

AIR

AIR INFORMATION REVIEW

Vol 23, No. 1, December 2001

A quarterly newsletter from the IEA Air Infiltration and Ventilation Centre

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Even More Information About AIR!

This new issue of AIR and the AIVC CD provides you once more with relevant and selected information about energy efficient ventilation.

You will probably appreciate the two new technical notes from the AIVC (TN 52 and TN 53), which appear in full text on the CD.

The first one deals with acoustics and ventilation while the second one deals with occupant impact on ventilation. Two other new ones: "Residential passive ventilation systems" and "A review of international ventilation, air tightness, thermal insulation and indoor air quality criteria" will be published in the next issue of AIR.

AIR and the AIVC CD are also offering to you a total of 56 AIVC publications (technical notes, annotated bibliographies, guides, conference proceedings), as well as a number of informative literature lists. These documents, available on the CD, represent the AIVC's output since its inauguration in 1979!

The AIVC database, AIRBASE, is now available in full on the CD, with a new improved interface. It contains references and abstracts of some 14 000 publications about ventilation, with a very efficient search system that will help you to find the appropriate literature sources.

Other information covers various aspects of ventilation via websites, organisations, software, research projects, standards, regulations, new publications, meetings and conferences, etc. In particular, see the full text of the proceedings of the AIVC 2000 Conference on the CD.

The 23rd AIVC Conference will be held in conjunction with the 3rd EPIC Conference (Energy Performance and Indoor Climate) from 23rd to 26th October 2002 in Lyon (France). You will find detailed information in AIR and on the CD about this EPIC 2002 AIVC Conference. Add the date to your 2002 diary now!

We wish you a happy new year !

François Durier, Scientific Manager of CETIAT, Member of INIVE

**56 AIVC PUBLICATIONS AND THE FULL VERSION OF AIRBASE
IN THIS ISSUE OF THE AIVC CD**

AIR

AIR INFORMATION REVIEW

The newsletter of the AIVC, the Air Infiltration and Ventilation Centre. This newsletter reports on air infiltration and ventilation related aspects of buildings, paying particular attention to energy issues. An important role of the AIVC and of this newsletter and CD is to encourage and increase information exchange among ventilation researchers and practitioners worldwide.

Published by:

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Contributors to this edition

Contributions to AIR: Suggestions for contributions are welcomed.

Subscriptions

(See also the subscription form on page 15 or on the CD)

The subscription is for 4 issues of the newsletter, with accompanying CD, per year in March, June, September and December

1) AIVC Member Countries with INIVE Member:

Belgium, France, Greece, Norway
Please contact an INIVE member in your country (See p 16) for preferential rates.

2) AIVC Member Countries without INIVE Member:

Netherlands, USA
200 EURO/year (renewals at 100 EURO)

3) Non-AIVC Countries

(Check www.aivc.org to see an up to date status for your country)
400 EURO/year (renewals at 200 EURO)

4) A free version of AIR without any links is available at www.aivc.org

Discounts are given for multiple subscriptions - see page 15.

GUIDE TO THE NEWSLETTER

Throughout the newsletter you will see [websites](#) and [email contacts](#). A jump to the AIVC CD is shown with . Simply click to jump to your the CD, to your chosen website, or to send an email. For an overview of the contents of the CD click here .

WEBSITE INFORMATION

IBPSA : the International Building Performance Simulation Association

IBPSA is a non-profit society of building performance simulation researchers, developers and practitioners, dedicated to improving the built environment.

IBPSA is an international organization with regional affiliate organizations around the world.

Building Simulation offers the potential to cope adequately with building performance related concerns, as well as with the construction process. Increasingly, computer based models (programs) are being employed to aid in the design, operation, or management decision making process. The development, evaluation, use in practice and standardization of the models and programs is therefore of growing importance. There is also an urgent need for the integration of "generally applicable" and "generally accepted" methods and tools, for various applications, each having various levels of complexity and/or various types of end-users. Also important is the technology transfer issue within the building modeling field.

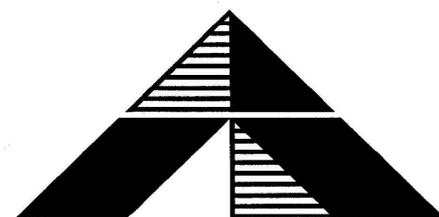
To take a leading role in the promotion and development of building simulation technology, IBPSA aims to provide a forum for researchers, developers and practitioners to review building model developments, facilitate evaluation, encourage the use of software programs, address standardization, accelerate integration and technology transfer. So that, one day:

- members will find membership in IBPSA worthwhile and profitable in their area of interest;
- governments, industry, utilities and academic institutions will look to IBPSA for guidance in determining policies, areas of research, and application development in building simulation;
- local chapters will benefit from the body of knowledge and experience available through IBPSA;
- IBPSA will act as a clearing house for software products and services in building simulation; members will network with other members and societies through electronic means;
- IBPSA will provide a framework for strategic alliances for information and cooperation in R&D and Technology Transfer.

To read on the CD : two issues of IBPSA Newsletter Vol 10, No 1 and Vol 11, No 1

Web: <http://www.ibpsa.org>

ENBRI : European Network of Building Research Institutes



ENBRI was founded in 1988. At present, it includes the principal building research institutes of Member States of the European Union and of the European Economic Area. In 2000 its membership has been extended to include some EU Associated Members.

The objectives of the network are amongst others:

- Promoting Networking between the members and other bodies;



- Combining the technical and information-related skills and resources of the individual institutes in a network of building research facilities and information sources.
- Co-operating in advising the European Commission, companies, consultants, users and clients of the building industry throughout Europe. ENBRI's advice covers all technical aspects of building materials, components, systems and services.
- Sharing the resources of Members' outstanding test and research facilities to offer a large range of services to companies, consultants, users and clients of the building industry.
- Encourage information exchange between Members and collaboration in common research projects.
- Co-operate through the European Economic Interest Grouping "ENBRI Development" in developing and executing special testing programmes and research and development programmes.

As a founding and active member of ECCREDI (<http://www.eccredi.org>), ENBRI provides assistance to ECCREDI in the preparation of consensus views and submission of policy papers and contributions to Commission reports and EC Communications.

ENBRI was among the initiators of the EC funded Thematic Network TRA EFCT "Targeted Research Action on Environmentally Friendly Construction Technologies" (<http://www.tra-efct.com>) and the strategic thematic Network E-CORE, European Construction Research Network (<http://www.e-core.org>).

Co-ordination of activities in specific fields are dealt with in various working groups or task groups, such as EC RTD Co-ordinators and Prenormative Research, Environmental Issues, DICSIT - Dissemination of Information in the Construction Sector and Information Technology

ENBRI publishes a quarterly Newsletter "Construction Technology in Europe" and various workshop proceedings.

Contact  and members : See information on AIVC CD

Or see the ENBRI website at <http://www.enbri.org>

SOLVENT : a European Project on Solar and Passive Ventilation

In the framework of the SOLVENT project, work was carried out to develop strategies and dissemination material to assist the efficient

application of solar and passive ventilation in urban buildings.

The information gathered during the project is synthesised in a website designed for the 'informed' architect and also useful to HVAC engineers in their discussions with their clients.

It includes information on the effect of urban environment on buildings, outlines the principles of solar and passive ventilation and how these could be adapted for application in urban buildings, describes design solutions in the form of case-study buildings and design components and reviews how current regulations encourage/restrict the application of solar and passive ventilation in urban buildings.

Web : www.brunel.ac.uk/research/solvent/home.htm

Project of a Rehva Guidebook on Displacement Ventilation

REHVA (the Federation of European Heating and Air-Conditioning Associations) has decided to work out a design guidebook on displacement ventilation in non-industrial premises. The Guidebook has been prepared by a Working Group from Rehva and reviewed by several Rehva members. It has been presented at a workshop at the conference Clima 2000 in Napoli in September 2001 and will be published soon.

For more details, see Rehva web site : www.rehva.com/html/projects/displacement.htm

Building-Related Heat Pump Projects of the IEA Heat Pump Centre

The IEA Heat Pump Centre (HPC) is the international forum for the exchange of information and knowledge and the stimulation of international co-operation on heat pumps.

