

New Programme for Air Infiltration and Ventilation Centre

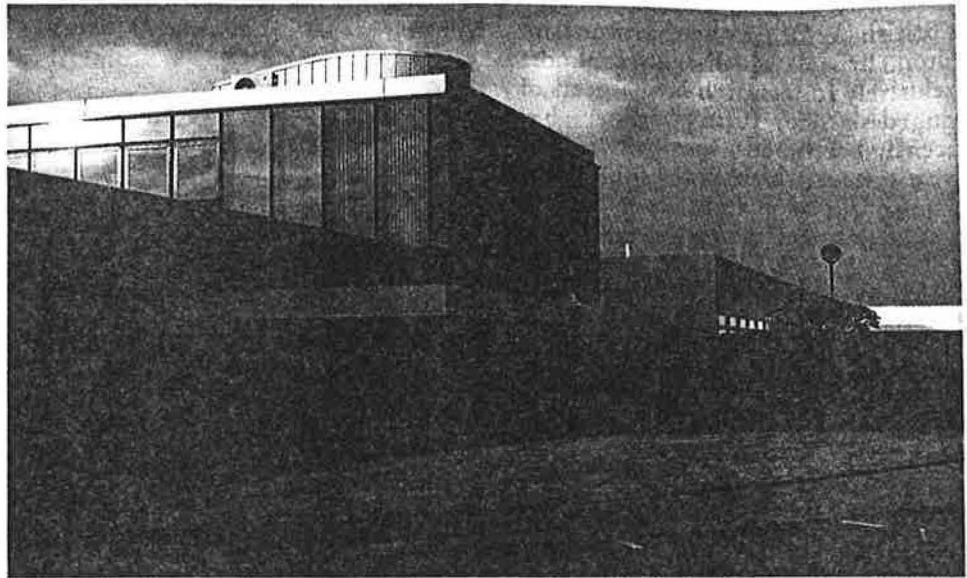
There are opportunities for UK participation in the new programme for the air infiltration and ventilation centre, says its head Martin Liddament. The air infiltration and ventilation Centre offers technical support to researchers and end users engaged in the prediction and measurement of heat loss and air quality due to air exchange in buildings. It also has the task of promoting an understanding of the process of air flow and of advancing the application of energy efficient ventilation measures in both new and existing buildings. This is a vital aspect of building design, since energy use due to ventilation can account for as much as 50 per cent or more of a buildings total space heating or cooling load. On the other hand an inadequate supply of fresh air and/or poor air distribution can cause severe indoor air quality problems.

The Centre, which began as a small jointly funded international energy agency activity in 1979, has now grown considerably in stature and completes its tenth year of operation with support from a total of 13 countries: Belgium, Canada, Denmark, Federal Republic of Germany, Finland, Italy, Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom and the United States of America. It is operated on behalf of the international community by Oscar Faber Consulting Engineers and is located at the University of Warwick Science Park near Coventry.

DATABASE

The hub of the Centre's service is its computerised bibliographic database – AIRBASE, which is available using free text retrieval software. Currently the database contains approximately 3,500 abstracts of technical articles related to infiltration and ventilation. In addition it contains information on current worldwide ventilation and air quality research programmes. The source articles are available from the Centre and a full international technical library service is offered to organisations in participating countries. Use of this service within the United Kingdom is running at its highest ever level, with the AIVC responding to requests for over 1800 publications and library items from a total of 71 commercial organisations, 18 public sector organisations and 32 educational establishments during the past 12 months.

Approximately 500 new articles are added to AIRBASE each year and these are published in a regularly quarterly



The Air Infiltration and Ventilation Centre at Warwick University Science Park.

bulletin entitled *Recent Additions*. A subject analysis of the contents of AIRBASE is also published regularly. Access to the Database is available either directly through the Centre or, by arrangement, through the supply of regularly updated software copies.

Of increasing importance for the dissemination of information is the AIVC's quarterly newsletter *Air Infiltration Review*. Apart from conveying information about the Centre's own activities it contains many technical articles and summaries written by specialists throughout the world. The newsletter also contains information on forthcoming conferences, reviews of recent acquisitions to the Centre's library and an order form for AIVC publications and services. Currently 3500 copies of AIR are distributed quarterly to organisations in 39 countries, making it one of the most widely distributed of international energy agency publications.

