Deng

T07-05 Intensive, Integrated, Biomass-based Material and Energy Systems: Swedish Experience
Leif Gustavsson, Roger Sathre

T09-41 Estimating Thermal Performance of Cool Colored Paints
Kai L. Uemoto, Neide M. N. Sato, Paula Ikematsu, Vanderley M. John

T01-68 Multi-storey Wood Buildings in a Life Cycle Primary Energy Perspective
Leif Gustavsson, Anna Joelsson

Session Tu-T2.4: Wind Effect on Building Performance**Room: Hall 4****13:30—15:30 Tuesday****Co-Chairs:** Hong Huang and Jiang He

T02-29 Research on Wind-induced Natural Ventilation with Interference Effect by Upstream Building

Chuanzhi Liang, Neng Zhu, Guohui Feng

T02-28 Research on Pressure Coefficient Distribution in Different Height of Building

Chuanzhi Liang, Neng Zhu, Guohui Feng

T12-01 Wind Tunnel Tests on Flow-induced Vibration and Scattering of Japanese Slates

Satoru Okamoto

T02-50 Preliminary Study on Air Flow Characteristics of a New Automatic Wind Catcher

Zhiyuan Li, Chao Chen, Chung Sang, Zhiyong Li, Jianlei Shang

T01-16 A Gray-box Model of Next-day Building Thermal Load Prediction for Energy-efficient Control

Qiang Zhou, Shengwei Wang, Fu Xiao, Xinhua Xu

T01-37 An Evaluation of Parameter Weights that Create the Typical Meteorological Years for Analyzing Building Energy Consumption

Fenxian Su, Joe Huang, Congjun Zhang, Xuelian Bai

Session Tu-T3.4: VOC Impact on Indoor Air Quality**Room: Hall 5****13:30—15:30 Tuesday****Co-Chairs:** Yasuko Yoshino and Xudong Yang

T03-88 Abatement of Volatile Organic Compounds (VOCs) with DBD System

Xin Zhou, Qihong Deng, Huixuan Cai, Tianzhi Yang

T03-76 Removal of Indoor VOCs Using Bioaugmentation

Yang Lu, Jing Liu, Hiroshi Yoshino, Bingnan Lu, Anxi Jiang, Chunli Wan

T03-80 A Method for Rapid Classification of VOCs and Building Materials for Quantification of Indoor Sinks

Qinqin Deng, Jianshun Zhang, Xudong Yang

T03-94 Research of Low Temperature Plasma- TiO₂ Photocatalysis Composite Synergies Purify Indoor VOCS

Guohui Feng, Shui Yu, Quan Yuan, Xiguo Su, Dan Deng, Xiangyang Jiang, Zhenhong Guo

T03-97 The Effects of Building Characteristics on the Chemical Composition of Surface Films on Residential Glass Windows

Josephine R. Duigu, Godwin A. Ayoko, Serge Kokot

T03-53 Study on Filtration Model of Indoor Formaldehyde Biodegradation by Pseudomonas Putida

Junjie Liu, Ruiying Qi, Bojia Li

T03-57 An Analysis of the Decay Rate of Combustion Gases in U.S. Homes Using Unvented Gas Fireplaces

Paul W. Francisco, Jeffrey R. Gordon, William B. Rose

T03-102 The Reduction of Volatile Organic Compounds According to the Position and Amount of Korean Native Plants

Jeong-Eun Song, Yong-Shik Kim, Jang-Yeul Sohn

Session Tu-T8.5: Heat and Mass Transfer in HVAC Systems

Room: Hall 2

13:30—15:30 Tuesday

Co-Chairs: James Brew and Vivi Chao

T08-72 Research on Energy Saving Effect and No Cross Contamination Characteristic for the Rotary Type Total Heat Exchanger

Weili Jin, Hiroshi Okano, Yan Su

T07-13 Experimental Heat and Mass Transport Analysis of Coupled Rotating Sorption and Sensible Wheels

Napoleon Enteria, Hiroshi Yoshino, Akashi Mochida, Rie Takaki, Akira Satake, Ryuichiro Yoshie, Teruaki Mitamura, Seizo Baba

T08-92 Effect of Gas-Liquid-Solid Contact Angle on Forced Convective Heat Transfer of Flue Gas with Condensation

Yuanyuan Wu, Suilin Wang, Hongbing Chen

T08-35 Experimental Research on the Operational Characteristics of Household Air-conditioner with Condenser Heat Recovery