The HPC focuses on heat pumps, but the scope of work includes the related technologies air conditioning and refrigeration. The main activities are information service and knowledge transfer.

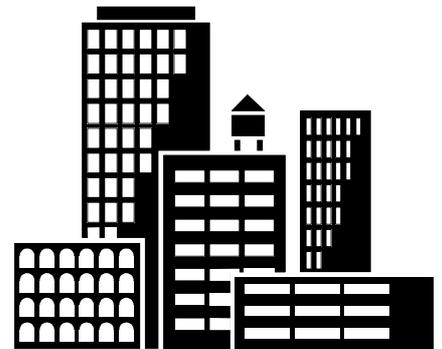
Participants in the HPC are all countries collaborating under the IEA Heat Pump Programme.

The HPC is based in Sittard, the Netherlands and is operated by the Netherlands Organisation for Energy and the Environment (Novem).

The HPC is currently conducting a number of studies that are relevant for architects, building installation designers and project developers. Recent publications relate to heat pumps for buildings (see Bookshop).

Several project results are available on the Heat Pump Centre website. Surf to www.heatpumpcentre.org and find information on design/simulation tools, heat pump example installations (from December 2001), a heat pump RD&D portal, standards and regulations etc. The site also provides information about other Annexes under the IEA Heat Pump Programme including "Year-round Residential Space Conditioning and Comfort Control Using Heat Pumps" and "Heat Pump Systems for Single-Room Applications".

If you want more information on these projects, or if you want to contribute with your experience, please contact the IEA Heat Pump Centre (hpc@heatpumpcentre.org)



World Bank Clean Air Initiative

Founded in 1944 and owned by more than 180 member countries, the World Bank is a large source of development assistance which uses its financial resources and staff knowledge to individually help each developing country onto a path of stable, sustainable, and equitable growth. The Bank provides financial, advisory, and training services to its clients on various projects, and makes a wide range of information available about them.

Among the ongoing projects is the 'Clean Air Initiative'. It seeks to promote and demonstrate innovative ways to improve urban air quality through partnerships and sharing of knowledge and experience.

The World Bank website gives information on the Clean Air Initiative for cities of Europe and Central Asia, Asia, Latin America and sub-Saharan Africa. Although it deals mainly with outside air quality, this site also contains interesting information

about urban air pollution and its consequences in various cities.

Web : www.worldbank.com/cleanair/

NEWS FROM PRACTICE

Air Revitalization in Closed Habitats

To keep astronauts in space, the necessary life support functions have to be provided. Permanent habitation of the International Space Station or future long duration missions (e.g., to Mars) make closed loop life support systems inevitable as resupply is limited and very cost-intensive.

Besides the water loop (transpiration, urine, wash water, drinking water) in a space habitat the closure of the air loop is most important. A closed loop Air Revitalization System like ARES converts the exhaled carbon dioxide, CO₂ into breathable oxygen by means of electrical power alone.

The CO₂ is adsorbed by a solid amine bed. It is desorbed by steam and the CO₂ is delivered to a Sabatier reactor. The Sabatier makes use of the hydrogen produced by the electrolyser and converts the CO₂ into methane and water. The water is fed back again to the electrolyser, which generates the breathable oxygen for the crew and the hydrogen for the Sabatier.

Terrestrial applications of these developments are for safe havens and shelters, where the regenerative CO₂ removal function is of importance. A closed loop air revitalization system consisting of the three components CO₂-removal, Sabatier and electrolyser is necessary where a completely sealed and isolated habitat is to be achieved with electrical power available.

The single components as well as the whole process are described on the AIVC CD. To get a fast overview, just skip the intro and click on 'Advanced Technologies → ARES → 2x → click on picture' or produce a printout.

Contact : willigert.raatschen@astrium-space.com

Eurovent Certification of Air Conditioning Products

The Eurovent Certification scheme is based on voluntary certification programmes for thirteen groups of air conditioning products. The certification programmes are established and administrated by Eurovent (European Association of Air Handling and Refrigerating Equipment Manufacturers) through the Eurovent Certification Company.

Among the products covered by Eurovent Certification are comfort air conditioners (up to 100 kW cooling capacity), fan coil units and air handling units.

Manufacturers present performance and construction data for all products or selected ranges within the scope of the programme. This data is evaluated by the Eurovent Certification Company and units are selected for testing by independent laboratories. If results are satisfactory, products or ranges are listed in the Eurovent Directory of Certified Products. They are then subject to regular random testing to verify compliance with catalogue data.

The Eurovent Directories of Certified products are published regularly. They contain details of the programme, participants and product references. Directories are mailed free of charge upon request.

Updated information on all certified products is provided on Internet :

www.eurovent-certification.com

GHR: A French Duct Cleaning Association

GHR (Groupement Hygiène des Réseaux Aérauliques) is a French association founded in 1997 whose active members are the contractors active in air duct cleaning. Associate members are manufacturers and consultants. Almost 100 companies are members.

Activities are organised into Committees and task forces. Significant actions include :

- Setting up of 3 specific qualifications for contractors;
- Setting up of specifications of training sessions;
- Information meetings and participation to exhibitions/shows;
- Follow-up of standardisation and regulation;
- Studies in partnership with the French insitute COSTIC (www.costic.asso.fr).

GHR is a member of ICVH (International Council on Ventilation Hygiene).

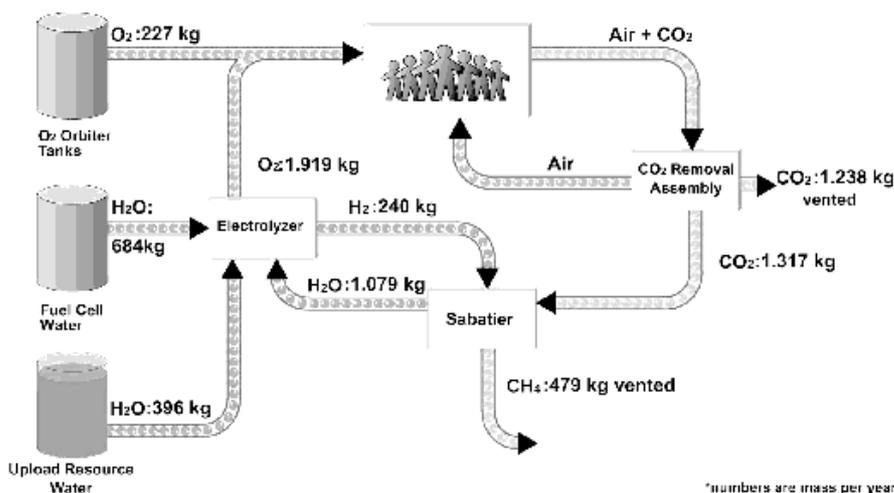
Web : www.ghr.asso.fr/ang/ang.htm

TRNSYS: An Environment for the Transient Simulation of Buildings

TRNSYS is a complete and extensible simulation environment for the transient simulation of systems, including multi-zone buildings. Available since 1975, TRNSYS has become a reference in the simulation world over the last 25 years. The IISiBat simulation environment driving the TRNSYS engine makes it rapidly accessible to novice users.

Unlike many simulation tools on the market today, TRNSYS allows the user to describe and monitor nearly all interactions between system components. In addition, the simulation may be performed at user-specified time-steps ranging from several hours to several seconds (depending on the process being studied). The modularity of the program allows the user to have as many pumps, chillers, cooling coils, solar collectors, etc. as necessary. Users can also create new components written in any programming language and add them directly to TRNSYS.

TRNSYS also features interfaces with other programs, such as the multizone air infiltration and pollutant transport simulation software COMIS (cf. September issue of AIR).



Air Revitalization on the International Space Station with ARES for a crew of 7 astronauts

TRNSYS distributors regularly organize training courses

(see website <http://software.cstb.fr/main/events.asp?langue=us&m=pr>).

A demonstration version of TRNSYS (in English) is available on the WEB site of the French distributor: <http://software.cstb.fr>; it is also included in the AIVC CD-ROM. For a more detailed version of this article, click here.