WORKSHOPS

Another important function of the Centre is to hold regular workshops and conferences. Specialist workshops have covered such topics as wind induced ventilation, airborne moisture problems and measurement techniques. Conferences have a more general subject coverage and are intended to provide an opportunity to strengthen links between the research and application sectors. In recent years the conference has also provided a focus for related IEA tasks.

The information service is complemented by a full technical programme. Initial work concentrated on a numerical model validation exercise, followed by the publication of a com-

prehensive guide to air infiltration calculation techniques. More recently the Centre has just published a companion measurement techniques guide which provides specific guidance on the use of measurement methods for determining air change rates and air flow patterns in buildings. The technical service is also responsible for publishing brief reviews on subjects of topical interest and it undertakes to respond to technical enquiries.

The International Energy Agency Executive Committee, responsible for the Air Infiltration and Ventilation Centre, has unanimously supported the continuation of the Centre for a further three year period. Furthermore, the success of the project has attracted additional countries to join. As a consequence, the AIVC has secured a substantial contribution from the UK Department of Energy towards continued costs of United Kingdom participation for this three year period. The balance of these UK contributions is being sought throughout the Centre. Three scales of charges are levied for use of the Centre within the United Kingdom:

- *General readership subscription* £50 p.a. (+ 15% VAT)

This is primarily intended for casual users of the Centre. The annual subscription rate entitles users to quarterly issues of *Air Infiltration Review* and to the AIVC's abstracting journal *Recent Additions to Airbase*.

- *Organising membership* £150 p.a. (+ 15% VAT)

This is principally aimed at the main users of the Centre and mirrors the service that most users currently receive. Membership at this grade entitles the user to:

- Air Infiltration Review
- Recent additions to Airbase
- Bibliographic searches
- Literature lists
- Technical notes and other AIVC publications (on request)
- Up to 48 library items each year
- Entitlement to attend AIVC conferences

• **Commercial & industrial sponsorship £1,000 p.a. (+ 15% VAT)**

This is aimed at the major users of the Centre. Participation at this grade entitles the user to the full range of services provided by the Centre.

In addition sponsor benefits include:

- AIRBASE - for running on IBM PC compatible computers.
- Inclusion as sponsoring organisation on AIVC U.K. letterhead.
- Opportunity to sit on the U.K. Advisory Group.
- Entitlement to attend an annual workshop devoted to the AIVC's work programme.



The AIVC publishes a wide range of technical literature.

Further details concerning the activities of the Centre and UK membership rates are available from: Martin Liddament, Head Air Infiltration and Ventilation

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Milton Keynes office building commended by Beta awards

FHP Partnership's new head office in Milton Keynes had been commended by the judges of the 1988 Beta awards for energy efficiency in the East Midlands Electricity region. The building uses five heat pumps and sophisticated zonal control to cater for the varying heating requirements of tenants. The system was installed at a cost of £85,000 less than for a conventional gas boiler and chiller system, and annual savings of about £9,400 are anticipated.

Beech House is an 1800m, three storey office block, part of which houses FHP's headquarters. When the building was designed, flexibility was the chief consideration for building services, because of the unforeseeable thermal and partitioning need in the areas which were to be sub-let to tenants. Coupled with this requirement was the need to keep capital and running costs to a minimum.

Each of five major zones is served by a single, roof-mounted, air-to-air heat pump, reversible to meet heating and cooling duties. To satisfy the different thermal requirements within each zone, a sophisticated, microprocessor-controlled VAV (variable air volume) unit is used, which allows up to eight sub-zones to be served by each heat pump.

Double glazed, sealed windows with reflective solar glass give a very low U value, and there are insulated cavity walls, and economisers for each heat



Beech House where system performance has met all design expectations.

pump. Areas of the building not served by the air conditioning system are heated by slimline electric storage heaters using off-peak electricity, and hot water is provided by a tank with dual, off-peak and on-peak, electric immersion elements.

Most system components are sealed

for life and will therefore incur no maintenance costs.

The FHP Partnership, has been liaising with East Midlands Electricity over the design of another building, also in Milton Keynes, which will be twice the size of Beech House and will use a similar air-conditioning system.

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