INTERNATIONAL ENERGY AGENCY
energy conservation in buildings and community systems programme

Technical Note AIVC 38

AIRGUIDE
Guide to the AIVC's Bibliographic Database

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AIRGUIDE
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Mark Limb

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Preface

International Energy Agency

The International Energy Agency (IEA) was established in 1974 within the framework of the Organisation for Economic Co-operation and Development (OECD) to implement an International Energy Programme. A basic aim of the IEA is to foster co-operation among the twenty-one IEA Participating Countries to increase energy security through energy conservation, development of alternative energy sources and energy research development and demonstration (RD&D). This is achieved in part through a programme of collaborative RD&D consisting of forty-two Implementing Agreements, containing a total of over eighty separate energy RD&D projects. This publication forms one element of this programme.

Energy Conservation in Buildings and Community Systems

The IEA sponsors research and development in a number of areas related to energy. In one of these areas, energy conservation in buildings, the IEA is sponsoring various exercises to predict more accurately the energy use of buildings, including comparison of existing computer programs, building monitoring, comparison of calculation methods, as well as air quality and studies of occupancy. Seventeen countries have elected to participate in this area and have designated contracting parties to the Implementing Agreement covering collaborative research in this area. The designation by governments of a number of private organisations, as well as universities and government laboratories, as contracting parties, has provided a broader range of expertise to tackle the projects in the different technology areas than would have been the case if participation was restricted to governments. The importance of associating industry with government sponsored energy research and development is recognized in the IEA, and every effort is made to encourage this trend.

The Executive Committee

Overall control of the programme is maintained by an Executive Committee, which not only monitors existing projects but identifies new areas where collaborative effort may be beneficial. The Executive Committee ensures that all projects fit into a pre-determined strategy, without unnecessary overlap or duplication but with effective liaison and communication. The Executive Committee has initiated the following projects to date (completed projects are identified by *):

I Load Energy Determination of Buildings*
II Ekistics and Advanced Community Energy Systems*
III Energy Conservation in Residential Buildings*
IV Glasgow Commercial Building Monitoring*

V Air Infiltration and Ventilation Centre
VI Energy Systems and Design of Communities*
VII Local Government Energy Planning*
VIII Inhabitant Behaviour with Regard to Ventilation*
IX Minimum Ventilation Rates*
X Building HVAC Systems Simulation*
XI Energy Auditing*
XII Windows and Fenestration*
XIII Energy Management in Hospitals*
XIV Condensation*
XV Energy Efficiency in Schools*
XVI BEMS - 1: Energy Management Procedures*
XVII BEMS - 2: Evaluation and Emulation Techniques
XVIII Demand Controlled Ventilating Systems*
XIX Low Slope Roof Systems
XX Air Flow Patterns within Buildings*
XXI Thermal Modelling
XXII Energy Efficient Communities
XXIII Multizone Air Flow Modelling (COMIS)
XXIV Heat Air and Moisture Transfer in Envelopes
XXV Real Time HEVAC Simulation
XXVI Energy Efficient Ventilation of Large Enclosures

Annex V Air Infiltration and Ventilation Centre

The IEA Executive Committee (Building and Community Systems) has highlighted areas where the level of knowledge is unsatisfactory and there was unanimous aggreement that infiltration was the area about which least was known. An infiltration group was formed drawing experts from most progressive countries, their long term aim to encourage joint international research and increase the world pool of knowledge on infiltration and ventilation. Much valuable but sporadic and uncoordinated research was already taking place and after some initial groundwork the experts group recommended to their executive the formation of an Air Infiltration and Ventilation Centre. This recommendation was accepted and proposals for its establishment were invited internationally.

The aims of the Centre are the standardisation of techniques, the validation of models, the catalogue and transfer of information, and the encouragement of research. It is intended to be a review body for current world research, to ensure full dissemination of this research and based on a knowledge of work already done to give direction and firm basis for future research in the Participating Countries.

The Participants in this task are Belgium, Canada, Denmark, Germany, Finland, France, Italy, Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom and the United States of America.

AIRBASE - Now for your PC

AIRBASE, the Air Infiltration and Ventilation Centre's bibliographical database, is now available in a PC version. The software is menu driven and is exceptionally straightforward to use. Starting with either a single multiple or hyphenated search term, for example, energy, energy conservation or even demand-controlled ventilation, the computer develops a retrieved list of all entries containing the term(s). The search may then be systematically narrowed or widened using the appropriate function key and by selecting additional terms.

AIRBASE contains articles related to air infiltration and ventilation. In addition to articles scanned from journals, it also contains references of specialist reports, such as written documents and internal publications from sources worldwide. In total the topics covered by AIRBASE may be subdivided into nearly 200 subject areas, with broad themes covering energy aspects, indoor air quality, occupancy effects, ventilation strategies, theory calculation and measurement techniques and case studies.

The software contains other useful databases which operate along side AIRBASE, one such database, is the AIVC's Survey of Current Research into Air Infiltration, Ventilation and Indoor Air Quality. This database contains information about projects that are currently underway around the world, this database is updated yearly so the information is as current as possible.

THE AIVC's LIBRARY SERVICE

Every item referenced in AIRBASE, is available from the centre's library service and may be requested by completing a literature request form, *(See Appendix A)*. The AIRBASE search service continues to be available and the centre's staff will be pleased to conduct your search for you either on-line by telephone, or by fax or letter.

1. Before you start.....

Welcome to AIRBASE - The Air Infiltration and Ventilation Centre's database on IDEALIST software.

You should have received:

- An Installation diskette

- AIRBASE in compressed format, backed up using MS DOS onto either 3 1/2" or 5 1/4" diskettes.

- AIRGUIDE - A copy of the AIVC'S user guide to AIRBASE on Idealist software.

2. Installation Procedure

To Install AIRBASE

(i). Insert the installation disk into either disk drive A or B.

(ii). Make this drive the active drive by typing A: or B: at the DOS prompt, press *<Enter>*

(iii). At the DOS prompt (A:\> or B:\>) type Install *X Y*.

Where *X* is the drive you are installing from, and *Y* is the hard disk drive you are installing to. There are no need for colons (:) after the drive definitions.

Example 1) To install from disk drive A to hard disk C, type...

A:\>INSTALL A C *<Enter>*

Example 2) To install AIRBASE from disk drive B to hard disk E, type...

B:\>INSTALL B E *<Enter>*

NOTE: The first drive specified is the floppy disk drive (either A or B). The second drive specified is the HARD Disk drive you wish AIRBASE to reside on (C,D,E,F etc.).

