



## Interview with the Minister

p. 6

Alexey Vorontsov, a well known architect and government official, took office on the Minister of Architecture and City Planning of the Moscow Regional government in May of 2013. In the interview the minister shares his outlook on the green construction trends, talks about government support and promotion of high technologies, about relates problems and tasks, including preservation of cultural landmarks and environment protection.

## Energy Efficiency Improvement. EU Legislature

p. 10

Reduction of energy consumption in the building industry is one of the main objectives on the European Union's agenda. Achievement of this objective will facilitate creation of competitive and energy independent economy. This objective is closely linked to human impact on the environment and climate changes. In the end of 2006 the European Union took on obligation to reduce energy consumption by 20 % by 2020. The article reviews the main laws regulating issues related to energy efficiency and energy consumption.



## Net Zero Energy Building. FOLD Project

p. 24

Ongun B. Kazanci, Martynas Skrupskelis, Bjarne W. Olesen, Georgi K. Pavlov

The article is dedicated to issues related to use of solar energy and heating, ventilation and air conditioning systems using FOLD project as an example. This project was developed by the students of Danish Technical University within the framework of European «Solar Decathlon 2012» contest. In their project the students have applied innovative technologies using hybrid solar collectors, ground heat exchangers, heat pumps and materials that change their phase state.

## Comparative Analysis of Methods for Calculating Heating Energy Demand for Standard and Energy-Efficient Buildings

p. 36

Alexander Elokhov

Russian methods of calculating heating energy demand for standard buildings does not give the correct results in the analysis of buildings with low energy consumption. Especially for energy-efficient buildings in Germany have developed PHPP program (Passive House Planning Package), which is successfully applied in European countries. PHPP takes into account all the possible factors, which depend up the heat loss and heat gain of buildings that are neglected our regulations.



## Rooftop Wind Generators. Unique Experience of Twelve West

p. 46

By Peter van der Meulen, AIA, and Craig Briscoe

At first sight Twelve West building in Portland attracts our attention by wind generators located on its roof. Visitors, staff and residents of this multifunctional buildings know that this is not the only source of renewable energy in its territory. The building is located near rapidly growing West-End district. It serves as an example demonstrating that environmental sustainable projects can be implemented even in densely developed urban districts.

## LEED and BREEAM Certification of Buildings in Russia p. 58

The subject of buildings' certification in Russia to international green construction standards has been repeatedly discussed on pages of «Sustainable Building Technologies» magazine. In order to understand the differences in certification standards available in Russia, to learn about terms and cost of the process, to understand how local design and construction standards, norms and rules are taken into account, we decided to interview Kseniya Agapova – accredited LEED and BREEAM certification specialist.

## Sochi Ice Skating Rinks: Numerical Simulation Experience pp. 66, 112 Daria Denisikhina, Andrey Kolosnitsin, Maria Lukanina («BUREAU of TECHNICS project»)

The new indoor ice skating rinks were built in Sochi for the Winter Olympic Games 2014. The numerical simulations were carried out for the following projects: The Iceberg Skating Palace, The Shayba Arena and The Bolshoy Ice Dome. The aim of the simulation was to analyze the air distribution solutions. Studies showed that the initial design solutions did not provide the necessary parameters of air temperature near the ice surface. The design requires appropriate adjustments.

## 3D-City: Infrastructure Design and Management p. 72

Geoinformation technologies are becoming more and more popular in design and management on infrastructure of cities, territorially distributed enterprises and facilities. Geoinformation systems (GIS) are already being used in industrial enterprises, electronic maps of cities and even regions are being created.

## Professional Association pp. 76, 108

In column Professional Community you will find the report on 57th General Assembly of Federation of European Heating, Ventilating and Air-conditioning Associations (REHVA), as well as interviews with the industry leaders about the future of construction and new technologies.

## Tetra Pack Factory Reconstruction. Energy Efficiency Improvement Project p. 82

Issues of energy efficiency and energy conservation are of utmost importance today for modern construction, and are closely linked to environmental issues. Russian building industry has a huge potential in energy savings. Insufficient thermal insulation, leaky windows, inefficient heating, ventilation and air conditioning systems pose problems for majority of the buildings. This materials describes how the energy efficiency improvement project is being implemented during reconstruction of Tetra Pack factory.

## Center Network Power Grid Company p. 86 Sergey Ignatov

Optima Group had been completely implemented the main Grid Control Center of MOESK. Grid control of any power company is one of the key strategic processes, which depend uninterrupted supply of electricity to consumers and control of the electric industry. The main point in that process is to consolidate information from multiple sources, which requires the implementation of special software and number of engineering systems.





