Venue

ZAO EXPOCENTR Russia, 123100, Moscow Krasnopresnenskaya nab., 14 Pavilion 7, Conference Hall





# Cold Climate HVAC

# Moscow, Russia May 21–24, 2006

# **PROGRAM**



On behalf of the Russian organizers it is a pleasure to welcome you to the 5th International Conference on Cold Climate – Heating, Ventilating and Air-Conditioning in Moscow.

The principal objective of Cold Climate HVAC 2006 is to provide key elements of a strategy by which scientists, designers, engineers, manufacturers and other decisionmakers can achieve a good balance between energy use in buildings and indoor environmental quality (IEQ), while conserving precious resources and energy, as well as prevent the environment from further deterioration, with emphasis especially on cold climatic regions.

The strategy for the development of architecture and building construction in the 21st century is based on the following precepts:

- ·application of technologies that use nonconventional renewable energy sources;
- the selection of energy conservation technologies where the technical decisions simultaneously promote improvement of the indoor environment;
- building on the basis of an integrated energy-ecology system, where all elements such as the envelope, heating, ventilating, air-conditioning systems, heat and power supply as well as the environment are interconnected.

Architecture and building construction in the 21st century enters a completely new stage in history, where the development of sustainable buildings is a reflection of the global problems encountered in society since the middle of the 20th century. The goal is to reduce the risk of poor IEQ and waste of energy by promoting a synthesis between the technical, architectural, economic and social sciences.

The Scandinavian Federation of Heating, Ventilation and Sanitary Engineering Associations (SCANVAC) initiated the series of Cold Climate HVAC Conferences. The four previous conferences have been successfully organized in Rovaniemi, Finland in 1994, Reykjavik, Iceland in 1997, Sapporo, Japan in 2000, and Trondheim, Norway in 2003. Now we wish you a fruitful work in Moscow, Russia.

After the Conference, we invite you to a fascinating one-day trip to Saint-Petersburg, a city that is regarded as one of the most beautiful in the world.

Beside the conference you and your spouse can explore the beautiful views of Moscow and suburbs.

Professor Marianna Brodatch President of Cold Climate HVAC 2006



# **Organizer of the Conference**



Russian Association of Engineers for Heating, Ventilation, Air-Conditioning, Heat Supply and Building Thermal Physics – ABOK

## **Organisation and Program Committee**

President: Professor Marianna Brodatch, ABOK and MARHI Scientific Committee: Professor Yuri Tabunschikov, ABOK Advisory Committee: Professor P. Ole Fanger, SCANVAC Conference Secretariat: Anna Onegina, Vadim Potapov, ABOK

## **Supporting Partners of the Conference**







Broad Air Conditioning

Termoros



## **Technical Partners**



Messe Dusseldorf



Messe Dusseldorf Moscow

## International Scientific Co-Sponsors



## **National Scientific Co-Sponsors**



# Media Partner: ABOK-PRESS







#### **Previous Cold Climate HVAC Conferences**

1994 Rovaniemi, Finland. President: *Prof. Juha Gabrielsson* 1997 Reykjavik, Iceland. President: *Prof. Gudmundur Thoroddsson* 2000 Sapporo, Japan. President: *Prof. Tohru Mochida* 2003 Trondheim, Norway. President: *Prof. Vojislav Novakovic* 

Working language - english with simultaneous translation

#### National Scientific and Organizing Committee (in alphabetical order of family name)

Dr. Aleksey Baranov, ZAO «Mikros Inzhiniring» Prof. Aleksander Dmitriev, Moscow's Department of Architecture, Construction, Development and Reconstruction

**Prof. Georgiy Esaulov**, Russian State Academy of Architecture and Construction Sciences

**Prof. Vladimir Gagarin**, Scientific research institute of building physics

Mr. Andrey Galusha, ABOK

**Prof. Loren Gulabiance**, Scientific research institute of building physics

**Mr. Anatoliy Gercen**, Moscow's Department of the fuel and energy complex

**Prof. Aleksander Grimitlin**, ABOK-Northwest **Prof. Vladimir Korkin**, Saint-Petersburg State Repin Academic Institute of Painting, Sculpture and Architecture