(iv). AIRBASE will then be installed onto the specified Hard disk (C,D,E,F etc), and in a directory called AIRBASE.

The Installation file will prompt you for the first and further diskettes until AIRBASE is completely installed, then will ask you to insert the disk with the **batch file** again (the INSTALLATION disk), and press *<Enter>*.

3. How to Enter AIRBASE

Once the installation procedure has been completed AIRBASE can be entered by typing AIRBASE <*Enter*> at the DOS prompt.
(i.e. **C:\AIRBASE>AIRBASE** <*Enter*>. The screen will change, as indicated below, enter the number that corresponds to the database you wish to access and press <*Enter*> again. The example used throughout this manual is AIRBASE.

After exiting from the database you will return to this menu, enter the number of the next database you wish to use or zero to leave the menu and return to DOS.

THE AIR INFILTRATION AND VENTILATION CENTRE

Welcome to the AIVC's suite of Databases

1 AIRBASE

2 SURVEY91

3 AIRGLOSS

0 EXIT

Enter the number of the Database you wish

to open, and press <*Enter*>?

Figure 1

The screen will change to reveal the contents of the previous HIT LIST (or Found List), as indicated and explained in figure 2, overleaf. The basic format for the AIRBASE suite of databases is the same, only varying slightly according to the nature of information contained within each database. Idealist is menu driven, and is exceptionally straight forward to use. At the top of the screen several drop-down menus are available.

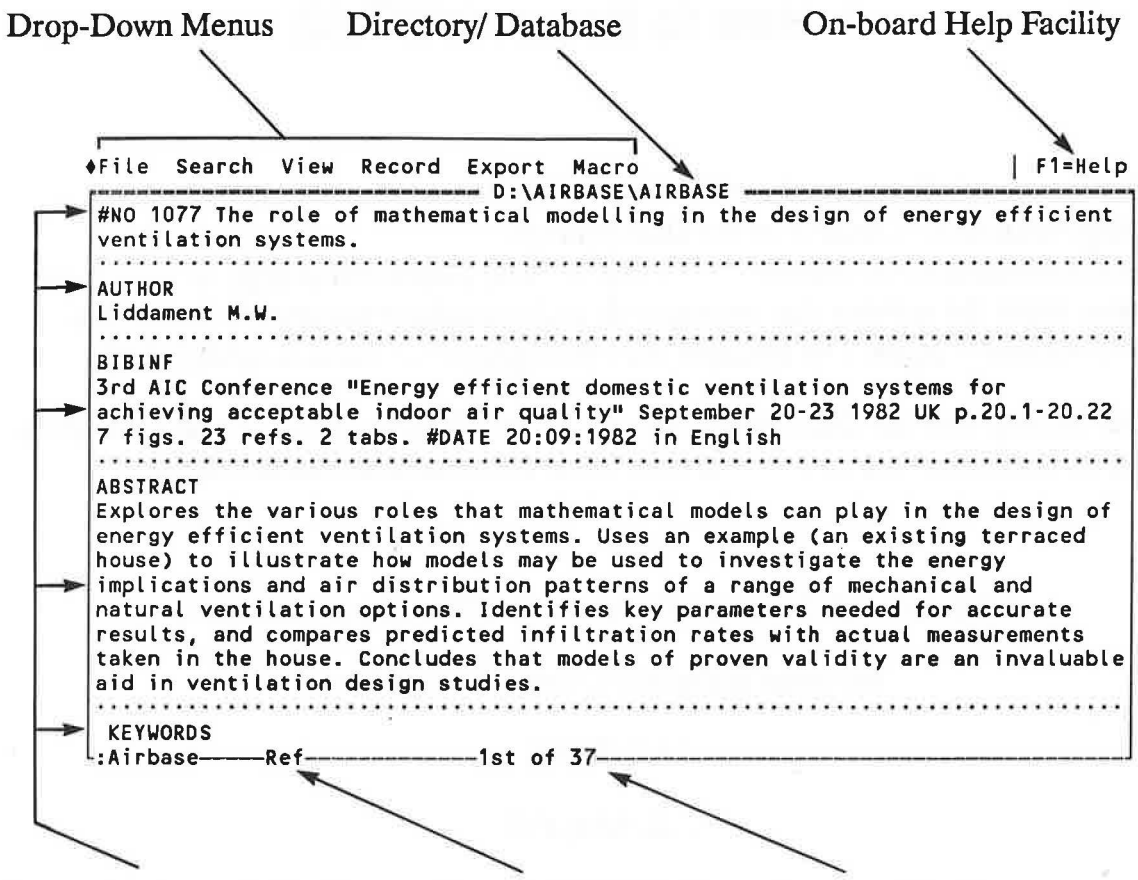
Drop-Down Menus
Directory/ Database
On-board Help Facility
♦File Search View Record Export Macro
| F1=Help
D:\AIRBASE\AIRBASE
#NO 1077 The role of mathematical modelling in the design of energy efficient ventilation systems.
AUTHOR
Liddament M.W.
BIBINF
3rd AIC Conference "Energy efficient domestic ventilation systems for achieving acceptable indoor air quality" September 20-23 1982 UK p.20.1-20.22 7 figs. 23 refs. 2 tabs. #DATE 20:09:1982 in English
ABSTRACT
Explores the various roles that mathematical models can play in the design of energy efficient ventilation systems. Uses an example (an existing terraced house) to illustrate how models may be used to investigate the energy implications and air distribution patterns of a range of mechanical and natural ventilation options. Identifies key parameters needed for accurate results, and compares predicted infiltration rates with actual measurements taken in the house. Concludes that models of proven validity are an invaluable aid in ventilation design studies.
KEYWORDS
:Airbase Ref 1st of 37
Screen has been divided into Key fields - Ref, Author, Bibinf,Abstract and Keywords.
Database Key Field Identification
Previous Hit List or Found List

Figure 2 (a)

