



Scuola

Cultura e Tecnica per Energia Uomo e Ambiente

In cooperation with



Supported by



ADVANCED AICARR-ASHRAE COURSE

**SMOKE CONTROL BY PRESSURIZATION.  
FROM DESIGN TO COMMISSIONING****Milan, October 30th, 2012, 10 a.m.****AiCARR Headquarters - Via Melchiorre Gioia 168**

In case of fire and smoke, toxic and irritant gases endanger the safety of the people present inside a building. **Heat** is the immediate danger for those who are in the close proximity of the point where the event originated; **smoke** and combustion gases threaten the safety of persons in more distant areas.

Smoke, in particular, is dangerous in two ways. **Exposure to toxic gases** can disable any reaction in a short time, so that the ability to escape is compromised or completely impeded. Furthermore, smoke reduces **visibility**, thus preventing identification and reach of escape routes, and a dangerous decrease of exit speed.

A **smoke control system** can be of great help to keep escape routes effective, to facilitate rescue team action and to limit fire propagation. In this way overall security level of the building is increased, and some structural deficiencies, such as, for instance, the excessive length of escape routes, can be compensated.

For the professionals engaged in fire prevention and fighting, it is a period of great activity. Italian Standards UNI 9494-1 and 9494-2, the first of a series dedicated to Smoke and Heat control systems, have just been published, and will be the first fundamental references on the subject in Italy.

AICARR intends to contribute to the growth of a sector so important for risk prevention and people safety. In this perspective it offers the professionals an unrepeatable **opportunity for confrontation and growth**: a one-day course held by one of the foremost international experts on the subject, **John H. Klote**, co-author of the recent "Handbook of Smoke Control Engineering", published by ASHRAE, a fundamental textbook for anybody involved in smoke and heat management systems.

Mr. Klote will be **in Milan on October 30th**, as an expert presenter for a day of professional development, during which both the design and the equally important commissioning aspects will be examined. The main features of the free CONTAM software developed by NIST for smoke control design systems will also be presented.

**John H. Klote**  
*Ph.D., P.E.*

After twenty years of research in the field of smoke and heat management at the U.S. National Institute of Standards and Technology (NIST) of Gaithersburg (Maryland), Klote sets up a consultancy firm specialized in fire prevention. At the moment he is mainly active in teaching at ASHRAE and SFPE Courses and Seminars. Has published many articles, papers and authored reference textbooks (*Principles of Smoke Management*, ASHRAE 2002, upgr. 2009), among which the recent *Handbook of Smoke Control Engineering* (ASHRAE 2012). He is a Fellow of ASHRAE and SEPE.

Please register **online** at [www.aicarr.org](http://www.aicarr.org), **not later than October 22nd** (no entries will be accepted on site)  
Seats will be assigned according to registration priority.

#### REGISTRATION FEES

- Early Bird—Through September 30th  
AICARR MEMBER  
€ 300,00 + IVA 21%  
NON MEMBER  
€ 430,00 + IVA 21%
- October 1<sup>st</sup> to 22nd  
AICARR MEMBER  
€ 380,00 + IVA 21%  
NON MEMBER  
€ 510,00 + IVA 21%

Registration fees include: workshop paper, Italian consecutive translation, certificate of attendance, coffee breaks and lunch.

Registration fees are to be paid in Euro either via credit card online or via bank transfer (not later than October 22nd) to the current account indicated in the email you receive to confirm your registration.

Please do not forget to indicate your name and course ID transfer order.

The reduced registration fee has to be paid until September 30, 2012 – otherwise the fee will be raised to the higher registration fee without notice.

For conditions of cancellation and any other information, please check [www.aicarr.org](http://www.aicarr.org) (italian)

#### AiCARR CONTACT

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#### CONTENT

The main mechanisms of smoke pressurization are: compartmentation, dilution, pressurization, air flow and smoke buoyancy. The course shall be centered on the following systems of smoke control:

1. Stairwell pressurization
2. Elevator shaft pressurization
3. Area smoke control.

After an overview on the fundamentals of design for such systems, the base concepts of design minimum and maximum pressure shall be illustrated.

The analysis methods consist in algebraic equations and zoned numerical modeling. In particular, stairwell pressurization shall be analyzed with algebraic equations.

Thereafter the features of the resistance (or multizone) CONTAM model shall be analyzed. This software, developed in the USA by NIST (National Institute of Standards and Technology in Gaithersburg (Maryland)), is distributed free.

The commissioning of smoke control systems and the analysis of measurements made shall be presented in detail.

At the end some actual cases drawn from the presenter's professional experience shall be examined.

As this is an advanced course, base knowledge of design of smoke control systems by the attendees is assumed,

The presentation shall be in English with a consecutive summary in Italian.

#### ATTENDEES

The course is addressed to designers, technical personnel of system component manufacturers, contractors, maintenance engineers and in general to those with expert knowledge of fire prevention systems.

#### TIMETABLE

- 9.30 Registration of participants and distribution of course documentation
- 10.00 Welcome address and course presentation
- 10.15 Lesson
- 11.30 *Coffee break*
- 11.45 Lesson
- 13.00 *Lunch break*
- 14.15 Lesson
- 15.30 *Coffee break*
- 15.45 Lesson
- 17.00 Q&A
- 17.30 Conclusion of course and distribution of attendance certificates

#### BIBLIOGRAPHY

*Handbook of Smoke Control Engineering*

J. H. Klote, J. A. Milke, P. G. Turnbull, A. Kashef, M. J. Ferreira  
ASHRAE 2012 - 512 pp.

Participants will have the opportunity to buy the book at a discounted price by ordering it **not later than Oct 10th** and picking it up at the venue without paying delivery costs.