**Prof. Yuri Kuvshinov**, Moscow State University of Civil Engineering

Mr. Dmitriy Kuzin, Russian Association of

Russian Climate Industry Enterprises **Dr. Vadim Livchak**, Moscomexpertise **Prof. Elena Malyavina**, Moscow State University of Civil Engineering **Dr. Yuri Matrosov**, Scientific research institute of building physics **Dr. Alexander Naumov**, NPO «Termek» **Prof. Aleksey Nekrasov**, Russian State Academy of Architecture and Construction Sciences

Dr. Oleg Razumeyko, ABOK-Siberia

Dr. Tamila Sadovskaya, FGUP «Santeh Nilproekt»

Mr. Norbert Schmidt, Messe Dusseldorf Moscow

Dr. Viktor Semenov, Association «Russian Heat Supplying»

Dr. Albert Sharipov, FGUP «SantehNIIproekt»

Dr. Evgeniy Shilkrot, CNIIPromzdanii

Dr. Mihail Tarabanov, NIC «INVENT» Dr. Grigoriy Vasiljev, OAO «INSOLARINVEST»

#### International Committee (in alphabetical order of country)

Prof. Fegan Aliev Azerbaijan Prof. Hugo Hens Belgium Ms. Veronique Matthys Belgium Prof. Yuan Wei Wu China Prof. Jianing Zhao China Mr. Kalogirou Soteris Cyprus Mr. Karel Kabele Czech Republic Prof. Carl-Gustaf Bornehag Denmark Dr. Bjarne Olesen Denmark Mr. Jorma Railio Finland Prof. Olli Seppanen Finland Mr. Esko Tahti Finland Prof. Francis Allard France Ms. Katja Burbulla Germany Mr. Andreas Lucke Germany Mr. Gunther Mertz Germany Ms. Elke Moebius Germany Prof. Michael Schmidt Germany Mr. Hans R. Kranz Germany Dr. Magyar Zoltan Hungary Mr. Antonio Briganti Italy Mr. Alex Sandelewski Italy Prof. Mizuno Minoru Japan Prof. Tohru Mochida Japan

SIA

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# Program

# The 5th International Conference on Cold Climate Heating, Ventilation and Air-Conditioning

May 21 - 24, 2006 - Moscow, Russia

Conference Hall, 4th flour, Pavilion 7, ZAO EXPOCENTR Krasnopresnenskaya nab., 14

# May 21, Sunday

#### 16:00 – 18:00 Registration

**Banquet Hall: Room Desna, Ukraina Hotel,** 2/1 Kutuzovsky prospect, Moscow

18:00 – 20:00 Cocktail party

Banquet Hall, Ukraina Hotel, 2/1 Kutuzovsky prospect, Moscow

# May 22, Monday



Ukraina Hotel

9:00 – 18:00 Registration Foyer 4th flour, Pavilion 7, ZAO EXPOCENTR

11:00 – 12:00 Opening session

Welcome to Russia Marianna Brodatch, Professor, President of Cold Climate HVAC 2006

Welcome speech of Professor Vladimir I. Travush, vice-president of Russian State Academy of Architecture and Building Sciences, the chief designer of "Moskva-City"

Welcome speech of Professor P.Ole Fanger, SCANVAC President

Welcome speech of Mr. Lee Burgett, ASHRAE President

Welcome speech of Professor Olli Seppanen, REHVA President





12:00 – 13:00 Cafe break

13:00 – 15:00 Technical Session S1 Heat supply

Co-Chairmen:

Yuri Tabunschikov, Professor, Head of Department Moscow State Architectural Academy, Russia Bjarne Olesen, Professor, Director of International Centre for Indoor Environment and Energy Department of Mechanical Engineering Technical University of Denmark, Denmark Egidijus Blazevicius, Director of Institute of architecture and construction of Kaunas University of Technology, Lithuania

13:00 – 13:20 Calculation of the yearly energy performance of heating systems based on the European Building Energy Directive and related CEN standards Bjarne Olesen, Denmark

13:20 – 13:35 Indoor temperature as a collective goods Arne Jonsson, Sweden

13:35 – 13:50 Air-to-air heat pumps evaluated for Nordic circumstances Fredrik Karlsson, Peter Lidbom, Monica Axell, Ulla Lindberg, Sweden