ATIC : The Belgian Royal Association of Heating, Ventilation, Air-Conditioning and Related Systems

The Belgian Royal Association of Heating, Ventilation, Air-Conditioning and related systems (ATIC), unites people working in the field of HVAC systems, such as consultant engineers, administration, research centres, controlling institutes, or within companies which install, manufacture or sell thermal products. Recently, approximately ten "member companies" joined the organisation.

The objective is to promote technical progress made in the field of heating, refrigeration, ventilation, air-conditioning & related systems, mainly by organising training courses, conferences, seminars, by handing out specific awards, by supporting and guiding research activities, by participating in the development & publication of standards, by publishing a magazine/newsletter as well as various brochures, etc..

A few examples :

- in 2002, the organisation of a series of training courses to improve the air treatment and air conditioning (climatologic aspects, thermal comfort, energy saving, thermodynamics, cycles & systems of air conditioning, air quality, acoustics, calculation of hydraulic systems, terminal units & control systems).
- in 1997, ATIC had the privilege of organising the World Congress of Heating & Climatisation, CLIMA 2000, in Brussels.

- ATIC subsidised the set-up of a programme to simulate the thermics of buildings (MBDSA) and of a typical meteorological year.
- The publication of ATIC fact sheets

ATIC is a member of REHVA (Federation of European Heating and Air Conditioning Associations).

REHVA assembles 24 European technical associations (one per country) which represent the heating, refrigeration, ventilation & air-conditioning sectors; it is important to emphasize that REHVA thereby allows for fruitful exchanges between the member states. REHVA has published a dictionary in twelve languages, of technical expressions used within the profession.

Furthermore, ATIC is an "International Associate" of ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers).

Web <http://www.atlc.be> (will be available soon)

The French Permanent Survey on Indoor Air Quality

Created by the French Government in September 1999, the Permanent Survey on Indoor Air Quality (in French: *Observatoire de la qualité de l'air intérieur*) aims to provide the necessary data for risk assessment and risk management related to exposure to indoor air pollution, by better understanding: a) environmental and behavioural determinants of indoor exposures, b) exposure levels to the populations concerned.

Its implementation has been entrusted to CSTB (Centre Scientifique et Technique du Bâtiment). It is a tool to help the decision-maker manage risks. The data will make it possible to target actions on the specific housing which presents risk with relation to a given pollutant.

About fifteen parameters were identified for the survey :

- Radon
- Asbestos
- Lead
- Volatile Organic Compounds (VOCs) : about 40 compounds including benzene, glycol ethers and formaldehyde
- Nitrogen dioxide (NO₂)
- Carbon monoxide (CO)
- Particles matter
- Bacteria
- Moulds
- Animal allergens

- Temperature, humidity, carbon dioxide
- Man made mineral fibres
- Biocides
- Legionella

An initial pilot work phase was started in March 2001, with a first group of 99 sites (90 dwellings and 9 schools).

From 2002, the Permanent Survey should make it possible to collect data coming from 1000 occupied sites (dwellings, offices, schools, prisons, sport centres, concert halls, department stores, hotels, etc). More details on the CD, in English or in French.

INFO FROM PROJECTS

The Technical Program of the AIVC

The AIVC has defined its technical program for the period May 2001 - May 2003.

The proposed thrust of the technical work plan is to highlight the role of ventilation and infiltration as a heat transfer through the building envelope and air quality mechanism, and its role within the context of sustainable development and climate change. It is proposed that developments based on current and new technologies will be synthesised into appropriate products, such as simplified tools and documents, targeted at the relevant sectors and users.

In this period, we anticipate addressing the following topics:

- appropriate ventilation, such as passive cooling and hybrid systems, to address the issue of climate change and sustainable development;
- the impact of ventilation on occupant performance such as productivity and learning skills in the non industrial built environment;
- ventilation in the urban environment and strategies for a cleaner city of tomorrow;
- the impact of ventilation and infiltration in the energy performance of buildings with respect to regulations;
- guidance on product specifications for innovative development related to emerging codes, regulations and standards;
- the role of the external envelop on rational energy use and moisture transmission through ventilation and infiltration;

- simplified measurement techniques for commissioning and maintenance during system lifetime.

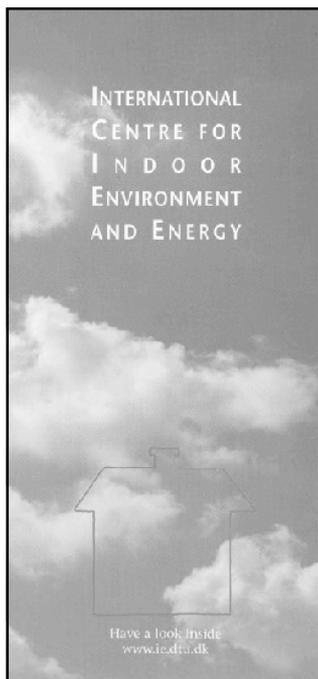
The technical program will result in the production of Technical Notes. The first three technical notes in preparation are:

- Ventilation and Energy Performance
- Ventilation and Outdoor Pollution
- Energy and Ventilation in Relation to the Building Envelope

The International Centre for Indoor Environment and Energy at the Technical University of Denmark

The International Centre for Indoor Environment and Energy was established in 1998 at the Technical University of Denmark, made possible by a major research grant from the Danish Technical Research Council. The Centre is based on a 10-year contract with a total budget of near 57 million Danish kroner (8 million Euro) for the first five-year period. With Professor P. Ole Fanger as director, the Centre encompasses a wide range of interdisciplinary experts from 14 nations, covering such fields as the indoor environment and its effect on humans, energy engineering, building physics, psychology and the life sciences.

The research programme focuses on studies of the effect of the indoor environment on human comfort, health and productivity. Studies to model



energy consumption in buildings, humidity transfer in building components, and air distribution in spaces form another significant part of the programme. The overall aim of the Centre's research is to acquire new knowledge and to integrate and develop design methods that optimize buildings, their technical systems and the indoor environment.

View the brochure on the CD .

Web www.ie.dtu.dk

Personalized Ventilation

The project summary below encompasses two current Ph.D. studies performed by Jan Kaczmarczyk and Radim Cermak at the International Centre for Indoor Environment and Energy, Technical University of Denmark.

Personalized ventilation is a new concept for ventilation of offices. The aim is to satisfy all the occupants by supplying small amounts of clean, cool and dry air directly to the breathing zone of each person. At the same time, each person is provided with the possibility of generating and controlling his/her own preferred thermal environment. Thus, occupants' health, comfort, satisfaction and productivity may be improved. However, only a few studies on the personalized ventilation principle have been performed and reported so far.

The current research activities of the Centre are focused on development and evaluation of supply air terminal devices for personalized ventilation. The air terminal device is an essential part of any personalized ventilation system. It plays a major role in the distribution of personalized air around the human body and thus determines occupants' thermal comfort and perceived air quality.

The research comprises theoretical analyses and physical measurements in full-scale test room(s) under well defined conditions using the most advanced techniques (breathing thermal manikins, optical velocimetry, tracer-gas technique, etc). In order to determine occupants' response to these systems (preferred airflow rates, temperatures, etc.) experiments with human subjects are being carried out. Design criteria will be outlined.



WinDat: Focus on Thermal and Solar Properties of Windows

The acronym **WinDat** stands for: Windows as Renewable Energy Sources for Europe - Window Energy Data Network

WinDat is a European RTD Thematic Network. It aims to make available and freely distribute a European software tool for the calculation of the thermal and solar properties of commercial and innovative window systems on the basis of known component properties and thermal and solar/optical interactions between the components.

It is hoped that this tool will be collectively supported and used in research, industry, standardisation, education and design throughout Europe. It will be used to compare, select and promote innovative windows and window components for the optimum use of renewable energy and maximised energy savings and indoor comfort.

Project outcome

The prime deliverable of the project will be a state of the art software tool, based on the existing tool WIS, with an integral product database of components. A database with both commercial products and RTD data, comprising, for example, glazings, shading devices and frames.

