



ASHRAE ASHRAE SINGAPORE CHAPTER

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. SINGAPORE CHAPTER



Mailing Address: Bukit Merah Central, P.O. Box 0626, Singapore 911535

ASHRAE Distinguished Lecturer Talk

Co-sponsored by
Department of Building, National University of Singapore

Presented by

PROFESSOR BJARNE W. OLESEN

**Director, International Centre for Indoor Environment and Energy
Technical University of Denmark**

Topics : 1) **INTERNATIONAL STANDARDS FOR THE INDOOR ENVIRONMENT**
2) **THE EUROPEAN ENERGY PERFORMANCE OF BUILDINGS DIRECTIVE (EPBD)**

Date : 17 March 2006 (Friday)

Time : 7.00 pm to 10.00 pm

Venue : LR425, Level 4, SDE3

Address : School of Design and Environment, National University of Singapore,
4 Architecture Drive, Singapore 117566, Tel: 65165150

Contact : Ms Chelvi, email: bdgtp@nus.edu.sg

Fees :

1) Registered ASHRAE Singapore Chapter members 2) Staff members of Department of Building, NUS	Free of charge
Other Guests	\$15.00

PROGRAMME	
Registration	6.45 – 7.15 pm (Venue : Registration area outside LR425)
Buffet dinner	7.15 – 8.00 pm
Technical Talk	8.00 – 10.00 pm (Presentation : 1 hr 30 mins; Q&A : 30 mins)

Application has been made to the Professional Engineers Board for PDU points

- i) The organiser reserves the right to cancel or postpone the event due to unforeseen circumstances.
- ii) The fee per participant is inclusive of GST. No refunds will be provided, but substitutions are allowed if the seminar organiser is informed by 15 March 2006.

ABSTRACTS

INTERNATIONAL STANDARDS FOR THE INDOOR ENVIRONMENT - WHERE ARE WE AND DO THEY APPLY WORLDWIDE?

On the international level ISO (International Organization for Standardization, ISO EN 7730), CEN (European Committee for Standardization, prEN15251, EN13779) and ASHRAE (American Society of Heating, Refrigerating and Air Conditioning Engineers) are writing standards related to the indoor environment. This presentation will focus on the development of standards for the indoor thermal environment and indoor air quality. In the future, recommendations for acceptable indoor environments will be specified as classes. This allows for national differences in the requirements and also for designing buildings for different quality levels. This will require a better dialogue between the client (builder, owner) and the designer. It is also being discussed how people can adapt to accept higher indoor temperatures during summer in naturally ventilated (free running) buildings. Several of these standards have been developed mainly by experts from Europe, North America and Japan, thus guaranteeing a worldwide basis. Are there, however, special considerations related to other parts of the world (lifestyle, outdoor climate, and economy), which are not dealt with in these standards and which will require revision? Critical issues such as adaptation, effect of increased air velocity, humidity, type of indoor pollutant sources etc. are still being discussed, but in general these standards can be used worldwide. It is nevertheless important to take into account people's clothing related to regional traditions and season.

THE EUROPEAN ENERGY PERFORMANCE OF BUILDINGS DIRECTIVE (EPBD)

From the beginning of 2006 all new European buildings (residential, commercial, industrial etc.) must have an energy declaration based on the calculated energy performance of the building, including heating, ventilating, cooling and lighting systems. This energy declaration must refer to the primary energy or CO₂ emissions. The directive also states that the energy performance calculation must take into account the indoor climate, but gives no guidelines. The European Organisation for Standardization (CEN) is now preparing a series of standards to cover the requirements for the indoor environment, energy performance calculations for buildings and systems, ways of expressing energy performance, inspection of heating-cooling-ventilation systems and conversion to primary energy. This paper presents the EPBD and related standardisation. It also gives the status of the on-going implementation of the directive and discusses the issues related to the indoor and outdoor environment.

SPEAKER'S PROFILE

Professor, Ph.D. Director: International Centre for Indoor Environment and Energy, Technical University of Denmark, Department of Mechanical Engineering, Nils Koppels Allé, DTU, Building 402, DK-2800 Kgs. Lyngby, Tel: +45-45254117, Fax: +45-45932166, e-mail: bwo@mek.dtu.dk

Dr. Bjarne W. Olesen's CV

Master's degree in civil engineering, 1972. Ph.D., Laboratory of Heating and Air Conditioning, Technical University of Denmark, 1975. In the period 1972-1990 Research scientist at the Laboratory of Heating and Air Conditioning, Part time affiliated as product manager at Brüel & Kjaer 1978-1992. Senior Research Scientist, College of Architecture, Virginia Tech. in the period 1992-1993. Since 1993 until January 2004 Head of Research & Development at Wirsbo-VELTA GmbH KG & Co., Norderstedt, Germany. Since January 2004 full professor in Indoor Environment & Energy at the Technical University of Denmark and director of the International Center for Indoor Environment and Energy, Technical University of Denmark. Awarded the Ralph Nevins Award (1982), Distinguish Service Award (1997), Fellow Award (2001) and he will receive the Exceptional Service Award at the 2006 Annual Meeting. He is incoming board member (DAL) of ASHRAE. Chair of CEN TC228 "Heating systems in Buildings" and convener of ISO TC159/SC5/WG1 "Ergonomics of the thermal environment", CEN TC156/WG12, Ventilation of Buildings - Indoor Environment. Is active in several other ASHRAE-CEN-ISO-DIN

standard committees regarding indoor environment and energy performance of HVAC systems. Has published more than 250 papers.