13:50 – 14:05 Case study on the use of secondary sales electrical energy for load offsetting in a subarctic hospital Abdurahman Ross, Tatiana Goulko, Curt Hepting, Canada

14:05 – 14:20 Demand controlled hybrid ventilation, an alternative? Asa Wahlstrom, Henrik Quicklund, Svein Ruud, Sweden

14:20 – 14:35 The problems of a heat supply and an energy saving in the areas of Republic Buryatiya which are included in the central ecological zone of the Baikal natural territory Tatiana Ochirova, Veronika Shapkhaeva, Sergey Sidenov, Russia

14:35 – 14:50 Long history and near future of CHP in European cold climate Marija Todorovic, Serbia and Montenegro



#### 14:50 – 15:00 Poster presentations

"AEC" method of distributing energy for heat and work production Ruzhdi Bacova, Angjelin Shtjefni, Albania

Heat cost allocation and control of indoor temperature in multiple unit dwellings Arne Jonsson, Sweden

Experimental investigation on electric floor and ceiling heating systems Yanhua Liu, Tingxian Li, Shuping Dong, Shuixiang Zhang, China

15:00 – 15:30 Cafe break

15:30 – 17:15 Technical Session S2 Envelope of the building

#### Co-Chairmen:

**Branislav Todorovic**, Professor at the University of Belgrade, Serbia and Montenegro **Vadim Livchak**, Head of the Department of Construction Energy Efficiency of Moscomexpertise, Russia

**Arsen Melikov**, Technical University of Denmark, Department of Mechanical Engineering International Centre for Indoor Environment and Energy, Denmark

#### 15:30 - 15:50

Engineering calculation moisture behavior of high heat – performance structures, taking into account of the vapour and liquid moisture transfer Vladimir Gagarin, Vladimir Kozlov, Russia

#### 15:50 - 16:05

A comparison of time-of-wetness and wind-driven rain measurements on wooden cladding Kristine Nore, Jan Vincent Thue, James P. Rydock, Norway

#### 16:05 - 16:20

Modeling and simulation of solar and atmospheric irradiation of building Bjorn R. Sorensen, Norway

16:20 – 16:35 Thermal design of an autonomous instrument shelter for remote Antarctica Gary Phetteplace, Jason Weale, USA

16:35 – 16:50 Building envelope's infrared testing Oleg Lebedev, D. Kirzhanov, V. Avramenko, O. Budadin, Russia





16:50– 17:05 Energy audit and energy certification of residential buildings Vadim Livchak, Russia

17:05 – 17:15 Poster presentations

Study on Energy Saving of a Full-Scale Wood-framed house in Harbin Zhaojun Wang, Sumei Zhang, Heming Zhu, Zhang Hou, China

Moisture transport survey Oleg Lebedev, D. Kirzhanov, V. Avramenko, O. Budadin, Russia

Analysis of unstable heat transfer in buildings Jonas Juodvalkis, Egidijus Blazevicius, Ramunas A. Vipartas, Jurate Karbauskaite, Lithuania

The infrared thermal image analysis of temperature field on building outside corner of wall Xiumu Fang, Professor, Yangyang Wang, China

Analysis of theoretical unsafety of changing annual temperature extreme in Poland based on double gauss-distribution model Lixing Ding, Bogdan Mizielinski, Piotr Zietek, Xiaoqing Lu, Poland, China

# May 23, Tuesday

9.00– 18.00 Registration

Foyer 4th flour, Pavilion 7, ZAO EXPOCENTR

10:00 – 12:00 Technical Session S3 Indoor Climate

Co-Chairmen: P. Ole Fanger, Senior Professor, International Centre for Indoor Environment and Energy Technical University of Denmark, Denmark Olli Seppanen, Professor, Helsinki University of Technology, Finland Vladislav Haritonov, Professor, Moscow State Technical University (MSTU), Russia

10:00 – 10:20 Improving human productivity, learning and health by upgrading indoor air quality P. Ole Fanger, Denmark



10:20 – 10:35 Effect of temperature on task performance in office environment Olli Seppanen, William J. Fisk, Qh Lei, Finland