Weijie Zhang, Yanbing Gao, Yiran Wei

T08-04 The Experimental Study and Simulation on Heat Transfer Performance for the Automobile Air-conditioning Parallel Flow Condenser

Liping Xiang, Hanqing Wang, Kongqing Li

T08-91 Study on Application of Heat Recovery Technology of Flue Gas Condensation in the Reform of Gas Boiler

Suilin Wang, Chunlei Zhang, Shuyuan Pan, Guichang Liu, Xiaoyi Ai, Yongzheng Shi, Zhongcheng Fu, Hongbing Chen

T08-60 Row Effect for R245fa Condensed on Smooth Tubes and Its Elimination in Shell and Tube Condenser

Zhixian Ma, Jili Zhang, Jun Xiong

T08-32 Experimental Study on a New System of Low Temperature and Humidity Under Frosting Conditions

Wen Su, Tianwei Zhang, Shusen Liu

Session Tu-F8: Advances in EnergyPlus Development and Application

Room: Hall 6

13:30—14:30 Tuesday

Chair: John Zhai

F08-03 An EnergyPlus Plugin for SketchUp
Peter Ellis

F08-04 A Simple HVAC Interface of EnergyPlus in Chinese and Application in Projects
Junjie Liu

F08-01 Simulation-assisted Conceptual Building Design – Integration in a Real Case Study
John Zhai

F08-02 Heat Efficiency of a Plate Enthalpy Exchanger and Its Energy Saving Performance in a Residential Building
Junjie Liu, Wenshen Li, Jiang Liu, Bin Wang

Session Tu-F3: Inverse Tracking of Indoor Pollutant

Room: Hall 6

14:30—15:30 Tuesday

Chair: Qingyan Chen

F03-01 Rapid Contaminant Mass and Source Location Estimation Using Limited Sample Data from CFD Results
James S. Bennett, Sean A. McKenna, Stanley A. Shulman, W. Karl Sieber

F03-02 An Approach to Interpreting Critical Indoor Pollution Scenes of a Whole Building with Limited Sensor Outputs
Xiang Liu, John Zhai

F03-03 Comparison of the Quasi-reversibility and Pseudo-reversibility Methods in Identifying an Indoor Airborne Contaminant Source
Tengfei Zhang, Qingyan Chen

F03-04 Identification of Bio-particle Contamination Source in the Stainless Experiment Chamber by Experiment and Inverse Calculation Method
Shusen Liu, Junjie Liu, Guiyuan Han

15:30—16:00 Coffee and Tea

16:00—18:30 Social Tour

18:30 Party and Performance

Chair: Junjie Liu

Delight Hotel

Wednesday, July 16 2008**08:00—09:00 Plenary Session****Session We-P2: Plenary Session II****Room: Hall 6****Co-Chairs:** Fariborz Haghighat and Yingxin Zhu

P2.1 Sustainable Building Design, Koen Steemers (UK)

P2.2 Ventilation and Health in Built Environment, Yuguo Li (China)

09:00—10:00 Poster Session**Session We-Po2: Poster Session II****Poster Display Area: Furama Ball Room Foyer**

T01-14 Analysis of Energy-saving for HVAC System Based on Building Environment

Mengying Li, Zhonghua Tang

T01-48 Decision on Window-wall Ratio and Window Materials of Typical Office Buildings in Shanghai Based on LCA

Xing Su, Xu Zhang

T01-52 Energy Performance of Window System in Residential Buildings

Jinghua Yu, Changzhi Yang, Liwei Tian, Dan Liao

T01-75 Investigation of Urban Residential Energy Consumption in China

Hiroshi Yoshino, Zhongtian Jiang, Zhenhai Li, Nianping Li, Jing Liu, Weiliang Lu, Qingqing Pei, Jie Zheng, Yingxin Zhu

T01-94 The Energy Saving Analysis of Coupled Water Source Heat Pump System Applied in Campus Building

Jing Zhao, Neng Zhu

T01-109 Analysis on Trends of Urban Housing Energy Consumption in Shanghai

Yadong Ning, Yutaka Tonooka, Xing Zhao, Hailin Mu

T02-21 Numerical Simulation of the Performance of a Solar-induced Ventilation Wall

Weibo Yang, Guangyuan Liu, Mingheng Shi

T02-24 Experimental Research on a Seawater–Geothermal Hybrid System

Junhua Wu, Shijun You

T02-69 The Investigation on Energy Conservation Potential of Natural Gas Heating Boilers