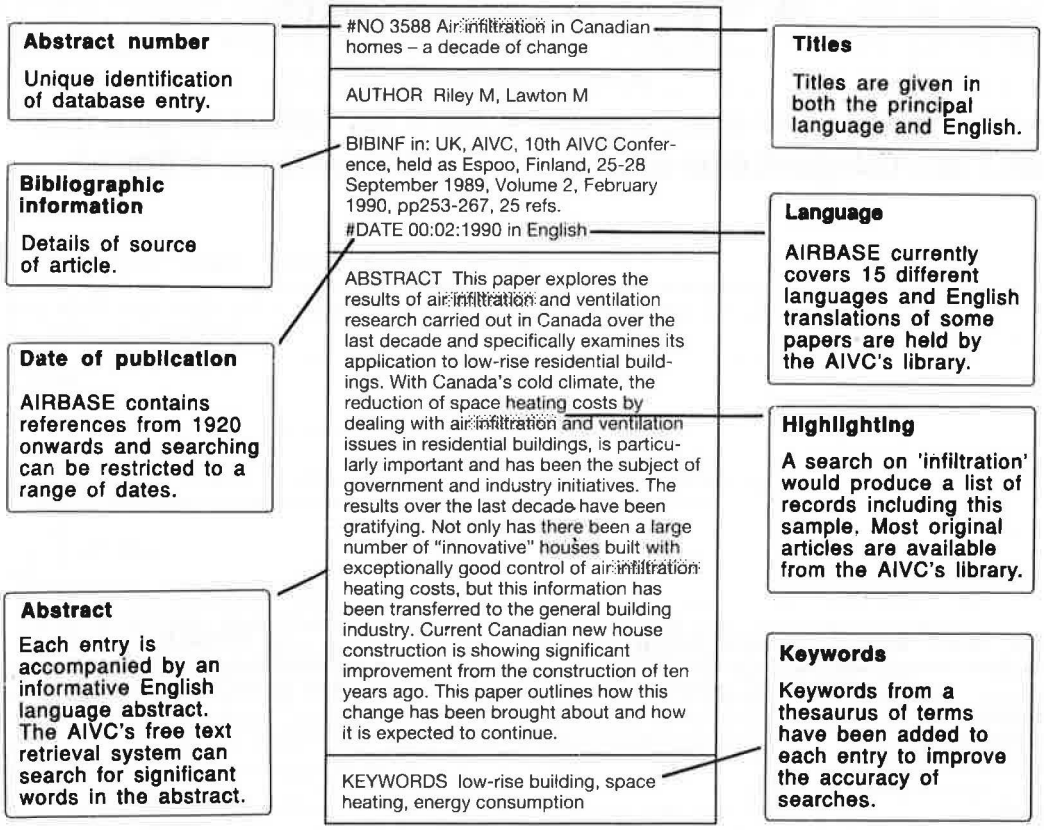
Abstract number
Unique identification of database entry.
Bibliographic information
Details of source of article.
Date of publication
AIRBASE contains references from 1920 onwards and searching can be restricted to a range of dates.
Abstract
Each entry is accompanied by an informative English language abstract. The AIVC's free text retrieval system can search for significant words in the abstract.
#NO 3588 Air infiltration in Canadian homes – a decade of change
AUTHOR Riley M, Lawton M
BIBINF in: UK, AIVC, 10th AIVC Conference, held as Espoo, Finland, 25-28 September 1989, Volume 2, February 1990, pp253-267, 25 refs.
#DATE 00:02:1990 in English
ABSTRACT This paper explores the results of air infiltration and ventilation research carried out in Canada over the last decade and specifically examines its application to low-rise residential buildings. With Canada's cold climate, the reduction of space heating costs by dealing with air infiltration and ventilation issues in residential buildings, is particularly important and has been the subject of government and industry initiatives. The results over the last decade have been gratifying. Not only has there been a large number of "innovative" houses built with exceptionally good control of air infiltration heating costs, but this information has been transferred to the general building industry. Current Canadian new house construction is showing significant improvement from the construction of ten years ago. This paper outlines how this change has been brought about and how it is expected to continue.
KEYWORDS low-rise building, space heating, energy consumption
Titles
Titles are given in both the principal language and English.
Language
AIRBASE currently covers 15 different languages and English translations of some papers are held by the AIVC's library.
Highlighting
A search on 'infiltration' would produce a list of records including this sample. Most original articles are available from the AIVC's library.
Keywords
Keywords from a thesaurus of terms have been added to each entry to improve the accuracy of searches.

Figure 2 (b)

(I) To perform a simple search.

To enter the search drop-down menu, press the *<ALT>* key while at the same time selecting the S key. The search drop-down menu will appear, as shown in figure 3 below.

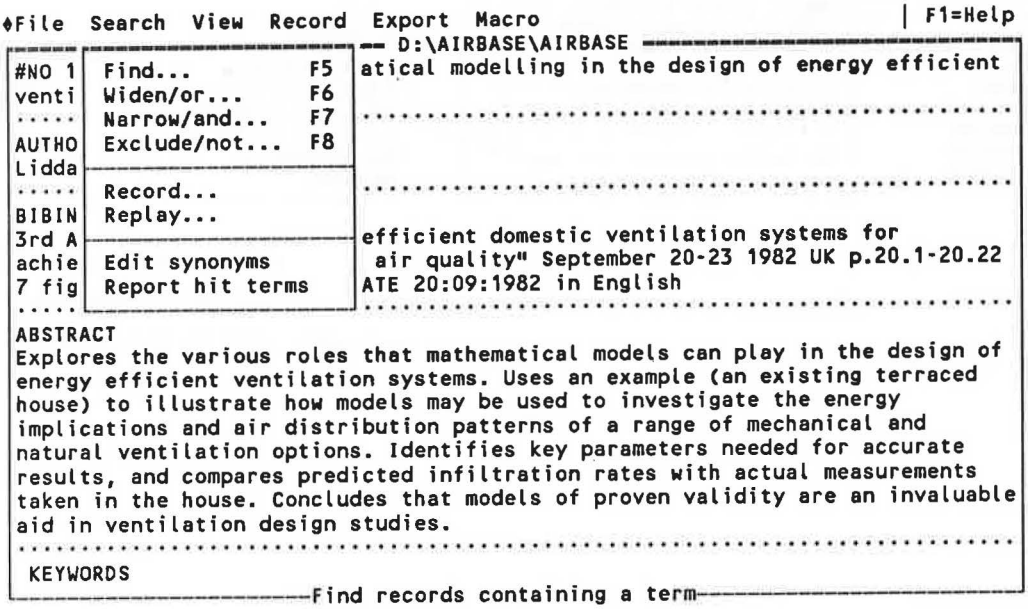

Figure 3

Using the drop-down menu, and either the arrow curser keys or mouse if installed, highlight and select the **FIND** option. This option must be selected before any of the other options can be activated, including the **WIDEN** and **NARROW** options.

To use the mouse centre the curser over the find option and select using the mouse keys.