Initially (by the end of 2001), the project will deliver a website with a public section for WIS users and a web-based system for the free distribution of the software. Later outputs will also include a classification of data (quality, application), datasets for use with the WIS software, benchmark tests, user support, students' course and plans for future RTD.

Ventilation

One of the unique elements in the software tool is the combination of glazings and shading devices. This makes the tool particularly suited to calculate the thermal and solar performance of ventilated windows and climate or double skin facades, where the heat exchange by forced or natural air flow is a critical design parameter determining winter solar gains and summer solar protection.

Network members

The Network membership comprises about 40 research and educational organisations, industry, consulting engineers and designers. Together, they represent all interested parties in Europe

from research through development to manufacture and distribution.

Co-ordination

Dick van Dijk

TNO Building and Construction Research, Delft, The Netherlands

Email: H.vanDijk@bouw.tno.nl

More information

On the objectives, work packages, time schedule and the list of all its members, surf to: www.windat.org

The detailed WinDat work programme is presented on the CD .

WinDat is supported by DG for Energy and Transport of the European Commission.

Air Quality and Comfort in Aircraft

An EU project in the 5th framework programme is Cabinair. It is an 8 million • research project, running for three years. The project started in 2001 and ends in 2003.

Cabinair addresses the widespread concerns about cabin air quality in commercial passenger aircraft and seeks to enable airlines to provide a healthier environment for passengers and cabin crew. The work programme includes:

- A programme of 'measurements in the sky';
- Development of innovative designs and technologies servicing cabin air (without compromising commercial requirements and external environmental impacts);
- Carrying out pre-normative research to develop performance specifications and propose a European pre-standard (that is both technically feasible and economically justifiable).

The Cabinair consortium consists of 15 organisations from seven nations.

- Three major European airlines; (KLM, SAS and BA)
- Two civil aircraft manufacturers; (AIRBUS and Dornier)
- A civil aircraft engine manufacturer; (Rolls Royce)
- Two major aircraft air-conditioning manufacturers:-

a manufacturer of Environmental Control Systems (Honeywell Normalair Garrett)

a manufacturer of filtration systems; Pall Aero Space)

- A civil aviation authority involved in certification activities;
- An aviation health organisation;
- Five research institutes specialising in the provision of safe, healthy and comfortable conditions for people in enclosed environments (BRE, CETIAT, NBI, TNO, University of Essen).

Improving the Learning and Teaching Environment

The Objectives of Annex 36 of IEA (International Energy Agency) are:

- to provide tools and guidelines for decision makers and designers to improve the learning and teaching environment of educational facilities through energy-efficient retrofitting.
- to support the decision makers in evaluating the efficiency and acceptance of available concepts.
- to give recommendations on how to operate the retrofitted buildings.
- to promote energy and cost-efficient retrofit measures.

To know more, see the October 2001 issue of the Annex 36 Newsletter on the CD  or on the Web at www.annex36.bizland.com/SubtaskD/newsletters.htm.

See also the Annex 36 website: www.annex36.bizland.com



Annex 36 Newsletter
Improving the Learning & Teaching Environment
International Energy Agency - Energy Conservation Buildings and Community Sites (IEA/ECBCS)
<http://www.annex36.bizland.com>

Volume 2, Issue 1 October 2001

Annex 36 on the Coast of Sicily
23rd - 25th April 2001
The splendor of the sunrise over the Mediterranean each morning, made it difficult to concentrate on the contents of the Annex 36 meeting for the 15 in attendance. Our host, Umberto diMatteo, provided a breathtaking conference site.
During the three-day meeting, presentations were made on progress on the four subtasks that will be used in the final development of the Annex's Objective - Concept Advisor for use by Decision-makers and

Getting to know ...
United States of America
Second in a series of member country profiles. Presently in the United States, over 115,000 K-12 schools and thousands of universities and colleges provide education to tens of millions of students across the nation annually. To support this education, billions of dollars (Euro) in energy is used annually. The majority of educational facilities in use were built before 1970 and are energy inefficient.
The U.S. Department of Energy has established a program, called Rebuild America aimed at improving the energy efficiency of existing buildings within five sectors of the typical community: K-12 Schools, Colleges and Universities, Housing, Commercial and State and Local Governments.
The U.S. Department of Energy estimates that over 25% of the energy used is wasted. The label given to the K-12 Sector of the Rebuild Program is EnergySmart Schools.
The Objectives of Rebuild America for the K-12 and College and University Sectors complements the Objective of Annex 36 - Retrofitting of Educational Buildings. The Annex 36 Objective is to provide educational facility decision-makers and designers with tools and guidelines for energy efficient retrofitting (renovation) of existing buildings that will

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Continued on page 2

IEA Annex 36 Newsletter Page 1

STANDARDS AND REGULATIONS

ASHRAE 62.2 Completes Second Public Review

ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) is currently working on a ventilation standard specifically for dwellings. The second public review of ASHRAE Standard 62.2P, Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings, closed on October 8, 2001. There were over 400 comments generated by over 100 commentors.

The seven high-volume comment areas concern whole-house mechanical ventilation, kitchen and bath exhaust ventilation, sound rating of fans, air distribution systems in garages, carbon monoxide alarms, backdraft testing of some combustion appliances and pollution sources, exposures and control.

All comments are being addressed at SPC 62.2P meetings in December 2001 and at the ASHRAE Winter meeting in January 2002. Commentors will be informed of the committee's decisions and the reasons for them. Before the committee can recommend publication, all the commentors must be asked to determine if their issues are sufficiently resolved by the committee's actions. Final approval of this draft as an ASHRAE standard is likely to be one year away, but earlier approval is possible.

To know more about the comments and the forthcoming procedure, see the CD Rom .

New Energy Performance Standards for England and Wales

New energy performance regulations have just been announced that will come into effect from April 2002. The associated guidance (contained in Approved Documents) defines "reasonable" standards for envelope insulation, airtightness and the efficiency of building services systems. Of particular interest to readers of AIR is the guidance relating to airtightness. For all building types, an air permeability standard of 10 m³/hr.m² has been set (permeability is the measured air flow at 50 Pa divided by total envelope area separating the conditioned space from the external environment). To help industry achieve the airtightness standard, sets of robust design details have been published. To confirm that the airtightness standards are being achieved in practice, the guidance requires an airtightness test on all new non-domestic buildings with a floor area greater than 1,000m². This is part of a wider

strategy to improve the correlation between design and as-constructed performance.

Another important new requirement is the setting of performance standards for air conditioning and mechanical ventilation. For office buildings, these have been set in terms of kgC/m².annum, but for other buildings where robust benchmark data is unavailable, performance standards for mechanical ventilation have been set in terms of specific fan power.

The Approved Documents and the publication "Limiting thermal bridging and air leakage: Robust construction details for dwellings and similar buildings" are published by The Stationery Office (TSO - Website www.the-stationery-office.co.uk) and can be purchased from TSO outlets. The Approved Documents can also be found on www.safety.dtlr.gov.uk/bregs/brads.htm.

ISO TC 205 : International Standardisation on IAQ Criteria

ISO TC 205 deals with building environment design. Several subgroups specify the methods of expressing design criteria for buildings for acceptable indoor environment (thermal, acoustic, lighting conditions and indoor air quality).

Working Group 4 is focusing on the "methods of expressing the quality of indoor air for human occupancy". The scope of this work is to specify methods to express the quality of indoor air for human occupancy, and to express several levels of acceptable quality, to express air quality based on its effect on human health and comfort.

The existing draft describes the design methodology: taking into account pollution sources (indoor, outdoor and the system itself), using when possible source control, reduction (filtration or local exhaust) and then coming up to ventilation rate for dilution.

Several methods are described :

- target values of concentration of a given pollutant;
- prescription of minimum ventilation rates;
- ASHRAE 62, revised to take into account human occupation and emission of materials;
- CEN Report 1752 on perceived Air Quality;
- Australian Standard AS 1668.2 Calculating an Amenity Index (Dilution).

These methods vary one from each other on their criteria and the nature of results obtained. Some of them are multizone, others calculate per each zone of the building; some take into account

recycling, air cleaning or ventilation effectiveness, others don't.