## Fuel Cells

p. 88

**Marianna Brodach, Nikolay Shilkin**

One of the most efficient and environmentally friendly methods to get electricity is fuel cells. Today fuel cells are used in a wide range of applications – stationary power plants, autonomous building heat and electricity sources, vehicle engines, research is being conducted to use them as power supplies for cell phones and notebooks.

## Natural Smoke Exhaust Hatches and Snow Load

p. 92

Smoke exhaust hatches from «Keraplast» are certified for compliance with Federal law dd. 22.07.2008 No. 123-FZ and state standard GOST R 53301–2009. Certification was performed in Saint-Petersburg branch of FGBU VNIPO of the Ministry of Emergencies of Russia.

## Thermoactive Adaptive Building System

p. 94

**Vladimir Brunko, Aleksey Sorokin**

Thermoactive adaptive building system is a patented technology that transforms the frame of any building type and designation into the main part of a climate control system – controlled heat and cold accumulator.



## Vertical Swimming Pool

p. 96

Unique high-rise residential building Bandra Ohm in Mumbai (India) will be built according to the design prepared by architecture bureau James Law Cybertecture International. The main feature of the project is application of innovative technology that permits construction of swimming pools on the building's floors.

## Trenchless Sanitation

p. 98

Trenchless rehabilitation – a new solution for the repair and modernization of the networks of water supply and sanitation. In contrast to open repair method, this method allows a much quicker and more economical to produce restoration of communications.



## Environmentally Friendly Water Supply Pipeline

p. 100

Stainless steel deserves its status of one of the most reliable, environmentally friendly and long lasting materials for pipeline systems. New press technology with stainless steel pipes allows for replacement of water supply systems without welding or threaded connections.

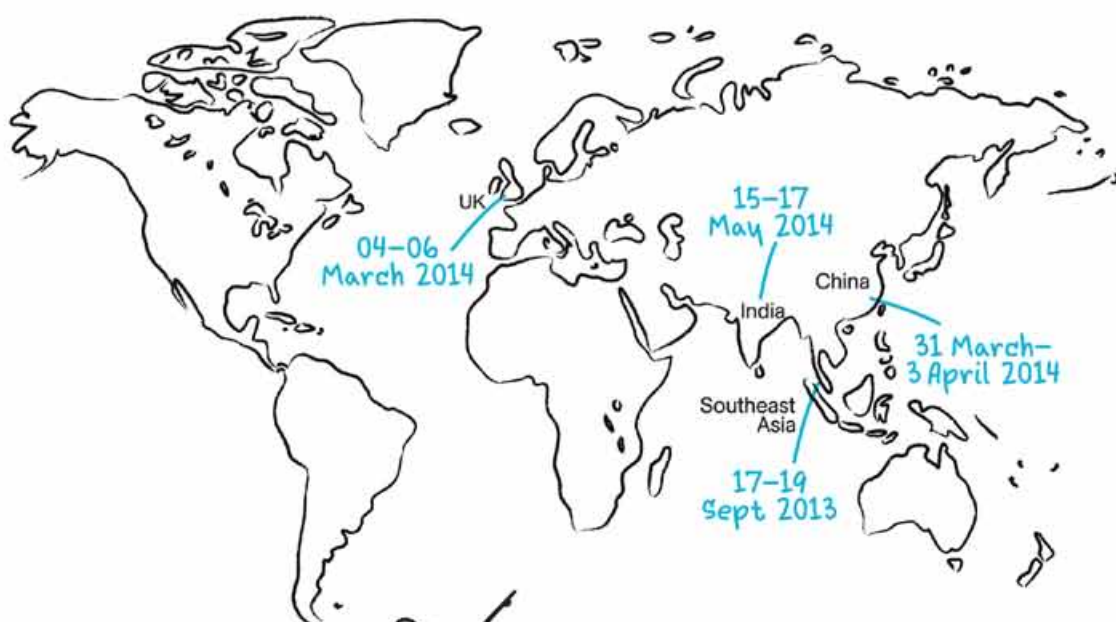
## Book Review

p. 102

New recommendations R NP ABOK 4.4–2013 «Floor water heating and cooling systems for residential, public and industrial buildings» and 7.6–2013 «Definition of parameters of lengthwise automotive tunnel ventilation systems», dedicated to design of lengthwise ventilation systems for automotive tunnels using blast fans, were published. Published books «Basics of the modern construction thermography» by I.L. Shubin, and «BACnet Buildings Automation 1.12» by Hans R. Kranz.



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