To select using the arrow keys simply move the highlighted bar up or down until the desired function is highlighted then press *<Enter>*.

When you become more familiar with AIRBASE the function keys can be used directly instead of entering the drop-down menus first.

Idealist will then prompt you to identify a search term, as shown in figures 4(a) and 4(b). Single and multi word searching can be performed by entering the word or words into the pop-up dialogue box that appears in the centre of the screen.

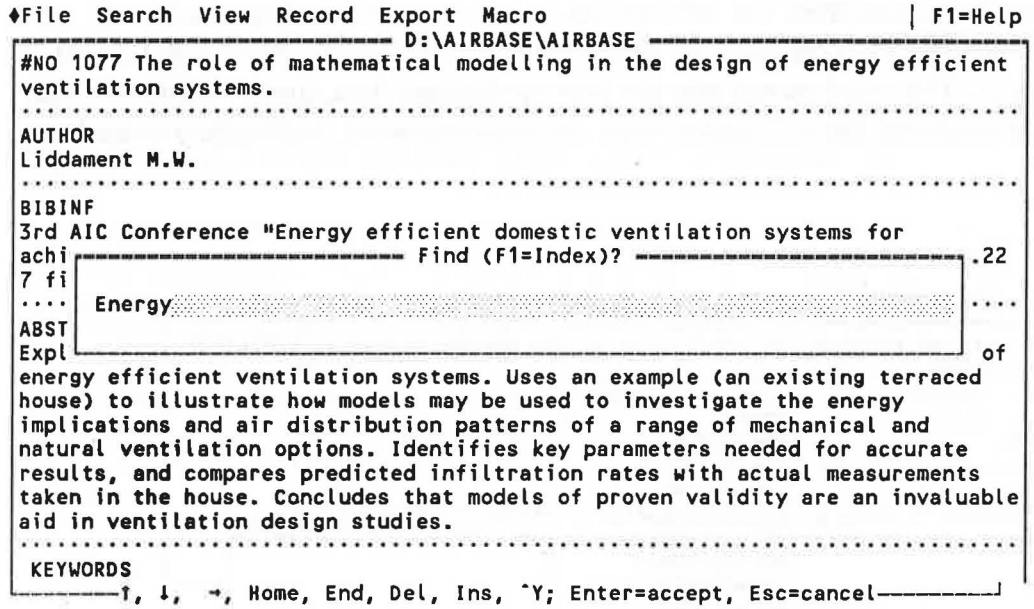

Figure 4(a)

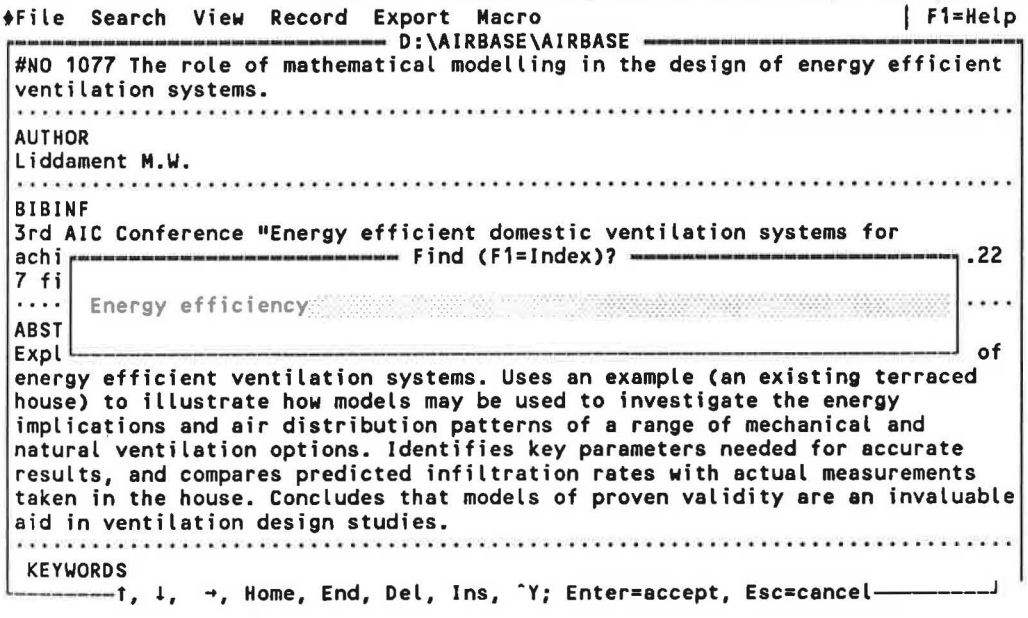

Figure 4(b)

A further feature of the multi word search facility enables Hyphenated words such as Demand-Controlled to be included.

An alternative to entering a search term via the key board is to chose a word from the Index list. By pressing the *<F1>* function key while the Find dialogue box is in the centre of the screen allows the you to view the indexed words can be viewed.

Any word can be chosen from the indexed list, by using the arrow keys on the keyboard the list can be scrolled up or down, when the required word is highlighted press *<Enter>*. The word moves into the pop-up dialogue box, press *<Enter>* once again and the retrieved list will appear with the searched word, highlighted in each record.

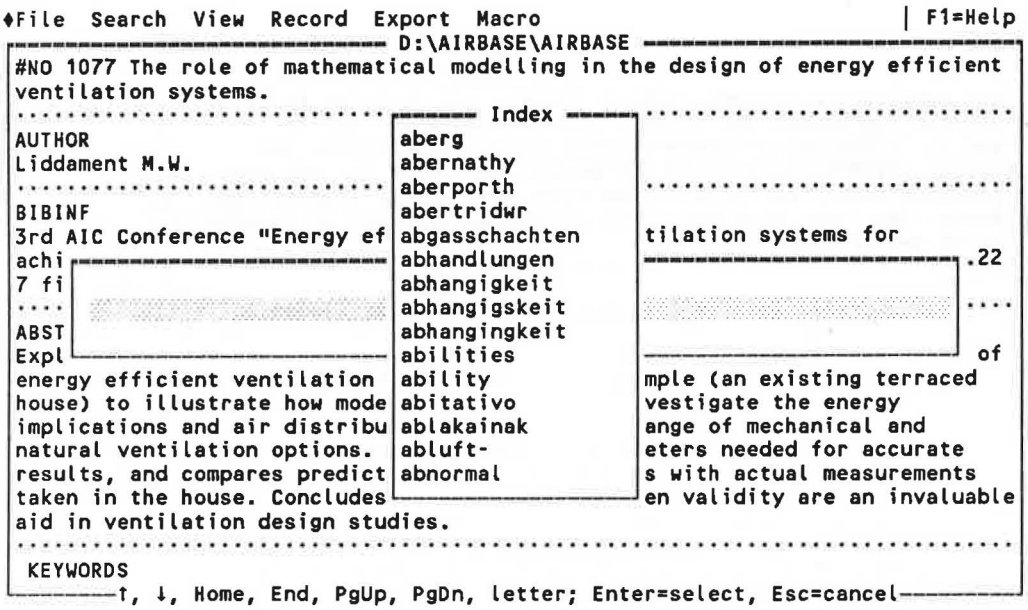

Figure 5(a)