10:35 – 10:50 Reduced energy demand by combining natural and mechanical ventilation in a new office building with an atrium Rasmus Z. Hoseggen, Bjorn Wachenfeldt, Sten O. Hanssen, Norway

10:50 – 11:05 Technical development concerning effectiveness of charcoal and carbonized materials against sick house syndrome Kiyoko Kamada, Takashi Sasaki, Japan

11:05 – 11:20 Results of renovation works in Lithuanian schools buildings: evaluation of energy savings and alterations in indoor environment Lina Seduikyte, Bliudzius Raimondas, Pikutis Rimidijus, Lithuania

11:20 – 11:35 The meaning of efficiency on the requested air flow rate in commercial kitchens Risto Kosonen, Finland

11:35 – 11:50 Verification of natural ventilation technique in cold district Takashi Sasaki, T.Saito, Japan

11:50 – 12:00 Discussion

12:00 – 13:00 Cafe break

13:00 – 15:15 Technical Session S3 Indoor Climate

Co-chairmen:

P. Ole Fanger, Senior Professor, International Centre for Indoor Environment and Energy Technical University of Denmark, Denmark Marianna Brodatch, Professor Moscow Architectural Institute (State Academy), Russia Mihail Tarabanov, General Director of NIC «INVENT», Russia

13:00 – 13:20 Air exchange of buildings with apertures in the envelope protected by air curtains Evgeniy Shilkrot, Russia



13:20 – 13:35 Indoor air fungal contamination in Slovak dwellings vs. outdoor aero-mycoflora Elena Pieckova, Zuzana Pivovarova, Slovakia

13:35 – 13:50 Demand controlled ventilation: conciliating indoor air quality and energy savings Marc Jardinier, France

13:50 – 14:05 Optimizing the building envelope and HVAC systems for an inpatient room by using simulation and optimization tools Vojislav Novakovic, Natasa Djuric, Johnny Holst, Norway

14:05 – 14:20 Individual control of office microenvironment Arsen K. Melikov, Gitte L. Knudsen, Shinichi Watanabe, Denmark

14:20 – 14:35 Optimize effectiveness of UV lamp and filter to increase indoor air quality with C++ Behdad Yazdani, Behzad Yazdani, Peyman Jafariyan, Iran

14:35 – 14:50 Heating systems of football fields Mihail Tarabanov, Vyacheslav Sergeev, Russia

14:50 – 15:00 Poster presentations

Control research on room temperature of high accuracy constant temperature room Fu Yun-Zhun, Xu Zhang, China

Study of Thermal Comfort and Energy Consumption for Supermarket in Harbin Jianing Zhao, Zhaojun Wang, Lixia Wu, Xiumu Fang, China

Natural ventilation in multistory buildings with a "heated attic" Elena Malyavina, Serguey Biryukov, Russia

Verification of natural ventilation technique in cold district Takashi Sasaki, T.Saito, Japan

15:00 – 15:30 Cafe break



#### 15:30 – 18:00 Technical Session S4 New technologies

Co-Chairmen: Michael Schmidt, Professor, Chair for Heating and Air Conditioning University of Stuttgart, Germany Evgeniy Shilkrot, Head of Laboratory of CNIIPromzdanii OJSC, Russia Andris Kreslins, Professor of Riga Technical University, Latvia

15:30 – 15:50 Refurbished buildings – influence of the user behaviour and user acceptance Michael Schmidt, Silke Schmidt, Germany

15:50– 16:05 Chilled beams in heating: design criteria and case study Maija Virta, Risto Kosonen, Finland

16:05 – 16:20 Innovation technologies in heating by JAGA Geert Vyncke, Belgium (Sponsor REHVA GA)

16:20 – 16:35 Enthalpy plate exchangers, a further improvement of indoor comfort Ruedi Kriesi, Switzerland

16:35 – 16:50 Demonstration project of controlled ventilation in dwelling buildings Andris Kreslins, Olita Belindzeva-Korkla, Egis Dzelzltis, Latvia

16:50 – 17:05 New HVAC&R and heat recovery systems in supermarkets Vasile Minea, Canada

17:05 – 17:20 Optimization of the efficiency of a solar assisted heat pump Leonardo Filotico, Francesco Piccininni, Tiziana Scialpi, Italy