CETIAT, which participates in ISO/TC205 works, applied the various draft methods to an office building. The overall airflows results vary from 1 to 3.4. For a meeting room, airflows cover a range from 1 to 3.8 and CO₂ levels from 1 to 2.5 (700 to 1750 ppm, for an outdoor concentration of 350 ppm).

This shows that work on IAQ must continue. The diversity of methods proposed in the ISO TC 205 / WG4 project shows the difficulty of expressing IAQ. The hypothesis of these methods, the parameters taken into account and the results are largely different. Designers therefore have to be aware very clearly of the importance of their choices and their influence on the results.

A fuller version of this article is available on the CD .



New European Standards from CEN TC 156

Three new European standards have very recently been published related to ventilation in buildings.

They have been prepared by Technical Committee 156 of CEN (European Committee for Standardisation).

Their references and titles are as follows:

- EN 12238: Ventilation for buildings – Air terminal devices – Aerodynamic testing and rating for mixed flow applications
- EN 12239: Ventilation for buildings – Air terminal devices – Aerodynamic testing and rating for displacement flow applications
- EN 13181: Ventilation for buildings – Terminals – Performance testing of louvres – Performance testing of louvres subject to simulated sand.

One other new standard is about to be published (and as of writing, is already available in certain European countries):

- EN 12589 : Ventilation for buildings – Air terminal units – Aerodynamic testing and rating of constant and variable rate terminal units.

ASHRAE Proposes Guidance for Ventilating Smoking Areas

ASHRAE Standard 62-1999, Ventilation for Acceptable Indoor Air Quality, sets minimum ventilation rates and other requirements for commercial and institutional buildings. Addendum 62g, released for a third public review, contains requirements for separating smoking and non-smoking spaces to maintain the status of non-smoking spaces.

The proposed addendum allows for air cleaning to be used to permit recirculation or transfer from smoking areas to non-smoking areas. It requires that air from environmental tobacco smoke (ETS) areas to be recirculated or transferred to ETS-free areas provided that it has been cleaned or treated to remove the full spectrum of ETS contaminants to levels at or below those of the outdoor air. However, the standards for rating the necessary air cleaning equipment are still not fully developed, so the use of these technologies will require careful design and application.

The public review date for 62g was from Nov. 30 to Dec. 29, 2001. Three other proposed addenda to the existing standard were submitted at the same time to public review:

- Addendum 62h describes the requirements of the IAQ procedure in mandatory and enforceable language. The IAQ procedure is a performance-based design approach in which a building and its ventilation system are designed to limit concentration of contaminants at certain levels.
- Addendum 62y classifies air with respect to contaminant and odor intensity and limits the recirculation of lower quality air into spaces that contain air of higher quality.
- Addendum 62x revises the humidity control requirements, as well as clarifies the standard's existing recommendations and requirements to assure that the building envelope does not contribute to indoor air quality problems.

BOOKSHOP

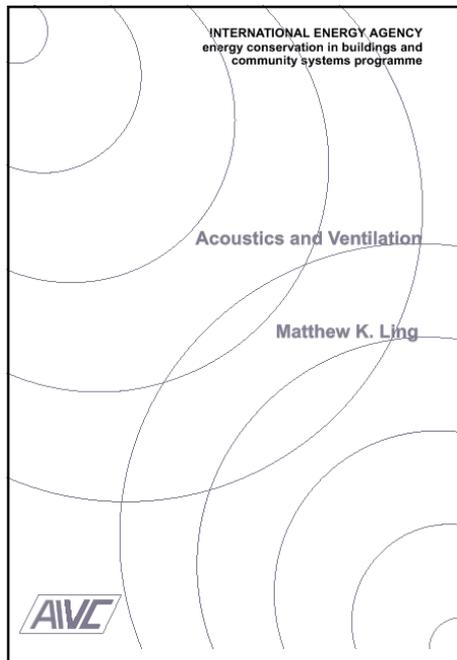
New AIVC Publications

Acoustics and Ventilation

Matthew K Ling

2001, ISBN 1 902177 17 1, 101 pp, Code TN 52

The first chapter aims to provide the reader with an overview of the basics of acoustics, which are required as part of the ventilation systems design process. With this knowledge the designer can, with the remaining chapters, apply these principles to providing quiet and effective ventilation in buildings. A detailed analysis of background, components, problems and methods for achieving quiet ventilation systems in buildings. This new report is on the CD .



Occupant Impact on Ventilation

Martin W Liddament

2001, ISBN 1 902177 18 X, 97 pp, Code TN 53

The report concentrates on case study examples to emphasise occupant response and to show what has proved successful and where problems might occur. It also looks at demonstrated problems and solutions. The intended audience includes designers, architects, building owners and occupiers, and the information media.

The contents include:

- a general review of occupant and building needs, including a summary of air quality control mechanisms and the sphere of influence over which occupants have control;

- an analysis of ventilation options including an outline of the occupant/control interface for each strategy;
- brief discussions on energy, indoor air quality and climate;
- factors influencing different building types;
- guidance and practical methods by which occupants can improve both their environment and energy efficiency;
- commissioning and maintenance issues;
- simple design measures proven to make buildings more occupant friendly;
- information on design tools and algorithms for design and evaluation as available;
- general conclusions;
- an Appendix of relevant annotated literature separated according to building type.

This new report is on the CD .

AIVC Electronic Publications

A total of 56 AIVC publications, including technical notes, annotated bibliographies, guides and conference proceedings are now available on the CD , as well as a number of informative literature lists.

These documents represent the AIVC's output since its inauguration in 1979, and comprise a considerable bank of ventilation-related information.

Worth a special look are the popular 'Guide to Energy Efficient Ventilation' , 'Improving Ductwork: a Time for Tighter Air Distribution Systems', and several recent technical notes including 'The Role of Ventilation in Cooling Non-Domestic Buildings' , 'Energy Impact of Ventilation: Estimates for the Service and Residential Sectors' , 'Ventilation Technology in Large Non-Domestic Buildings' , and 'Numerical Data for Air Infiltration and Natural Ventilation Calculations' .

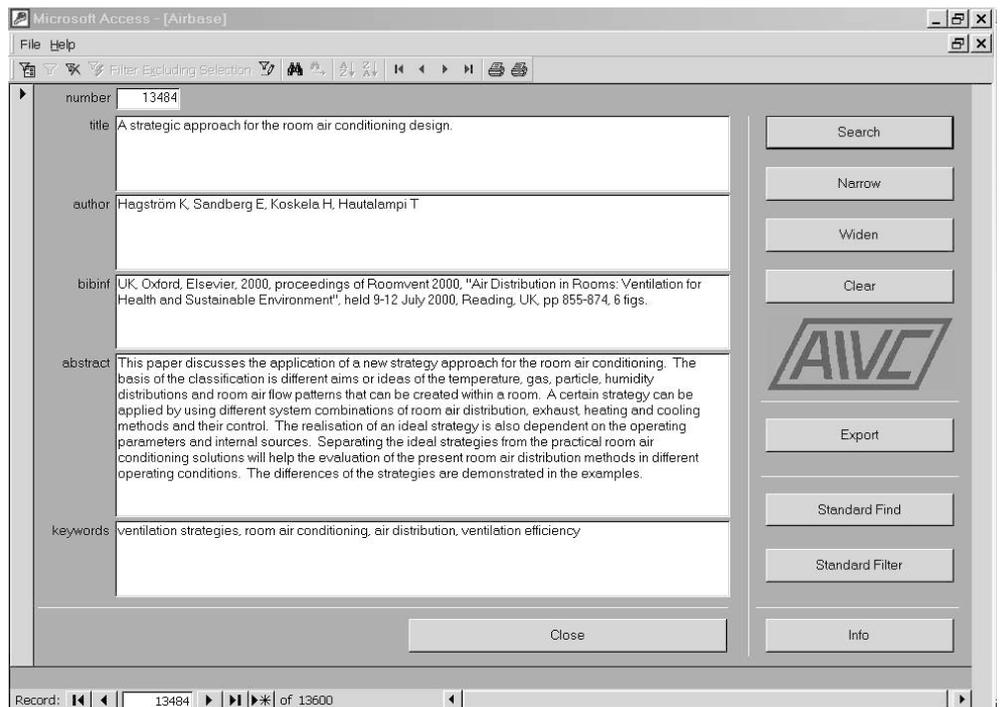
Many AIVC publications can still be obtained in printed format – check the AIVC website for details: Web www.aivc.org/Publications/clearance.html.