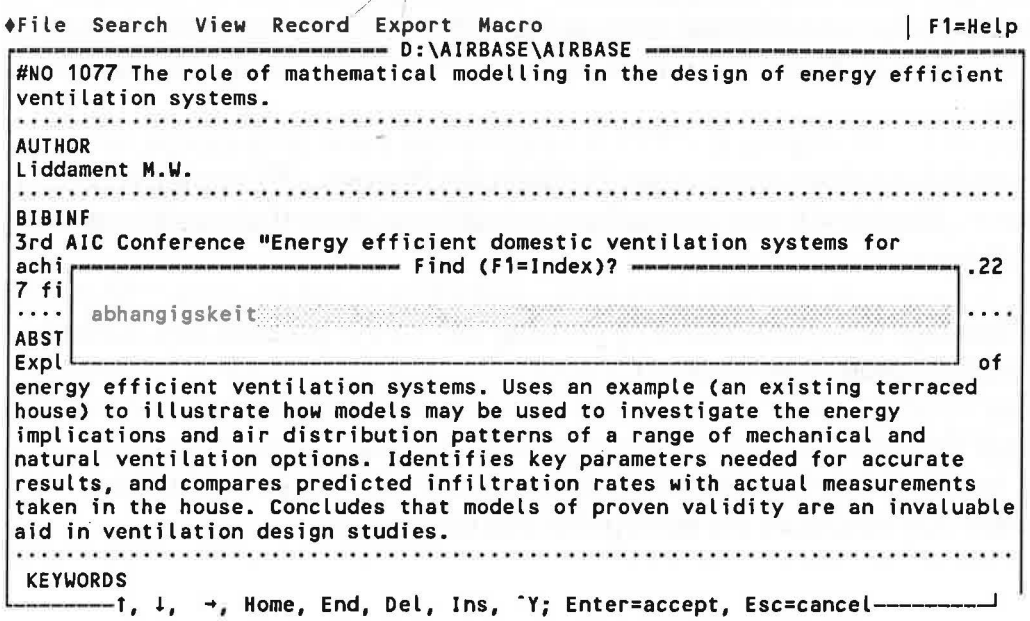
♦File Search View Record Export Macro | F1=Help
D:\AIRBASE\AIRBASE
#NO 1077 The role of mathematical modelling in the design of energy efficient ventilation systems.
AUTHOR
Liddament M.W.
BIBINF
3rd AIC Conference "Energy efficient domestic ventilation systems for
achi
Find (F1=Index)?
.22
7 fi
abhangigskeit
....
ABST
Expl
of
energy efficient ventilation systems. Uses an example (an existing terraced house) to illustrate how models may be used to investigate the energy implications and air distribution patterns of a range of mechanical and natural ventilation options. Identifies key parameters needed for accurate results, and compares predicted infiltration rates with actual measurements taken in the house. Concludes that models of proven validity are an invaluable aid in ventilation design studies.
KEYWORDS
↑, ↓, →, Home, End, Del, Ins, ^Y; Enter=accept, Esc=cancel

Figure 5(b)

(II) To Narrow a search.

Once the initial search has been performed, it may contain too many abstracts relevant to the general search term(s). If the To Narrow option is chosen the found list will be searched for an additional term, and the abstracts uncovered will then form the new found list. Those that do not contain the term will be dropped from the new found list.

Enter the Search drop-down menu again, highlight the **Narrow.....F7** option, and press <*Enter*>. Idealist will prompt you for a search term, enter the search term(s) and press <*Enter*>.

The pop-up dialouge box can be called by pressing the <*F7*> function key, instead of entering the Search drop-down menu.

For example, if the original search term was pollutants, but radon was of specific importance, by narrowing the search the resulting list would then contain those articles that not only contained the word pollutants but also radon.

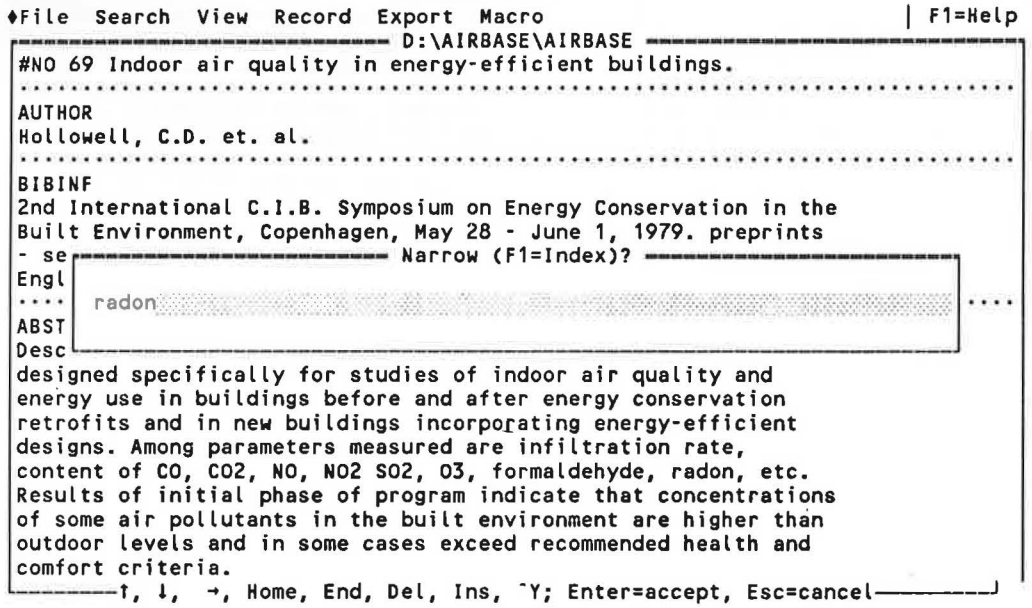

Figure 6

A review of the indexed words of AIRBASE by pressing <*F1*> while the pop-up dialouge box is in the centre of the screen is also available with the Narrow and Widen Options, as well as the multi and hyphenated word searching facilities.