17:20 – 17:35 Combined work of air desertification, ventilation and heating systems in industrial building Aleksandr Kotenko, Dusan Petras, Slovakia





#### 17:35 – 17:50

Geothermal heat pump systems of heat supply (GHPS): operating experience, technical and ecological aspects of rational integration into power balance of Russia Grigoriy Vasiljev, Russia

17:50 – 18:00 Poster presentations

Aspects of the thermal storage wall Michal Kabrhel, Karel Kabele, Czech Republic

Technical and economic analysis of deep well water source heat pump system Fu Yun-Zhun, Bao Lin, Xu Zhan, China

New technologies for cooling-brighter prospects for the future Atha ur Rahman Khan, Deepti A. Dutt, India

# May 24, Wednesday

#### 10:00 – 12:05 Technical Session S4 New technologies

**Co-Chairmen: Yoshino Hiroshi**, Professor, Department of Architecture and Building Science, Faculty of *Engineering Tohoku University, Japan* **Alexander Naumov**, General Director of NPO «Termek» OJSC, Russia **Andreas Lucke**, General secretary EHI (Association of the European Heating Industry), Germany

10:00 – 10:20 Experimental study on the control of a hybrid ventilation system in a detached house Yoshino Hiroshi, Sounghun Yun, Motoya Hayashi, Hiromi Yamada, Rie Takaki, Japan

10:20 – 10:35 Solar tower suspires in the wind Thomas Auer, John Munroe, Canada, Germany

10:35 – 10:50 Advantages of Sanyo GHP (gas heat pump) over electric-driven Sanyo multi-system air conditioners for cold-weather regions Alexander Kuznetzov, Alexander Ryaboshapka, Russia (Sponsor of Cold Climate HVAC 2006)

10:50 – 11:05 Designing and operation of HVAC systems of new high rise multipurpose buildings in Moscow Alexander Kolubkov, Sergei Nikitin, Nikolay Shilkin, Russia



11:05 – 11:20 Comfort: the goal of modern civil engineering Ivan Redin, Russia

11:35 – 11:50 Algorithm of the choice of mini cogeneration plant Alexander Naumov, Russia

11:50 – 12:00 Poster presentations

Energy saving of hotel's thermal plants Leonardo Filotico, Francesco Piccininni, Tiziana Scialpi, Italy

The peculiarities of air district and heat exchange in living compartments of manned submersibles Eugeniy Trushliakov, Ukraine

The feasibility analysis of Xinghai sewage-source heat pump station in Dalian Haiyang Bi, Lin Duanmu, China

12:00 – 13:00 Cafe break

#### 13:00 – 15:00 Technical Session S5 Energy efficient buildings

Co-Chairmen:

Yuri Tabunschikov, Professor, Head of Department Moscow State Architectural Academy, Russia Vytautas Stankevicius, Professor, Institute of Architecture and Construction, Kaunas Technology University, Lithuania Grigoriy Vasiljev, General Director of «INSOLAR-INVEST», Russia

13:00 – 13:20 Heat energy minimization in heating up a room Yuri Tabunschikov, Ashot Danielian, Kenneth Van De Velde, Russia, Belgium

13:20 – 13:35 Energy efficiency by using renewable energies for domestic heating in the EU Andreas Lucke, Germany

13:35 – 13:50 Economical standard to support design for energy efficient buildings Bruno Zielger, France





13:50 – 14:05 The development of normative requirements in Lithuania for energy consumption reduction Vytautas Stankevicius, Jurate Karbauskaite, Edmundas Monstvilas, Lithuania

14:05 – 14:20 Supermarkets HVAC in Cold Climates Atma Advani, USA

14:20 – 14:35 Effective control of combined heating, cooling and power systems in an hourly-price electricity market Brian Coffey, Ed Kutrowski, Canada

14:35 – 14:50 Poster presentations

The principles of design of energy efficient buildings Yuri Tabunschikov, Marianna Brodatch, Russia

Efficient geothermal heating and cooling systems for buildings in cold climates Vasile Minea, Canada

Building total energy consumption as the basis of energy Certification Anatolijs Borodinecs, Andris Kreslins, Latvia

Combined heating and ventilating systems for industrial large volume buildings Norbert Repka, Dusan Petras, Slovakia