AIR Newsletters - Back Issues

Read AIR issues for September , June  and March  2001 on the CD. Issues back to December 1995 can be found on the web at: Web www.aivc.org/air_backissues.html

AIRBASE - Bibliographical Database of Ventilation Information - 14,000 Abstracts in Searchable Format - Full Version Now Available

AIRBASE is the bibliographic database of the Air Infiltration and Ventilation Centre. It contains abstracts of articles and publications related to energy efficient ventilation. Where possible, sufficient detail is supplied in the bibliographic



details for users to trace and order the material via their own libraries. Topics include:

- ventilation strategies,
- design and retrofit methods,
- calculation techniques,
- standards and regulations,
- measurement methods,
- indoor air quality and energy implications.

Entries are based on articles and reports published in journals, internal publications and research reports, produced both by university departments and by building research institutions throughout the world.

AIRBASE has grown and evolved over many years (1979 to present day, 14000 abstracts). **AIRBASE** is updated on a regular basis, every three months.

The full version of **AIRBASE** with a new improved interface (Microsoft Access) is now available on the AIVC-CD . A demo version is also available on the AIVC website (www.aivc.org/Publications/Airbase.htm).

Features of **AIRBASE** include free text searching, combined with search narrowing or widening. It is also possible to search individual fields, such as keywords or authors .

For example, if you were to search for 'radon' or 'energy conservation', **AIRBASE** would then put together a list of abstracts which concern either of those topics.

Latest Additions to Airbase

A summary of the latest additions to the database (Recent Additions to Airbase) is also published every three months and is available on the AIVC-CD  and on the website.

AIVC Conference Proceedings

The AIVC holds a conference each year in September/October in one of the AIVC participating countries, presenting around 70 papers on a variety of topics in air infiltration or ventilation fields.

The proceedings of the 2000 conference "Innovations in Ventilation Technology" are available on the AIVC CD .

The proceedings of the 2001 conference "Market Opportunities for Advanced Ventilation Technology" are available for purchase. The price for the CD-Rom containing the proceedings of the 20th (1999), 21st (2000) and 22nd (2001) AIVC Conferences is 75 Euro for enquirers in AIVC



member countries and 150 Euro for enquirers in non AIVC member countries.

Visit our web site (www.aivc.org) or contact us for more information and order forms.

The IEA's Energy Conservation in Buildings Programme - Bookshop

This web-based bookshop acts as an outlet for all the ECBCS Implementing Agreement's publications. Forty 3-5 year research projects have taken place since its establishment, over thirty of which are now completed. In order to fulfil the International Energy Agency's remit for wide dissemination of research results, the final reports and other publications of this programme are available to all. Click to view the latest newsletter, including a list of current bookshop publications

 Web www.ecbcs.org



Focus on Annex 28 - Low Energy Cooling

The following bookshop publications are now available:-

- Technology Selection and Early Design Guidance
- Review of Low Energy Cooling Technologies
- Detailed Design Tools for Low Energy Cooling Technologies
- Case Studies of Low Energy Cooling Technologies

They can be ordered via the ECBCS Bookshop at www.ecbcs.org

Energy and Buildings

The 2001-2 contents for this respected journal are listed here .

IEA Publications Catalogue

The new publications catalogue from the IEA is now available on the CD  or at Web: <http://www.iea.org/books/catalogue.pdf>



IEA Heat Pump Centre Recent Publications

The IEA Heat Pump Centre (HPC) is the international forum for the exchange of information and knowledge and the

stimulation of international co-operation on heat pumps.

Recent publications include two documents on heat pumps for buildings:

Distribution and Ventilation

How does the choice of heating and cooling distribution networks influence the energy efficiency of the heat pump system? How do ventilation, heating and cooling distribution, and energy demands of a house interact? Which systems are best suited to modern low-energy houses? The report "Domestic Heating and Cooling Distribution and Ventilation Systems and their use with Residential Heat Pumps" addresses these questions. It is available in HPC member countries. The price is 40 EURO (HPC-AR8).

Retrofitting with Heat Pumps in Buildings

The market potential for heat pumps in existing buildings is substantially larger than for new buildings. However, this potential is not realised in several countries. This is mainly caused by the high distribution temperatures required in existing installations. The report "Retrofitting with heat pumps in buildings" provides insight into the residential heat pump market and the initiatives to promote heat pump use in retrofit situations. It is recommended literature for architects and planners, as well as policy makers and utilities. It is available in HPC member countries for 40 EURO (HPC-AR9).

Web: www.heatpumpcentre.org

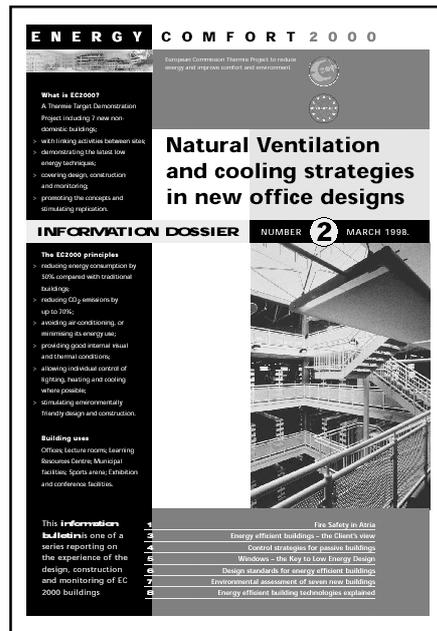
Mail: hpc@heatpumpcentre.org

Irish Publications on Energy and Buildings

The Energy Research Group, University College Dublin (Ireland) offers several publications relating to buildings and energy that can be downloaded free of charge on its website.

One publication, for example, concerns a demonstration project entitled Energy Comfort 2000 which was sponsored by the European Commission and took place between 1993 and 1998. The aim was to show how to reduce energy consumption and improve the comfort and environment in seven new non-domestic buildings.

The project results took the form of eight information dossiers. One of them is: 'Natural ventilation and cooling strategies in new office designs' (March 1998). It describes the general principles of natural ventilation, the calculation of air flows and the strategies for building cooling. It presents case studies of six buildings, with the lessons learned.



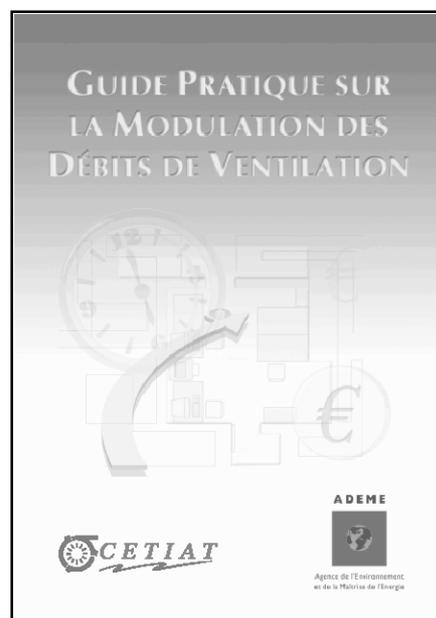
The full text of this information dossier is on the CD Rom .

Other interesting documents can be downloaded at : http://erg.ucd.ie/erg_downloads.html

A Practical Guide to Demand Control Ventilation

A practical guide to demand control ventilation was recently published by ADEME (the French Agency for Environment and Energy Management) and CETIAT (the French Technical Centre for the HVAC Industry).

This guide describes the principles of demand control ventilation, gives information about the type of buildings where it can be used, and



underlines the benefits of such systems with regard to energy consumption.

It also shows how to design a demand control ventilation system according to the type of control (the sensor may measure CO₂, humidity, temperature, CO, etc, the system may adjust terminal or fan). It explains the importance of choosing the right type of sensor and the correct way to position it in the rooms.