(III) To Widen a search.

Once the initial search has been performed, it may contain too few abstracts relevant to the general search term(s). If the To Widen option is chosen the rest of the database will be searched for an additional term, and the abstracts uncovered will be added to the original found list.

Enter the Search drop-down menu again (*<ALT>* S), highlight the **Widen.....F6** option, and press *<Enter>*. Idealist will prompt you for a search term or terms, enter the desired search term(s) in to the dialogue box and press *<Enter>*.

The *<F6>* function key can alternatively be used to access the pop-up dialogue box.

For example, if the original search term was pollutants, but Indoor Air Quality was the general topic, by Widening the search the resulting list would then contain those articles that not only contained the word pollutants but also Indoor Air Quality.

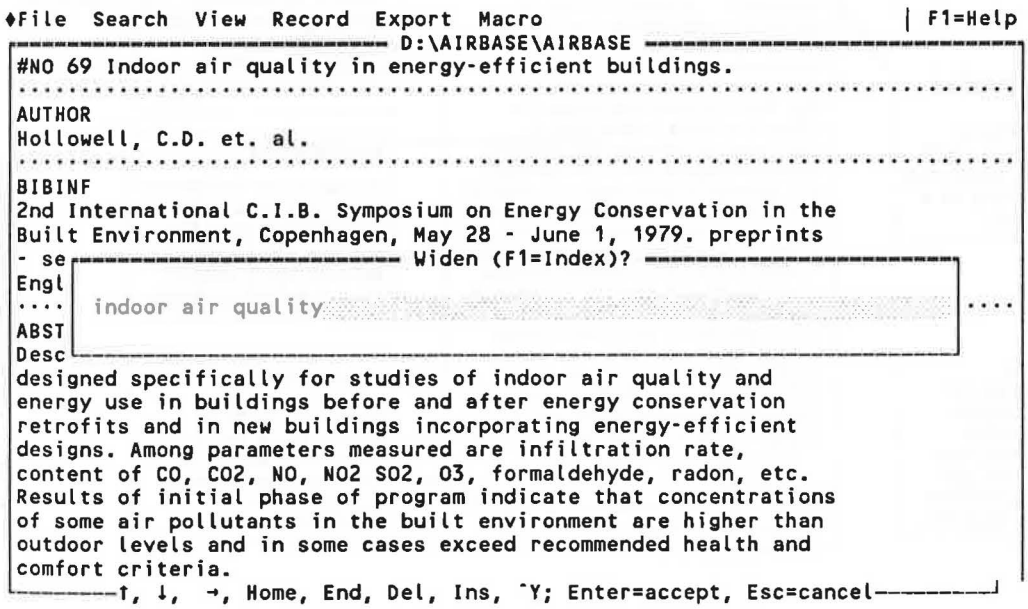

Figure 7

A review of the indexed words of AIRBASE by pressing *<F1>* while the pop-up dialouge box is in the centre of the screen is also available with the Narrow and Widen Options, as well as the multi and hyphenated word searching facilities.

(IV) To search specified KEY FIELDS.

AIRBASE records have been separated into key fields (**REF**erence; **AUTHOR; BIBINF; ABSTRACT** and **KEYWORDS**), to allow key field searching. This facility allows individual fields to be searched independently, resulting in a more accurate search. While this facility is available, free text searching still remains an option.

The example in figure 8 (a,b), shows the format of the field separation, and how searching a specific field is achieved. This option is available with all the other databases provided alongside AIRBASE, although the key field names may vary. *(See Appendix B for a list of the key field names)*. These can alternatively be seen in the status line at the bottom of the screen, as the curser moves up and down the abstract.

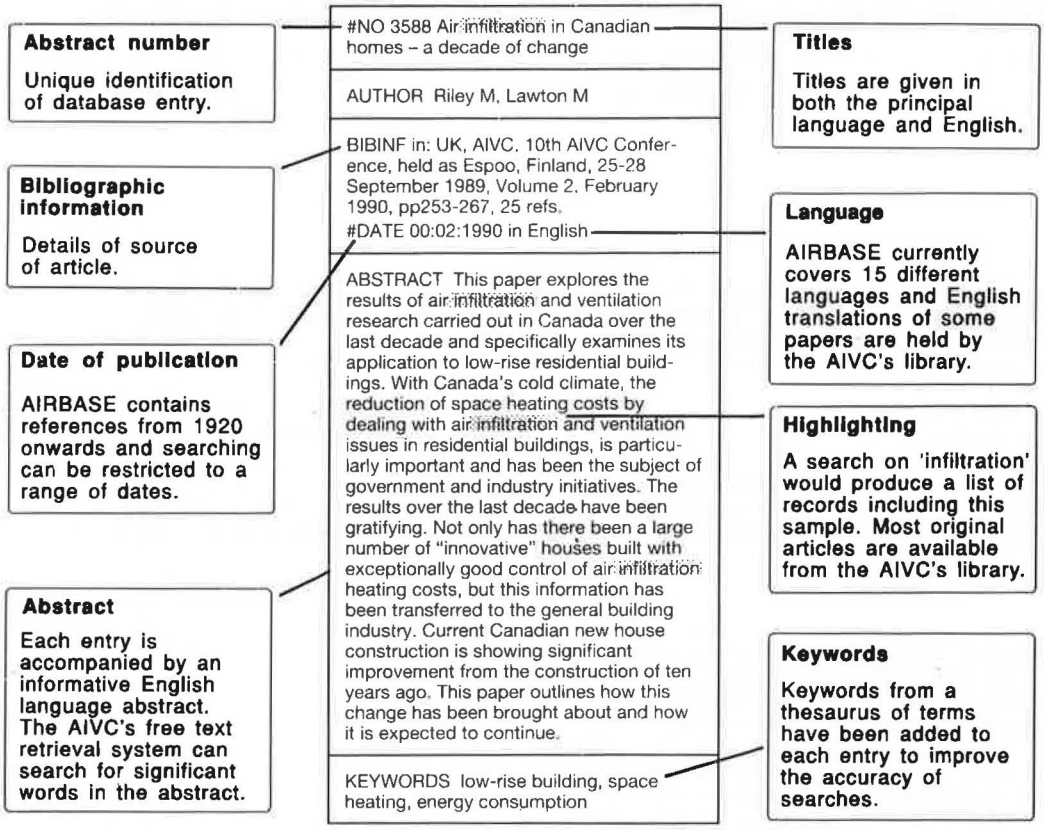

Figure 8(a)

To search a specific field activate one of the Find, Narrow or Widen options, and when prompted for a search term enter the field you wish to confine your search to, followed by a equals sign (=) and then by the term or terms. There must be no spaces between the characters. Then press *<Enter>*. Searching will commence in the usual way.