Sumin Lei, Suilin Wang, Yongzheng Shi, Chunlei Zhang

T03-06 Field Studies of Heating Effect on Thermal Comfort in Spring in a Frosty Zone

Jian Wang, Zhaojun Wang

T03-12 Fuzzy Comprehensive Evaluation Method of Indoor Air Quality Based on Entropy Technology

Guohua Shi, Youyin Jing, Xutao Zhang

T03-23 Study on Healthy Risk Assessment of Residential Indoor Environmental in Four Cities in Hunan Province

Jianlong Liu, Chaoyi Tan, Guoqiang Zhang

T03-33 Experimental Study on Resuspension Characteristics of Inhalable Particles in Under Floor Air Distribution System

Can Li, Nianping Li, Xingling Zhou, Meixia Wang, Guocai Yao

T03-36 Indoor Air Quality of New Hotels: Grey Theory Approach

Wilco Chan, Shun-Cheng Lee, Jazz Chan, Youming Chen, Barry Mak, Cong Zheng, Xingguo Guo

T03-82 Study on Proper Design Strategy for Prevention Against Low Humidity Environment in Winter

Huibo Zhang, Hiroshi Yoshino, Rie Takaki, Teruaki Mitamura, Tomonari Chiba, Yoichi Sakurai, Sounghun Yun

T03-100 The Impact of Thermal Comfort Indoor on Physiological Parameters of Human Body

Jie Zheng, Lingling Zeng, Baizhan Li, Shenglan Jing, Heng Guo

T03-114 Measurement and Evaluation to the Influence of Indoor Formaldehyde and Ammonia Concentration from Decorations and New Furniture upon

Nan Lu, Neng Zhu, Yan Ding

T04-02 A Study on the Change in Dynamic Stiffness of Resilient Materials According to the Load Duration

Kyoung-woo Kim, Hyun-jung Choi, Kwan-seop Yang, Jang-yeul Sohn

T05-03 Daylight and Urban Forms – Synergy or Contradiction?

Jozef Hraska

T05-10 Energy Efficient Buildings by Energy Efficient Lighting: the Role of New Systems and Materials

Franco Gugliermetti, Fabio Bisegna, Laura Monti

T06-11 The Research on Velocity of Air of Typical Handling Processes in Air Washer Room

Sha Li, Longjie Zhou, Dawei An, Jiafang Song, Zhi Ji

T06-17 Optimal Ventilation Strategies in Residential Apartment Buildings

Young-Jin Kim, Cheol-Soo Park

T06-21 Analysis and Optimization of Ventilation Mode of Exhaust Smoke System in Subway Station Fires

Ru Zhou, Jiapeng He, Juncheng Jiang

T06-47 The Experimental Research on the Classification of Air Cleanliness for Non-unidirectional Flow Cleanroom

Junjie Liu, Qun Ma, Haidong Wang, Jiancheng Qi, Yanju Li, Wei Sun

T06-51 Experimental Research and Numerical Simulation of Airflow Performance in Level-3 Biosafety Laboratory

Jianglong Li, Jihong Ling, Jincheng Xing, Guangbei Tu

T06-57 The Theory and CFD Analysis of Buoyancy Force in Tiered-seating Classroom

Wei Yin, Guoqiang Zhang

T06-62 Comparison between Comprehensive Correction Factors

Ming Guo, Zhigang Zhang

T07-11 Optimisation of Solar-optical and Thermal Properties of Buildings Incorporating Solar Panels, Emulating Traditional Chinese Building Style

David A. Johnston

T07-23 Energy Efficiency Technology Potentials for Home and Industry in Sub-Saharan Africa

M.T.E. Kahn

T08-05 Study on Thermal Efficiency of Gas-fired Vacuum Hot Water Boiler

Zhihong Zhang, Lishan Ma, Guichun Yang, Yuanting Yu

T08-17 Choices of Operating Parameters in Freezing Latent Heat Exchanger Based on Entropy Generation Theorem

Jianfeng Qian, Lijun Zhang, Dexing Sun

T08-29 Experiment and Performance Investigation into Novel Vertical Capsulated Plate Ice Storage Equipment

Baogang Zhang, Shijun You, Ming Liu, Huixing Li

T08-41 Influencing Factors on Thermal Performance of Countflow Cooling Tower

Changxing Zhang, Songtao Hu

T08-57 Condensation Heat Transfer of R134a Outside Horizontal Enhanced Tubes – Effect of Fin Parameters