Combined electric heating system - CEHS Tomas Boldis, Dusan Petras, Slovakia

Wall optimization for energy saving Leonardo Filotico, Francesco Piccininni, Tiziana Scialpi, Italy

Experimental study on the heating load profile of multi-layer residential buildings Xiumu Fang, Weijia Zhang, and Jian Wang, China

Analysis of Direct outdoor air cooling efficiency for combined variable air volume air-conditioning systems in stores in cold climates of China Jianing Zhao, Zhiwen Luo, Jun Guo, China



Analysis of factors influencing on the total efficiency of a solar absorption refrigerating system Yufen Gao, China

14:50 – 15:20 Closing ceremony

## **Closing Speeches**

Welcome to Cold Climate HVAC 2009

15:20 – 15:45 Cafe break

Satellite event

## **REHVA**<sup>\*</sup> workshop at Cold Climate HVAC-congress in Moscow



May 22, 2006 at 13:00-15:00 Room Panorama Hall, 4th floor, Pavilion 7, ZAO Expocentr (the same floor with the conference)

## **Objective**

The objective of this workshop is to present the activities of REHVA\* (Federation of European Heating and Air-conditioning Associations) specifically in the area of Energy Performance Buildings Directive and REHVA Task Forces. The participants are encouraged to participate in REHVA activities and discuss opportunities of future work of REHVA.

### Programme

- 1 Welcome and introduction
- 2 REHVA guidebook on Chilled beam cooling
- 3 REHVA guidebook on Ventilation and smoking
- 4 REHVA guidebook on Indoor climate and productivity
- 5 Energy Performance Buildings Directive (EPBD)
- 6 REHVA activities in the area of EPBD
- 7 Discussion on future activities of REHVA
- 8 Closure

Working language – English

Olli Seppanen, President of REHVA Maija Virta, Halton, Finland Ben Bronsema, Netherlands Olli Seppanen, Finland Peter Novak, Slovenia Olli Seppanen, Finland

\* REHVA (www.rehva.com) has members from 31 European countries representing more than 100 000 experts in the area of heating, ventilation and air-conditioning.



#### Satellite event



# **ABOK**<sup>•</sup> board meeting **"ABOK Standardization"**

May 23, 2006 at 10:00 - 12:30

# Room Panorama Hall, 4th floor, Pavilion 7, ZAO Expocentr (the same floor with the conference)

### **Objective**

The objective of this meeting is to discuss the activities of  $ABOK^*$  specifically in the area of Standardization.

10:00 - 10:20	ABOK Standards in connection with Federal law «On Technical Regulating»	Valerii Tishenko, ABOK
10:20 – 10:50	Experience of development and application of ASHRAE standards	Lee Burgett, ASHRAE
10:50 – 11:20	The review of the set of CEN standards devel- oped to support the implementation of the EPBD in the EU Member States	Olli Seppanen, REHVA
11:20 – 11:50	Experience of development and application of VDI standards	Thomas Terhorst, VDI
11:50 – 12:30	The program of ABOK Standards development Discussion	<b>Yuri Tabunschikov</b> , ABOK

### Program

Working language - russian

#### The participants are encouraged to participate in ABOK activities and discuss opportunities of future work of ABOK.

\* ABOK- Russian Association of Engineers for Heating, Ventilation, Air-Conditioning, Heat Supply and Building Thermal Physics is a non-government public organization, which implements its activity independently and for the purpose of advancing the arts and sciences of heating, ventilation, air-conditioning for the benefit of the general public, positive effect on the environment and natural resources, to protect the interests of future generations. ABOK was founded in 1990.



Satellite event

# IV Conference «Intelligent Buildings: Building Automation and Control Systems»

May 23, 2006 at 13:00 - 15:00

15:30 - 17:30

Room Panorama Hall, 4th floor, Pavilion 7, ZAO Expocentr (the same floor with the conference)

# Standards – Application – Experience – Costs

#### Questions to be discussed:

Building Automation and Control Systems (BACS) optimize the start-up and performance of HVAC equipment and alarm systems. BACS greatly increases the interaction of mechanical subsystems within a building, improve occupant comfort, lower energy use and allow off-site building control. Building Automation Systems (BAS) use computer-based monitoring to coordinate, organize and optimize building control sub-systems such as security, fire/life safety, elevators, etc.

