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 9494m1 and 9494m2, 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.
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. Klotz, J. A. Milke, P. G. Turnbull, A. Kashef, M. J. Ferreira

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.