Dingcai Zhang, Xiaowei Fan, Liangdong Ma

T08-65 Prediction of the Performance of Falling Film Evaporator with Horizontal Tube Bundle Based on a Distributed Parameter Model

Yuyan Zhai, Xinghua Huang

T08-71 Experimental Research of Enhancing Heat Transfer Performances of the Radiant Tube in Gas-fired Radiant Heating System

Zhanping You, Shijun You, Yong Luo

T08-88 Experimental Studies of Direct Evaporation Ice-on-coil with Variable Coil Arrangement Density

Yin Liu, Guanghui Zhou, Angui Li, Xiaofei Xu

T08-96 Performance Study on a Vapour Compression Refrigeration Cycle Using R744/R290, R744/R600 or R744/R600a as Refrigerant

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10:30—12:30 Wednesday

Co-Chairs: Jianing Zhao and Gert Boxem

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Zhiming Yang, Hans Cauberg

T06-48 A Study of Ventilation Performance of an Underfloor and Overhead Air Distribution System
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T06-35 Air Tightness Measurement in Residential Houses in Ireland
Liyan Guo, Donal Lennon, J Owen Lewis

T06-44 Preliminary Study on Explosion Control for Gas Leakage in Residential Buildings
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T06-45 Study on Air Supply Way with the Air Velocity of 0.2m/s in Playing-Fields of Badminton Gymnasium
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T03-09 Ventilation of Dutch Schools, an Integral Approach to Improve Design
Gert Boxem, Wim Zeiler

T01-54 Interest of Thermal Mass Activation in the Case of Natural Ventilation

Louis Stephan, Pierre Tittlein, Etienne Wurtz, Bernard Souyri

Session We-T9.3: Advanced Building Envelopes

Room: Hall 2

10:30—12:30 Wednesday

Co-Chairs: Neng Zhu and Bin Chen

T09-06 Determination of Moisture Diffusivity in Porous Building Materials Using Gamma-method

Mikhail I. Nizovtsev, Aleksey N. Sterlyagov, Viktor I. Terekhov

T09-02 Application of Microencapsulated Phase Change Material in Building Energy Conservation

Houde Han, Ankang Kan, Jun Ji, Guoliang Mei

T09-09 Experimental Study on the Thermal Performance of Paraffin Mixtures Used in the Phase Change Wall

Chen Liang, Quanying Yan, Lin Zhang

T02-37 Study on Heat Transfer of Solar Composite Wall

Zhi Tan, Lin Qiu, Kui Guo

T02-45 Numerical Simulation of Solar Wall System

Yanfeng Li, Chengyun Fu, Yuanwei Lu, Junmei Li, Xiangling Duanmu

T02-62 The Research on Multiple Applications of the Solar Wall and Phase-change Floor

Shui Yu, Guohui Feng, Xiangyang Jiang, Qinghui Wang, Yang Sun, Wei Li

T01-92 Experimental and Numerical Results of Summer Comfort in a Building Equipped with Phase Change Materials (PCM)

Joseph Virgone, Frédéric Kuznik

T01-25 Thermal Performance of Phase Change Paraffin Wall in Different Mass Proportions

Chen Liang, Quanying Yan, Lin Zhang

Session We-F1: A Commentary on the Residential Energy Consumption in China: Data Secured and Required

Room: Hall 6

10:30—12:30 Wednesday

Chair: Hiroshi Yoshino

F01-01 Projects on Energy Consumption and Indoor Climate of Urban Residential Building Investigation in China

Hiroshi Yoshino, Zhongtian Jiang, Zhenhai Li, Nianping Li, Jing Liu

F01-02 Energy Consumption and Indoor Environmental Quality in Chinese Rural Housing: Current Status and Development Trend

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Yutaka Tonooka, Yadong Ning

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F01-05 Energy Consumption and Energy Saving Potential Analysis for Residential
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Nianping Li, Shuqin Chen, Hui Zhou, Ji Ni, Lijun Hu, Xiaoqing Wei

F01-06 Statistical Analyses on Summer Energy Consumption Characteristics of
Residential Buildings in Some Cities of China
Shuqin Chen, Hiroshi Yoshino, Nianping Li

12:30—13:30 Lunch Break

13:30—15:30 Closing Ceremony

Room: Hall 6

Chair: Qingyan Chen, Co-Chair of COBEE 2008 Organizing Committee, Purdue
University

COBEE 2008 Summary: Junjie Liu, Co-Chair of COBEE 2008 Organizing Committee,
Tianjin University

Poster Award Presentations: Neng Zhu, Co-President of COBEE 2008, Tianjin
University
Jili Zhang, Co-President of COBEE 2008, Dalian
University of Technology

Welcome to COBEE 2012: John Zhai, Co-Chair of COBEE 2008 Organizing
Committee, University of Colorado at Boulder

Detailed Social program

Bin Hai Road

16:00-18:30, Tuesday, July 15

Coach will leave at 16:00 from Furama Hotel Dalian and will return around 18:30 to Delight Hotel for party and performance.