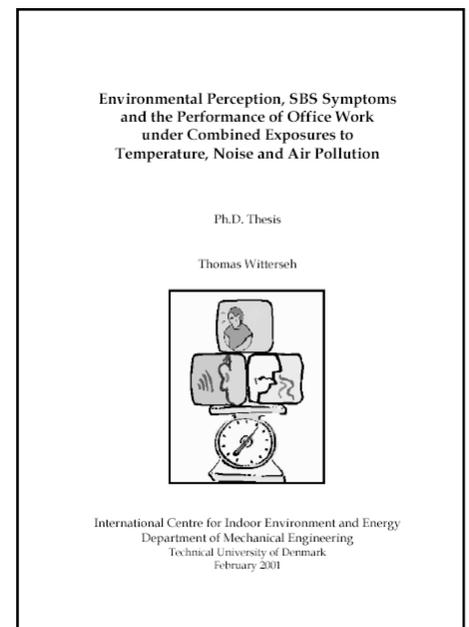
The full text of the guide (in French) is available on the AIVC CD .

A Danish Thesis on Environmental Perception and Performance of Office Work

This Ph.D. Thesis was prepared by Thomas Witterseh, International Centre for Indoor Environment and Energy, Technical University of Denmark.

The thesis deals with human perception of the environment, sick building syndrome symptoms and the performance of office work in the indoor environment. Single and combined effects of temperature, heat stress, noise and air quality have been studied in three experiments, which are described in three separate chapters of the thesis.

The full text of the thesis is available on the AIVC CD .



Testing Buildings for Leakage

In the past, buildings were "leaky" and much of the required ventilation was provided by this fortuitous air leakage. Modern building construction however, aims to provide an airtight envelope in order for controllable ventilation to eliminate cold draughts, prevent polluted air entering the building and to increase energy efficiency. This last point in particular will be of considerable importance in the UK, when the new Part L of the Building Regulations comes into force in April 2002. Part L specifically addresses the energy efficiency of buildings by looking at the conservation of fuel and power. The Regulations will demand increased standards of detailed design and site workmanship to ensure improved thermal performance and they also introduce standards of air-tightness.

CIBSE were involved in the governmental consultation process and have produced TM 23: testing buildings for air leakage, which describes how by understanding and appreciating the need for airtight construction in the early stages of design, building engineers and designers will achieve the high controllable ventilation standards demanded by clients and soon by the new Part L. This publication explains why air leakage testing is important, sets out acceptable rates of air filtration and explains what can be done should a problem be discovered.

More information at www.cibse.org

MEETINGS AND EVENTS

IAQVEC 2001 Conference in China

The 4th International Conference on Indoor Air Quality, Ventilation and Energy Conservation in Buildings was held in Changsha, China in the period 2-5 October 2001. The event was jointly organized by Hunan University and City University of Hong Kong, and was co-sponsored by 12 reputable international organizations and societies, including AIVC. The conference theme was targeted at all aspects of an integrated approach to the design and operation of healthy, comfortable and energy efficient buildings.

Around 300 participants attended the conference. There were seven keynote presentations and eight workshops, which covered a wide spectrum of key issues from the recent development in IQA to the sustainable built environment. Included in the Proceedings are 256 technical papers from 28 countries. The meeting thus served well as a forum for discussions from experts around the world, and documented the most recent technological advancements. In terms of the

number of participants and technical papers, this was regarded as the most successful international conference so far held in China in the related field.

More information about the conference is available at: www.chinahvacr.com/IAQVEC2001.

For proceedings ordering information, fax: (852)27889716 or email: bsttchow@cityu.edu.hk.

The 5th International Conference on Indoor Air Quality, Ventilation and Energy Conservation in Buildings will be held in Toronto, Canada in May 2004 in conjunction with CIB Congress. For more information, contact Dr. Elmahdy, Hakim at the Institute for Research in Construction, National Research Council Canada, Hakim.Elmahdy@nrc.ca.

Innovative Ventilation Systems

Second International Workshop, Brussels, Belgium, 21-22 March 2002

An increased number of countries and regions in Europe is implementing so-called Energy Performance Regulations (EPR). It is expected that more countries will follow this tendency. The envisaged new European Directive on Energy Efficiency will, if adopted, surely enhance this development since it will make the application of an EPR mandatory for new buildings and for major renovations.

If one is obliged to make an assessment of buildings in terms of energy performance, one should be able to assess all kinds of building designs and technologies. However, it is clear that it is not possible for the present regulations to

cover all innovative technologies that will be developed in the future. If there is no way to reward the advantages and benefits of innovative ventilation systems in an EPR, such regulation is clearly a barrier to innovation. However, the Principle of Equivalence offers a solution to overcome this barrier.

The main objectives of the workshop are to exchange ideas and information on innovative ventilation systems, and their relations with EPR. The following topics will be discussed: What are the trends in the ventilation systems/strategies under development or recently developed? How should those concepts be treated in the framework of standardisation and regulation on EPR? What is important in such regulations in order to accept new innovative technologies?

This workshop is organised in the frame of IEA Annex 35 HybVent. For more info, please contact us: nicolas.heijmans@bbri.be. See also the invitation and the registration form on the CD-ROM.

On the CD: Four articles presented during the first workshop in 1999. 'Ventilation in Buildings, an Overview of Challenges', by Martin Liddament, 'Standards, Regulations, Codes and Technical Approvals on Natural Ventilation Systems and Devices', 'Building Regulations for Ventilation in the UK', by Les Fothergill, CEN and the Prediction of Natural Ventilation Performance'.

Conferences to Come

See the CD for information about three conferences to come:

- Hybrid Ventilation 2002 (May 14-15, 2002 in Montreal (Canada))
- Building Simulation 2003 (August 11-14, 2003 in Eindhoven (Netherlands))
- Second International Conference on Research in Building Physics (September 14-18, 2003 in Leuven (Belgium))

Other Forthcoming Conferences

See also the list of Forthcoming Conferences on the CD.



The poster features two logos at the top: the Belgian Building Research Institute logo on the left and the Annex 35 HybVent logo on the right. The main text reads: 'Innovative ventilation systems', 'Second international workshop', '21-22 March 2002', 'Brussels, Belgium'. Below this, it states: 'Organised by the Belgian Building Research Institute http://www.bbri.be' and 'With the support of the Belgian Programme "SME Standards-Antennas"'. The HybVent logo includes the text 'Hybrid Ventilation Research and Standard Office Buildings'.



European Collaboration on Energy Performance Regulations ENPER-TEBUC

The Second International Workshop of ENPER-TEBUC was held in Paris, on the 12th of November 2001. About 150 participants from all over Europe attended the meeting. The central subject of this workshop was the challenge offered by Energy Performance Regulations to find adequate solutions for the integration of innovative technologies in such regulations. The interest of industry for this facet of the EP issue shows the importance of this subject, if one wants to come to a regulation as a driving force for innovation, instead of a barrier, as is now often the case.

Papers presented during this workshop are included on the AIVC CD .

Two other international workshops are already planned:

- "Considerations on the legal aspects of the practical implementation of energy performance regulations", Athens, Wednesday, 6th March 2002
- "Applicability on the existing building stock of Energy Performance Regulations developed for new buildings", Great Britain, Wednesday, 18th September 2002

The workshop in Athens will focus on the practical implementation of EPR in the participating countries. Differences in legislation, mechanisms used for control and enforcement of legislation, etc, will be discussed during this workshop.

Announcements of the international workshops as well as results of this project can also be found on the project's website, <http://www.enper.org/>.



The EPIC 2002 AIVC Conference

"Energy Efficient and Healthy Buildings in Sustainable Cities", to be held in Lyon, France

The 23rd AIVC conference will be held in conjunction with the 3rd EPIC conference, from 23rd to 26th October 2002 in Lyon, France.