## Common applications include:

equipment scheduling (turning equipment off and on as required);

• optimum start/stop (turning heating and cooling equipment on in advance to ensure the building is at the required temperature during occupancy);

- operator adjustment (accessing operator set-points that tune system to changing conditions);
- monitoring (logging of temperature, energy use, equipment start times, operator logon, etc);
- alarm reporting (notifying the operator of failed equipment, out of limit temperature/pressure conditions or need for maintenance).

#### **Benefits:**

- improves and documents occupant comfort;
- reduces heating, ventilation, and cooling costs through improved sub-system management;
- reduces time required to monitor and manage building operation;
- allows support and diagnostics from remote location.

Working language - russian



# **10th ABOK/EHI International Symposium**

# Modern energy efficient equipment for heat supply, plumbing and climatization in buildings

# May 24, Wednesday

15:45 – 16:00 Opening of the Symposium

# 16:00 – 18:00 Seminar «Innovative technologies of watter supply and waste water in modern buildings»

The basic questions of this forum will be: world tendencies in standardization and tasks of committee «ABOK-watter supply and waste water», technology of energy and resource saving systems. The following questions will be discussed:

- The design and installation of water supply and waste water systems through requirements that emphasize performance.
- Design and installation methods for water supply, sanitary drainage, and storm drainage.
- New and innovative products, materials, and systems.
- Water Treatment.
- International Codes published by the International Code Council (ICC).

# May 25, Thursday

# 10:00 – 14:30 Seminar «Innovative technologies of XXI century for a heat supply and climatization of buildings»

Carrying out of this session became distinctive feature of a symposium. Modern building concepts of buildings of XXI century, the validity and prospects of normative documents on heating and ventilation, last instructions of the European community and their influence on national standards (by the example of Germany), technical novelties of the equipment in the field of a heat supply, heating and cooling will be submitted.

14:30 Closing ceremony



# **General information**

Badges must be worn for admission to the conference and social events.

Official travel agent of Cold Climate HVAC Conference «IntelService Center» (495) 960-13-77

# **Social Events**

#### May 21, Sunday

18:00 – 20:00 Cocktail party (only for the registered participants) Banquet Hall, Ukraina Hotel, 2/1 Kutuzovsky prospect, Moscow

#### May 22, Monday

19:00 – 23:00 Conference banquet in the Prague Restaurant, 2/1 Arbat street (Attendance only by the tickets) (Busses will depart from hotel Ukraina at 18.30)

### SIGHTSEEING FOR THE ACCOMPANING PERSONS

Available by the preliminary booking at Intelservice Busses will depart from hotel Ukraina

Sunday, May 21 14:00 – 17:00 City Tour (3 hours)

Monday, May 22 10:00 – 13:00 The Kremlin (Territory + Cathedrals) combined with Armory (duration 3 hours) 13:00 – 14:00 Lunch at the local restaurant

**Tuesday, May 23 10:00 – 13:00** State Tretyakov Gallery (2 hours) **13:00 – 14:00** Lunch at restaurant **15:00 – 18:00** City tour (3 hours)

#### Wednesday, May 24

10:00 - 13:00 Pushkin Museum of Fine Arts (2 hours)
13:00 - 14:00 Lunch at the local restaurant
23:00 - Departure to St. Petersburg







SHK MOSCOW 2006 (May 22-25) – 10th International Trade Fair for Sanitation, Heating Air-Conditioning, Building Automation

#### Opening ceremony is May 22 at 10:00

SHK MOSCOW – the leading event in its sector for the dialogue between Russia's building technology experts and Western Europe's sanitation, air conditioning, heating and building automation industry and science.

SHK MOSCOW will be the meeting place for all those who attach importance to highquality information about the Russian construction industry and investment projects and are seeking direct contact with the top decision-makers in the industry.

Approximately 300 exhibitors from 20 countries will occupy about 18,000 m<sup>2</sup> exhibition space to present their innovations with respect to space and water heating, pipelines, fittings, refrigeration, airconditioning, sanitary



and environmental engineering. Exhibitors praised the high visitor caliber and attendance figures as well as the event's superior standard of organization.