Bin Hai Road stretches along Dalian's famous coastline and is a sightseeing must for visitors to the area. The 35-kilometer-long road borders Xing Hai Square in the west and Dong Hai Park in the east. One side of the road features mountainous areas covered with forests while the opposite side reveals the panoramic coastline and sea. Due to the clear, fresh air and the sea, locals have nicknamed the road the “natural oxygen bar”.

Seawater Source Heat Pump Project

13:00-15:00, Sunday, July 13

Coach will leave at 13:00 from Furama Hotel Dalian

The seawater source heat pump project was initiated in 2005 in Dalian for building heating and cooling in the Xinghai bay area and then was selected as one of the demonstration projects for building utilization of renewable energy by the Chinese Ministry of Construction. The seawater heat pump project is designed to heat up or cool down buildings with a total area of 1.3 million square meters in the business region near Xinghai Square of Dalian. The project is still under construction and will be completed soon.

Tours for Accompanying Persons

Due to lack of responses, the COBEE Organizing Committee organizes only two tours for the conference participants and their accompanying persons. One is LT1 on July 17, the tour to the Golden Pebble Beach, which starts at 07:00 and ends at 17:00. The other is LT3 on Monday, July 14 to the Ice Valley Scenic Area, which starts at 07:00 and ends at 18:00. The COBEE Organizing Committee has also invited several tour agents at the conference venue. If there are sufficient people interested, the tour agents can organize tours on your requests.

LT1: Golden Pebble Beach

07:00 - 17:00 on Thursday, July 17

Coach will leave at 07:00 from Furama Hotel Dalian



The Golden Pebble Beach is a national tourist resort located 50 km away from downtown Dalian. It is surrounded by sea on three sides and people can enjoy pleasant weather of warm winter and cool summer year around. Sinian rocks from 600 million years ago have formed into a magnificent landscape of grotesque stones in these areas. The Golden Pebble

Beach is known as “The Solidified Animal World”, “The Natural Geological Museum” and “The Magic Sculpture Park”. Scenic spots include the Golden Pebble Waxworks Hall, Stone Collection Hall, Golden Pebble Park, Ten-Thousand Fortune Pot, Chinese Martial Arts Hall, Golden Pebble Discovery Kingdom Theme Park, etc.



LT3: Ice Valley Scenic Area (Xianrendong National Natural Reserve)

07:00 - 18:00 on Monday, July 14

Coach will leave at 07:00 from Furama Hotel Dalian

Located near the Qian Shan Mountains, this massive reserve sits almost 600 meters above sea level and encompasses three sections: Dragon Hill, Small River Valley and Yingna River Valley. Despite its height, it enjoys a temperate climate, allowing plant and animal life to flourish. The reserve harbors 810 plant species and 196 different forms of wildlife, many of which are endangered. It also features Xianren Cave and its famous karsts rock formations dating back to the Pre-Sinian Period.



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Xinpeng Huang.....	We-Po2	Bernd Kalkum.....	We-Po2
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J		K. W. Kim.....	Mo-T3.1, Mo-T11
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Hisataka Kitora.....	Mo-T13.1	Jiandong Li.....	Tu-T6.4
Niklaus Kohler.....	Tu-T7	Jianglong Li.....	We-Po2
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Risto Kosonen.....	Tu-T6.3	Lixing Li.....	Mo-T8.2
Moncef Krarti.....	Mo-T3.2	Mengying Li.....	We-Po2
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Can Li.....	We-Po2	Dan Liao.....	Mo-Po1
Congdong Li.....	Mo-Po1	Dan Liao.....	We-Po2
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Jianlong Liu.....	We-Po2	Shijun Ma.....	Mo-Po1
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Jiuling Liu.....	Mo-T10	Barry Mak.....	We-Po2
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Jinming Zhang	Mo-T3.1	Cong Zheng.....	We-Po2
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