EPIC is the European Conference on Energy Performance and Indoor Climate in buildings

The meeting builds on the experiences of the earlier events organised in 1994 and 1998, and now merges the efforts with the annual conference of the AIVC on ventilation and indoor air quality research. The conference aims at confronting views from researchers, industry, architects, engineers and policy makers on the future of buildings and their urban setting: how to assess the performances of buildings regarding energy efficiency and indoor climate conditions and make them perform better without harming the environment. Therefore oral and poster presentations will be combined with more specialised workshops on selected topics such as climate façades, sustainable urban planning, hybrid ventilation, IAQ, ICT, etc.

EPIC2002AIVC is a joint organisation of INIVE EEIG (OA of AIVC) and ENTPE, Ecole Nationale des Travaux Publics de l'Etat, in collaboration with University of Athens, Université de La Rochelle, CSTB, CETIAT and BBRI.

The venue is the HILTON Lyon hotel.

More info and call for papers are on the flyer (on the CD ) or at Web <http://epic.entpe.fr> or Web www.aivc.org

Workshops at the EPIC2002AIVC Conference

Energy Efficient and Healthy Buildings in Sustainable Cities

As announced earlier, the 23rd AIVC Conference will be held in Lyon, France, from 23rd to 26th October 2002, in conjunction with the 3rd European Conference on Energy Performance and Indoor Climate in buildings (EPIC). Apart from the usual oral and poster presentation sessions, a series of attractive workshops will be organised on selected topics, as listed below. This concept of thematic workshops was highly appreciated by the participants at the previous EPIC conferences in 1994 and 1998. These workshops bring together a number of specialists with various viewpoints from either science or industry on the selected topic in a constructive debate.

As soon as more details are available on the programme of workshops and other presentations, they will be made available at the website: <http://epic.entpe.fr> or www.aivc.org

Workshop topics

- 1. Energy performance regulations
- 2. Hybrid ventilation
- 3. Environmental performance assessment of building components
- 4. Sustainable urban planning
- 5. Glazing and active facades
- 6. Natural ventilation in urban settlements
- 7. Design of large buildings of high environmental quality
- 8. Contributions and challenges of the 'information society' to environmental quality
- 9. IAQ criteria for sustainable buildings
- 10. Indoor climate and economy
- 11. Air distribution systems, health and energy
- 12. Opportunities and barriers for the integration of renewables in the built environment

Energy Conservation in Buildings and Community Systems Programme : a Technical Day in Poland

The 50th Executive Committee Meeting of the IEA Programme „Energy Conservation in Buildings and Community Systems” (ECBCS) was held from 7 to 9 November 2001 at the conference centre of the Cracovia Hotel in Cracow, Poland, with 24 international ExCo members and 28 participants representing Polish energy and building sectors.

The Meeting in Cracow was hosted by the Silesian Technical University in Gliwice as the Contracting Party for Poland in the ECBCS Implementing Agreement. The chairman of the Organising Committee was Prof. Stanislaw Mierzwiński, the member of the ECBCS Executive Committee. Prof. Adam Gula, as a representative of the University of Mining and Metallurgy in Cracow, co-operated in organising of the conference in this town. Cracow is the old capital of Poland. It is now a very interesting centre of culture. “Totius Poloniae urbs celeberrima” – stated Mr Richard Karney, Chairman of the ECBCS ExCo.

During the first day of the Meeting, (i.e. the Technical Day), the energy, ecological and financial perspectives of the building sector in Poland were presented.

Because of the importance of the Technical Day issues, Prof. Janusz Steinhoff, Minister of Economy, Dr. Jerzy Kropiwnicki, Minister of Regional Development and Building and Prof. Boleslaw Pochopien, Rector of the Silesian Technical University assumed the Honorary Patronage over the conference.

The Meeting was sponsored by the State Committee for Scientific Research, the State Office for Housing and Urban Development, the Silesian Technical University, and the National Economy Bank.

The papers presented covered the following topics:

- Polish energy policy with reference to the building sector,
- The role of banks in financing building thermal modernisation in Poland,
- The energy effectiveness of Polish buildings, also including practical experience concerning ventilation problems and weatherstripping of windows,
- The perspective of sustainable development and application of renewable energy sources in the building sector in Poland,

Research work in the IEA-ECBCS Programme's field of interest included: local energy planning (Annex 33); retrofitting of educational buildings (Annex 36); and low exergy heating systems in buildings (Annex 37).

The conference proceedings “Technical Presentations” contain 13 papers on 128 pages and are available in print from STU Gliwice or on the CD-ROM .

ASHRAE 2002 Winter Meeting

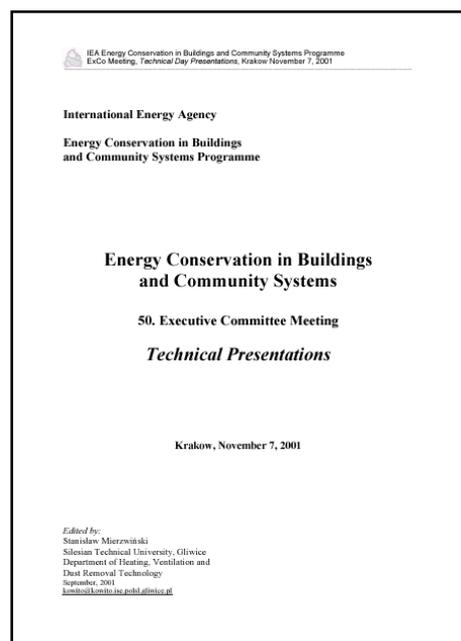
The ASHRAE 2002 Winter Meeting will be held in Atlantic City (USA) from January 12th to 16th. It will be combined with the Ashrae co-sponsored International Air-Conditioning, Heating and Refrigerating (AHR) Exposition.

The Technical Program will include nearly 90 sessions.

Ashrae announces that alternative and sustainable technologies will be highlighted in the meeting.

One seminar will focus on operable windows in non-residential buildings. Another seminar will discuss the pros and cons of creating a separate indoor air quality and ventilation standard for the hospitality industry. Infection control in regard to HVAC systems will also be examined in a seminar, which will address areas of responsibility, how those areas are handled and how HVAC systems interact with infection control.

For more information: www.ashrae.org



POLICY AND PROGRAMMES

Energy Situation and Energy Conservation Programme for Buildings in France



As in other countries, numerous measures have been implemented in France since 1973 in order to reduce the total energy consumption of existing and new buildings: information for users, regulations for new buildings, specific standards for existing buildings, public subsidies for energy audits and energy conservation investments in existing buildings.

The benefit of these measures is a saving of 14.5 million tons of oil equivalent (Mtoe) per year, corresponding to 15% of the annual energy consumption of the building sector. Prospective studies have shown that a large potential for additional savings, comprised between 10 to 13 Mtoe, remains accessible.

In 1999 France launched a new energy conservation initiative, consisting of two programmes, one against Climate Change and the other for Energy Efficiency Improvement.

They include measures dedicated to new buildings by means of a reinforced regulation that will increase step by step over the next fifteen years in order to greatly improve the energy-related design of new buildings.

After these improvements, the stakes for energy conservation will essentially be located in the stock of existing buildings. They will represent more than 50% of the energy consumption of the residential sector in 2050.

The implementation of the different measures included in these two programmes is largely based on the technical and financial means of the French Agency for Environment and Energy Management (ADEME).

To find out more, read the detailed information provided on the CD .

AIVC SPONSORS' CORNER

The new operating agent of the AIVC is offering the opportunity to sponsor the activities of the AIVC. This will be of direct benefit both for readers of AIR and for the sponsors themselves:

- Sponsors will be able to reach **thousands of potential clients** directly interested in ventilation related products;
- The sponsorship is one of the means that will enable the AIVC to provide more information at lower cost.

Three levels of sponsorship are possible (Gold, Silver and Bronze), corresponding to different contribution rates and advantages.

The main advantages for the sponsors are :

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- Commercial leaflet distributed with this newsletter
- Free copies of this newsletter and the AIVC CD
- Free participation for sponsor's delegates at the annual AIVC conference
- Free exhibition stand at the annual AIVC conference

Detailed information concerning sponsorship is available on the AIVC-CD  or on the AIVC website (www.aivc.org). A request for further information may also be sent to inive@bbri.be.

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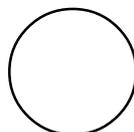
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