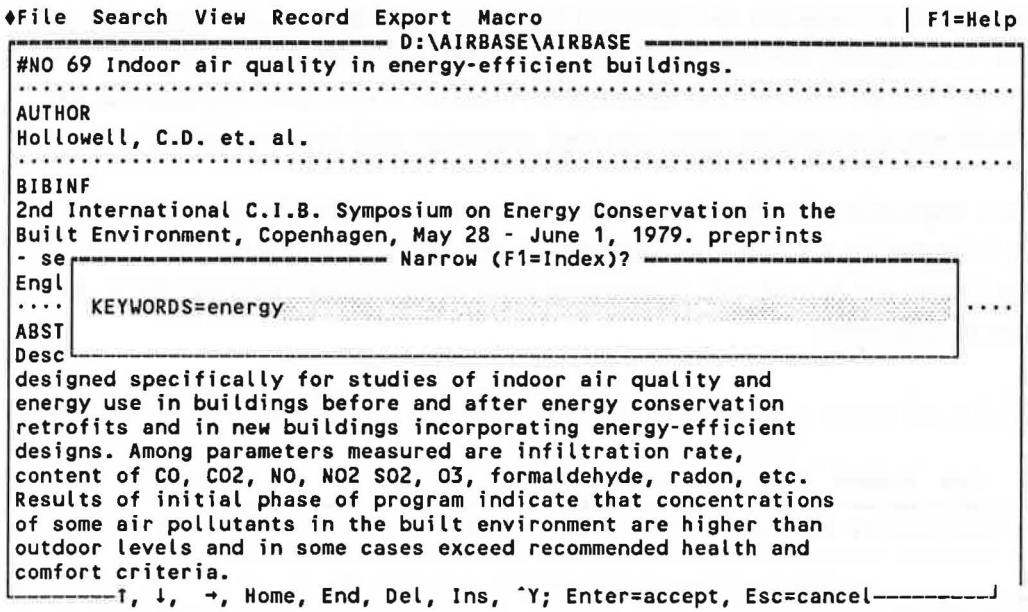
♦File Search View Record Export Macro | F1=Help
D:\AIRBASE\AIRBASE
#NO 69 Indoor air quality in energy-efficient buildings.
AUTHOR
Hollowell, C.D. et. al.
BIBINF
2nd International C.I.B. Symposium on Energy Conservation in the
Built Environment, Copenhagen, May 28 - June 1, 1979. preprints
- se
Engl
Narrow (F1=Index)?
KEYWORDS=energy
ABST
Desc
designed specifically for studies of indoor air quality and
energy use in buildings before and after energy conservation
retrofits and in new buildings incorporating energy-efficient
designs. Among parameters measured are infiltration rate,
content of CO, CO2, NO, NO2 SO2, O3, formaldehyde, radon, etc.
Results of initial phase of program indicate that concentrations
of some air pollutants in the built environment are higher than
outdoor levels and in some cases exceed recommended health and
comfort criteria.
↑, ↓, →, Home, End, Del, Ins, ^Y; Enter=accept, Esc=cancel

Figure 8(b)

(V) Searching using the ROOT EXPANDER

The ROOT EXPANDER (*) can be used to expand a search term to cover most derivations of that term. Where words are referenced under several words, such as compute; computer; computed, etc. the root expander can be used, to locate all similar words. This facility can be used when widening and narrowing as well as during the initial search. However it can only be used for single and hyphenated word searching. Multi-word searching using the root expander will retrieve no records.

To use the root expander simply enter the search term or part of the term immediately followed by an asterisk (*), as indicated in the example below. Then press <*Enter*> and the search will commence incorporating the required term, and all derivatives of that term.

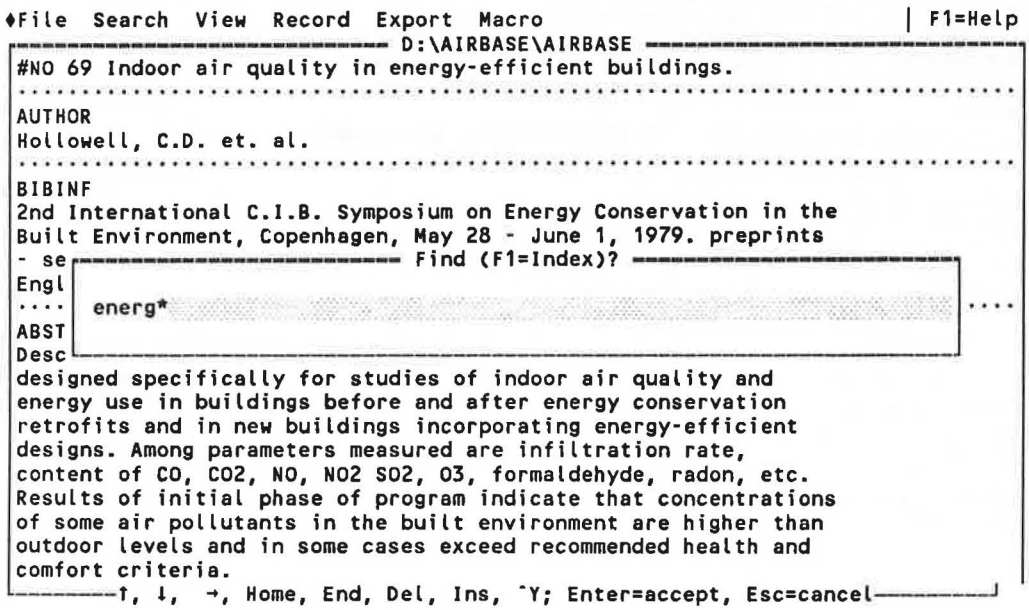

Figure 9

(VI) Fuzzy searching

Fuzzy searching will scan the entire database for words which sound like or are lexically similar to the term you specify in the search command. Fuzzy searching is triggered by enclosing the term in double quotes. This facility is available with single, multi and hyphenated word searches. The following example illustrates this.