Participants of the Congress will have a free paths ticket to the Trade Fair SHK MOSCOW. These two events – the conference and the trade Fair – held at the same time and on the same fairground, are determent by requirements of time, and it is very important that the ideology and the topics of the Conference coincide with the wide range of innovative technologies, latest achievements in new engineering equipment presented at the Trade Fair SHK.

# **About ABOK**

Russian Association of Engineers for Heating, Ventilation, Air-Conditioning, Heat Supply and Building Thermal Physics "ABOK" is a public organization, which implements its activity independently and for the purpose of advancing the arts and sciences of heating, ventilation, airconditioning for the benefit of the general public, positive effect on the environment and natural resources, to protect the interests of future generations. ABOK was founded in 1990. ABOK has collective members and individual members. Collective members – 303 organizations in HVAC field: engineering, designing institutes, produces, universities, trading companies, installing and other companies.

ABOK has regional branches in St. Petersburg, Volgograd, Ekaterinburg, Krasnodar, Perm, Rostov-on-Don, Nizhniy Novgorod, Novosibirsk, Ukraina (Odessa).

ABOK publish 3 journals: "ABOK Journal" (Heating, Ventilation, Air Conditioning), – since 1990, 13000 issues 8 times a year, "Energosberezhenie" (Energy saving technologies), is published jointly with the Department for Energy Moscow Government since 1995, 13000 issues 6 times a year, "Santechnika" since 1999, 10000 issues 6 times a year. Journals are distributed to 980 cities of Russia.

ABOK is a member of REHVA since 1990 and associate member of ASHRAE since 1991. ABOK is developing ABOK Standards and Guidebooks.

#### Our stand at SHK MOSCOW 2006: 7-4B08



# **About Moscow**

Moscow, the capital of the Russian Federation, was founded in 1147 by Prince Yuri Dolgoruky as a fortress on the bank of the Moskva River. Within over 850 years of its history, Moscow has developed into one of the largest cities in the world with a territory of almost 100 km<sup>2</sup> and a population of about 9 million. It is the economic, political and cultural centre of Russia, and the seat of the Russian Government. There are many national and foreign companies, as well as educational and cultural institutions in the city.



Moscow is famous for its architectural and cultural monuments of world significance: the Kremlin (15-17th centuries), the former residence of the Russian tzars, is considered to be one of the world's most beautiful architectural achievements; the St. Basil's Cathedral (1551-1561), a masterpiece of Russian architecture, located on the Red Square. Moscow is unique in that it unites architecture of the west and of the east. Moscow is well known for its theatres and museums. The Bolshoy Theatre (1776), one of the leading opera and ballet theatres in the world; the Pushkin Museum of Fine Arts; the Tretyakov Gallery; the Historical Museum; the ancient estate Kolomenskoye (14th century), one of the residences of the Russian princes and tsars; and the Kuskovo estate (18th century) are among the most renowned. The Moscow metro is one of the most beautiful in the world.

Today in Moscow about 4 million m<sup>2</sup> of new residential buildings are under construction annually. Moreover, the governing bodies in Moscow have established a grandiose programme covering the next 10 years for the reconstruction of buildings erected in the past 70-80 years. The construction of highrise buildings has started in Moscow and about 80 such buildings are planned.

Moscow City is currently the largest investment and construction project in Europe, which has been dubbed the "Moscow Manhatten". It is being developed on Krasnopresnenskaya Embankment on a 60 hectare plot of land. The business centre will unite 15 high-rise office, retail and hotel complexes. Thanks to the latest telecommunications systems, Moscow City will become not only a harmonious architectural ensemble, but also a unified integrated informational zone. The construction project can be considered an international one: some of the world's foremost architects specialising in high-rise buildings are contributing. The creative decisions of the architects working on Moscow City draw on worldwide experience in high-rise business centre construction: Battery Park in New York, Canary Warf in London, First Canadian Place in Canada, and La Defence in Paris. Moscow City project surpasses similar projects in terms of volume of construction, architectural innovation, engineering integration and transport infrastructural development.

The month of May, during which the conference is taking place, is the most remarkable season in Moscow. The weather is warm and sunny and the lilac is in blossom.

