

Cities on power

Boosting Green Energy in Urban Areas

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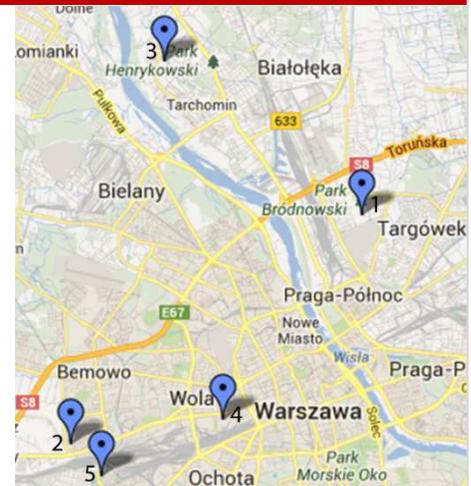
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Monitoring Indoor Conditions in Warsaw Buildings

In the framework of the Cities on Power project, indoor air parameters, power and heat consumption, and outdoor conditions were measured and recorded in selected public buildings. Based on data for the whole year, a study concerning potential renewable energy sources application in the following buildings was performed:

- Rehabilitation pool complex “Muszelka,” Balkonowa St. 2/4 (No. 1 on the map)
- Welfare centre “Kombatant,” Sternicza St. 125 (No. 2)
- Białołęcki Sports Centre gymnasium, Strumykowa St. 21 (No. 3)
- Pavilion No. 1 in Wolski Hospital, Kasprzaka St. 17 (No. 4)
- Nursery No. 29, Nike St. 6 (No. 5)



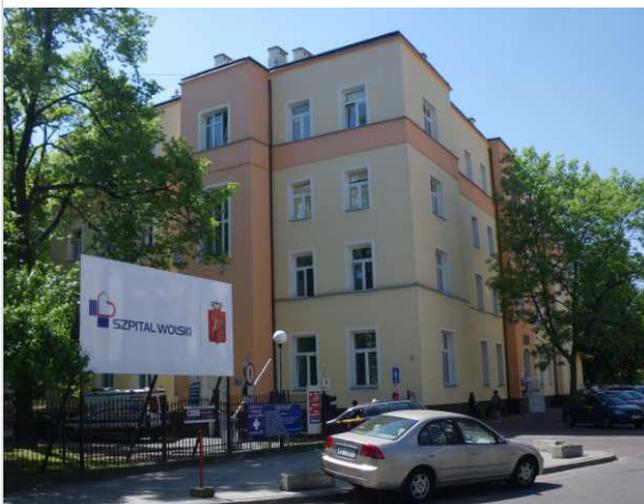
The main objective of the measurements was to identify and analyse key information related to efficient energy use. The measurements were carried out not only with the purpose of reducing the energy demand, but also to improve thermal comfort, indoor air quality and the functionality of the buildings.

In each of the selected buildings indoor air parameters (temperature, humidity, CO₂ concentration), parameters of air in the ventilation unit, power and heat consumption, and in parallel, outdoor conditions were recorded (temperature, humidity, CO₂ concentration, wind speed, solar radiation).

The monitoring lasted 12 months.

The measured data and analysis allow to conclude that in the buildings in question there are no major problems with meeting the requirements concerning thermal comfort. Except for some rooms in Nursery No. 29, but renovation works in the building should start in 2013 and result in improved conditions. Also in the gym in Białołęcki Sports Centre, in the summer the humidity reaches 17 g/kg.

The results of the measurements also show that there is no risk of development of filamentous fungi in the four analysed objects. In the fifth - in Pavilion No. 1 in Wolski Hospital such a threat can appear in the basement, not because of improper ventilation or heating systems, but due to other factors, like ground water absorption.



Conclusions Concerning RES in Typical Public Buildings

In the typical public buildings being analysed, up to 20% of power demand can be covered by photovoltaic panels. In the areas belonging to the Warsaw district heating network, the buildings are supplied with heat produced in cogeneration, so the application of solar collectors and ground source heat pumps is not feasible both from the environmental and economic point of view.

Solar collectors can be a good solution in public buildings with local heat sources, not connected to the district heating grid. The same goes for ground source heat pumps, if there is enough space for it and the conditions allow for their installation.

The Białołęcki Sports Centre gymnasium, Strumykowa St. 21, is supplied with heat from the gas grid. For this building, a criterion for the selection of solar collectors may be a requirement to cover the entire demand for domestic hot water in the summer months, so that it would not be necessary to operate the gas boiler during this time. The gas boiler does not operate with nominal performance in the summer, because the load is smaller.

Wind power is not an alternative due to urban surroundings of the buildings.

Warsaw Rewarded for Eco-buildings

The City of Warsaw has recently been rewarded for ecological buildings and sustainable mobility in “Eco-Cities” competition organized by the French Embassy. The city authorities implement the objectives set by the Covenant of Mayors and included in the Local Action Plan for the Sustainable Energy Use in Warsaw until the Year 2020.

The City of Warsaw also received a reward in a competition organized by the Federation of Polish Cities for the project “Monitoring Energy Use and Costs in Schools in the City of Warsaw.”

Another award for the City of Warsaw has been granted for being the most energy-efficient municipality in Poland.

Guide for Energy Conservation in Buildings in the Province of Ravenna

The Guide is one of the initiatives in the Local Action Plan of the province of Ravenna. It explains how to improve energy performance of buildings, saving money at the same time. Thanks to the 5 chapter organisation and direct language you can obtain all the information about available technologies, energy consumption, subsidies and more.

The “Energy-saving guidelines for buildings” can be downloaded from the website www.citiesonpower.eu or directly [here](#).

European Week of Regions and Cities

The European Week of Regions and Cities (OPEN DAYS), the annual key event for regional and local authorities, organised by the EU Committee of the Regions and the European Commission and DG REGIO took place 7-10th October in Brussels. It was the 11th edition of this event.

The Cities on Power project was presented there by the Province of Turin, participating in the seminar that focused on how Cohesion Policy after 2014 could better contribute to local innovative and smart city strategies in order to generate more opportunities for companies and citizens, fostering growth and cohesion.

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