

## ENERGY EFFICENEY IN MEDICAL BUILDINGS AND HOSPITALS

By

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Editor of International Journal Energy and Buildings

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**Thursday, 2 April 2009**

**3.00 pm – 4.30 pm**

**Lecture Room 424 (SDE3, Level 4)**

### Abstract

Energy Efficiency in Medical Buildings and Hospitals

Hospitals are occupied 24 hours per day, all year round. They usually consist of large buildings in which a high level of indoor air quality is obligatory. In hospitals there is a large amount of internal heat load, which combined with a good insulation minimize necessary energy for heating, but in hot climates that increases needs for cooling. Hospitals require standby generators to ensure supply of power in emergency, which is a specific characteristic of these buildings. They are designed for long period use, but in practice, hospitals are used much longer then it was maybe planned for. Concerning energy requirements and efficiency, there has to be distinguished new hospitals and those built much before the present energy situation. New buildings can be designed and erected based on new requirement of latest standards and architectural features adopted for new apparatus and medical technology. The old hospitals are usually retrofitted many times. This is motivated by new and better technical equipment, the need to fulfill new regulations that were subsequently introduced as well as the availability of new energy saving technologies. And of course, the ageing of building, is

another consideration. But the main reason is that the prices of energy are rapidly increasing and energy costs were increasing and will increase even more. Having these economic reasons, as well as protection of environment, global warming, sustainability and green building aspect, it is critical that energy consumption should be reduced, especially where non renewable resources are used.

### Speakers' Profile

Branislav Todorovic is professor of mechanical engineering at University of Belgrade in Serbia, teaching Heating Systems and Air Conditioning. He was visiting professor at Universities in Austria, at University Berkley and Kansas in USA.

Todorović has over 260 titles, of which 152 are the papers published in journals, monographs and various editions, 32 scientific and investigation projects, 72 expert and design projects. He is also author of 15 editions of HVAC books. His papers have been cited over 130 times in foreign journals and books. Professor Todorović is a member of the Russian Academy of Architectural and Building Sciences, honorary member of the Hungarian Society for Building's Science, honorary member of the Russian Society for Heating and Air Conditioning AVOK, fellow of the American Society for Heating, Refrigerating and Air-conditioning ASHRAE. He was vice-president of the European Society for Heating and Air Conditioning REHVA and it's president. In the International Institute of Refrigeration IIR in Paris, he was three times elected as Vice-president of the Executive Committee; He is editor of the international journal Energy Building, published by Elsevier and of Serbian journal for Heating, Refrigeration and Air Conditioning. He was president of the World Congress CLIMA 2000, in 1989. Todorovic is the president of the Serbian Society for Heating, Refrigerating and Air Conditioning KGH, honorary member of the Serbian Society of Engineers. He obtained the City of Belgrade Award for science and the ASHRAE award for the best paper; he is at the list of ASHRAE distinguished lecturers and received its award for his international contribution. He

was also member of ASHRAE board of directors. He obtained the Greek award for contributing to HVAC engineering in 2000. The American award of merit for achievement in teaching in HVAC&R he received in 2002, and in the same year the gold medal as the highest award of the Serbian Society of Mechanical and Electrical Engineers. In 2005 Todorovic was awarded with a golden medal, the highest award of European Society REHVA, in 2008 he got by Russian HVAC Society gold medal named by Russian scientist professor Bogoslovski. He is one of founders and Editor-in-chief of the Serbian journal for Heating, Refrigerating and Air Conditioning. He is Director of a national program for energy efficiency in buildings sponsored Serbian Ministry for Science, and is the president of traditional congresses on heating, refrigerating and air-conditioning, which have been organized in Belgrade each year since 1970. He is on the international ASHRAE list of distinguished lecturers, and as such presented lectures in France, Singapore, Hong Kong, Pakistan, China. He was in Ph.D. commissions in Australia, USA, Hong Kong, France and now in India.