As there are limited places, please register early for the seminar by completing the form below and faxing it to Ms Chelvi at **6775 5502** / email to bdgtp@nus.edu.sg by **13 March 2006**.

For further enquiries, please call **Chelvi**, tel: **6516 5150**.

Yes, I will be attending this **ASHRAE DL Talk** on:

- 1) INTERNATIONAL STANDARDS FOR THE INDOOR ENVIRONMENT**
- 2) THE EUROPEAN ENERGY PERFORMANCE OF BUILDINGS DIRECTIVE (EPBD)**

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Other Guests (Cheque payable to "National University of Singapore")	\$15.00

Title: Prof / Dr / Mr / Mdm / Ms

Name: _____ Designation: _____

Company: _____

ASHRAE Singapore Chapter member : Yes/No (Membership No: _____)

ASHRAE Member : Yes/No (Membership No: _____)

Address: _____

Tel: _____ Fax: _____ E-mail: _____

I will be accompanied by the following guests:

1. Name: _____ Designation: _____

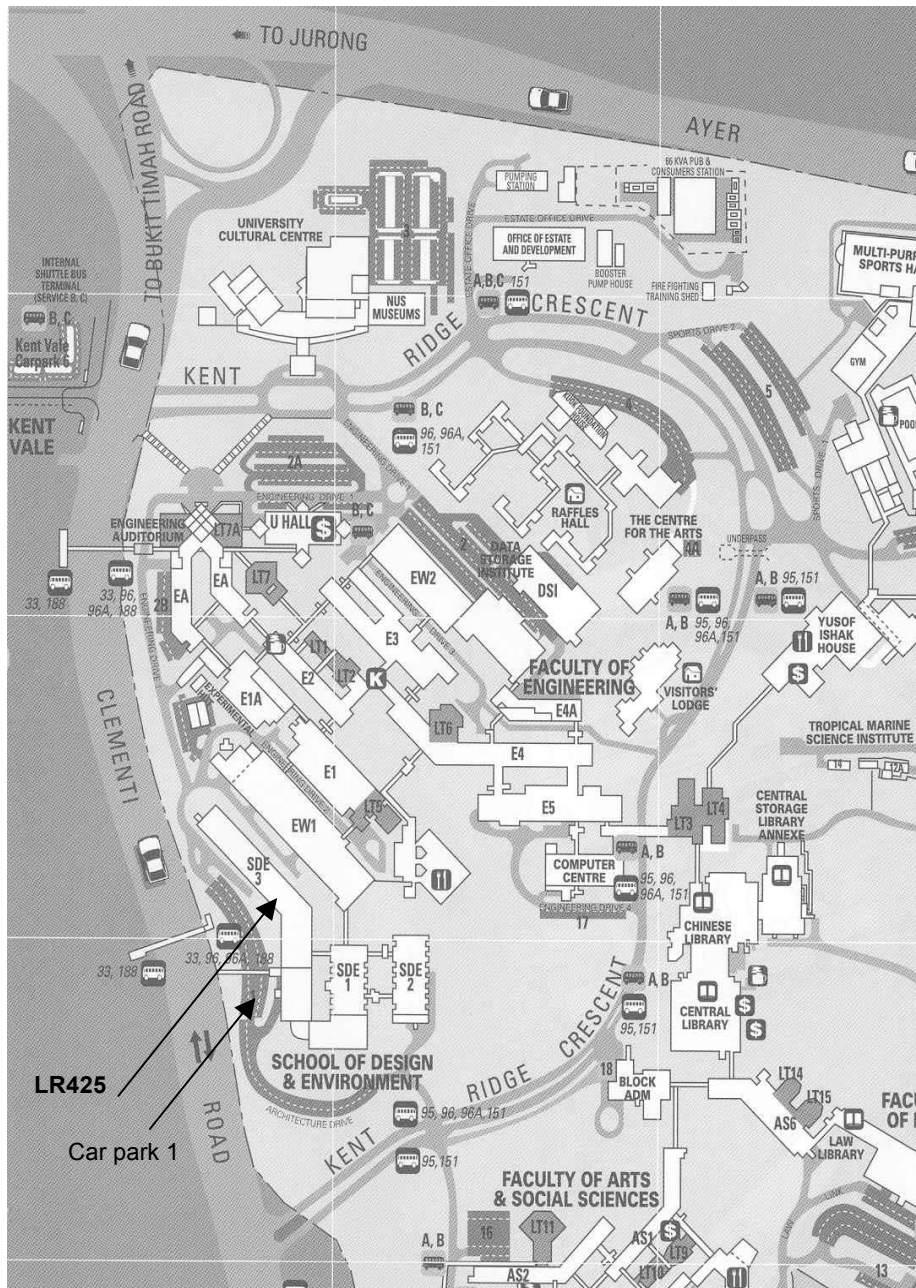
Company/Institution: _____ Tel: _____ Member: Yes/No

2. Name: _____ Designation: _____

Company/Institution: _____ Tel: _____ Member: Yes/No



LOCATION MAP



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.