**Registration Details:** To register or make enquiries, please email Ms Soh Xiang Jun at [bdgv20@nus.edu.sg](mailto:bdgv20@nus.edu.sg)

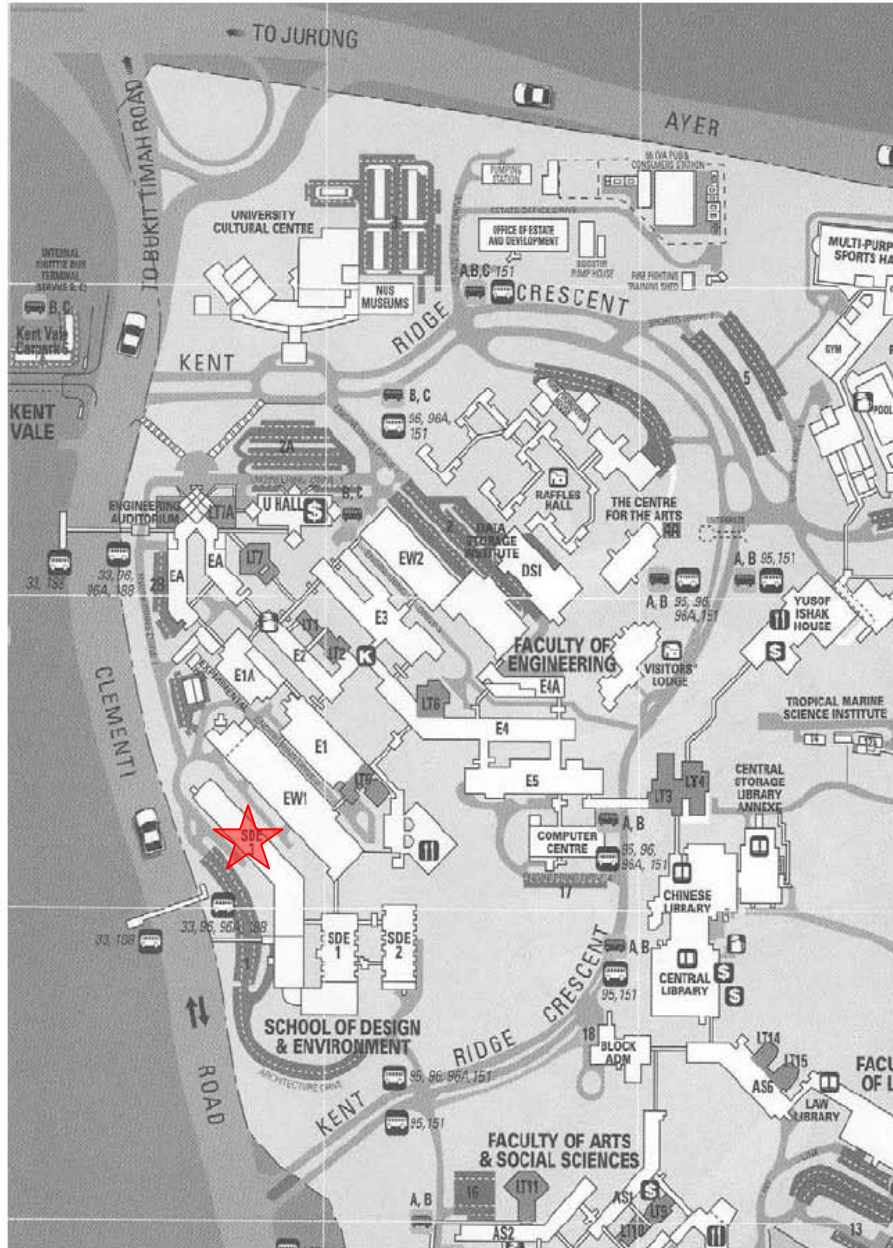
Kindly provide us the following details when registering:

1. Attendee Name
2. Designation
3. Company's Name
4. Telephone No.
5. Email ID

Closing Date for registration: **Monday, 30 March 2009.**

**Admission is free and all are welcome**

## LOCATION MAP



### Taking the Public Transport

Along Clementi Road: Bus nos. 33, 96\*, 188

Along Kent Ridge Crescent: Bus nos. 95, 96\*, 151  
(\*96 may be boarded at Clementi Interchange, next to Clementi MRT station)

Campus map: <http://www.nus.edu.sg/campusmap/>

### Parking in NUS

Motorists can choose to park FREE-of-charge at 2 fringe car parks, i.e. **Kent Vale Car Park 6** and the **CRISP Car Park** (Car Park 10A) at Kent Ridge Road next to King Edward VII Hall. They can take the **Internal Shuttle Bus (ISB) Service** from there to various campus locations. Visitors and students may park their vehicles in WHITE-coloured lots at the pay car parks at the rate of 1.5 cents per minute. All RED-coloured parking lots are strictly reserved for staff holding the appropriate NUS season passes. A ticketless, licence plate recognition technology system is in operation at all pay car parks. Payment is by CashCard only.