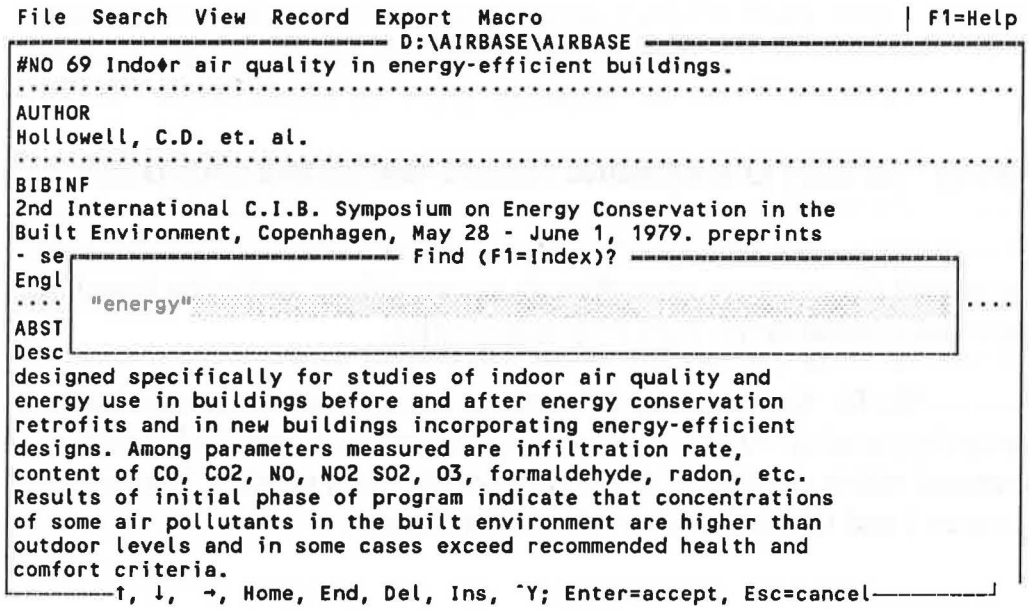

Figure 10

This is a very useful feature when searching for names or possible mis-spellings, although it is rather slow when compared to direct searching for simple terms. Fuzzy searching can be combined with wild card searching, for example "energ*" could be a valid search term.

(VII) To Scan the found list

After the initial search *(Activated by the Find option)*, AIRBASE will have found a number of articles that contain the required search term. This is the found list. To scan this list use the < + > and <-> keys located in the numeric key pad to move forwards or backwards through the found list.

(a) **< + >** Scans the found list in a clockwise direction (Forwards).

(b) **<->** Scans the found list in an anti clockwise direction (Backwards).

(VIII) To GOTO a specific record within the found list.

The Go To command allows you to move directly to a specific record in the found list. The goto command is found in the View drop-down menu.

<ALT> V.....**Go To.** Scan the drop down menu using the arrow keys and select the Go To option by pressing *<Enter>* or by using the mouse. Enter the location of the required record within the found list, not the records' Hash number. The number should be between 1 and the total number of records found.

(IX) Dropping Records from the found list.

As the found list is scanned, records can be dropped if they are not relevant. This can be achieved in three ways.

(1) *<F8>*.....**Exclude/Not.** By pressing the *<F8>* function key or by entering the Search drop-down menu *<ALT>* S and selecting the Exclude function. This function selectively drops those records that CONTAIN a given term, to be decided by the user.

(2) By entering the Record drop-down menu *<ALT>* R and selecting the **Drop** facility the particular record on the screen will be dropped.

(3) A selection of records can be marked, as the records are scanned. To mark a record enter the Record Drop-down menu, *<ALT>* R and select the mark option. The drop down menu will disappear and the record on the screen will be marked. This will be indicated in the Status line at the bottom of the screen.

To drop records, re-enter the Record Drop-down menu *<ALT>* R and either select to drop all of the Marked records, or alternatively drop all of the Unmarked records. Select the desired action using the arrow keys and pressing *<Enter>*, or by using the mouse.

Dropped records are not deleted from the database, only dropped from the found list.

(X) Recording a search.

Selecting this option, will save all of the search terms incorporated in a complicated search, including FIND, WIDEN and NARROW options etc.

To use this function enter the search drop-down menu *<ALT>* S, and select the record search option before performing your search.

When prompted for a file name to store the search in, enter the desired file name into the dialogue box in the centre of the screen. This must be a new name or you will be advised that the file already exists and asked if you wish to Append (A) it or Overwrite (O) it. The specified file will appear in the AIRBASE directory, and will have the suffix SCH to signify a recorded search file. (For example ENERGY.SCH)

Once you have selected the file name, press *<Enter>*. You may now perform your search, including Find, Widen, Narrow, and Drop, in fact any of the commands normally available. To de-activate the recorded search mode, enter the Search drop-down menu again and select the record search option again. The little tick now beside the option will disappear.

If a search is complicated or one that is used frequently it may be recorded before entering AIRBASE. This is done by using the built in editor, *(TED.EXE)* as shown in the example below:

(1) C:>\CD\AIRBASE

(2) C:\>AIRBASE\ED ?????.SCH

NOTE .....?????.SCH can be any name chosen by the user, but must be suffixed by .SCH

Each line of the file should contain a search term, which is prefixed by a character shown below, to define its function.

FIND.....? (Question mark)
WIDEN.....| (Split line)
NARROW.....& (Ampersand)
SELECTIVE DROP.....^ (Caret)

No space should appear between the search character and the search term, an example is given below.

?building
|school
&absenteeism
^USA

(3) <*Ctrl*> K D (^KD) saves the file ?????.SCH

To execute the search select the REPLAY.....option as you would to replay a normal recorded search.

(XI) REPLAYING a recorded search.

The recorded search may be replayed by activating the replay option. Select the Replay function, a pop-up dialogue box will appear in the centre of the screen, this identifies the directory the recorded search is stored in. Press <*Enter*> for the default directory. A list of available searches will appear,(those files suffixed by .SCH) select the required search by pressing <*Enter*> or using the mouse. The recorded search will be replayed.

(XII) Overviewing a found list

This facility enables a specified key field of records within the found list to be viewed at the same time. To evoke this facility enter the View drop-down menu, and select the Overview facility, either by using the mouse of arrow keys.

A pop-up dialogue box will appear in the centre of the screen, enter the key field you wish to view and press <*Enter*>, If you do not specify a key field the default will be assumed and the first 39 characters of the Ref field will appear in a next pop-up dialogue box. This list can be scrolled up and down using the Arrow keys on the Numeric keypad.

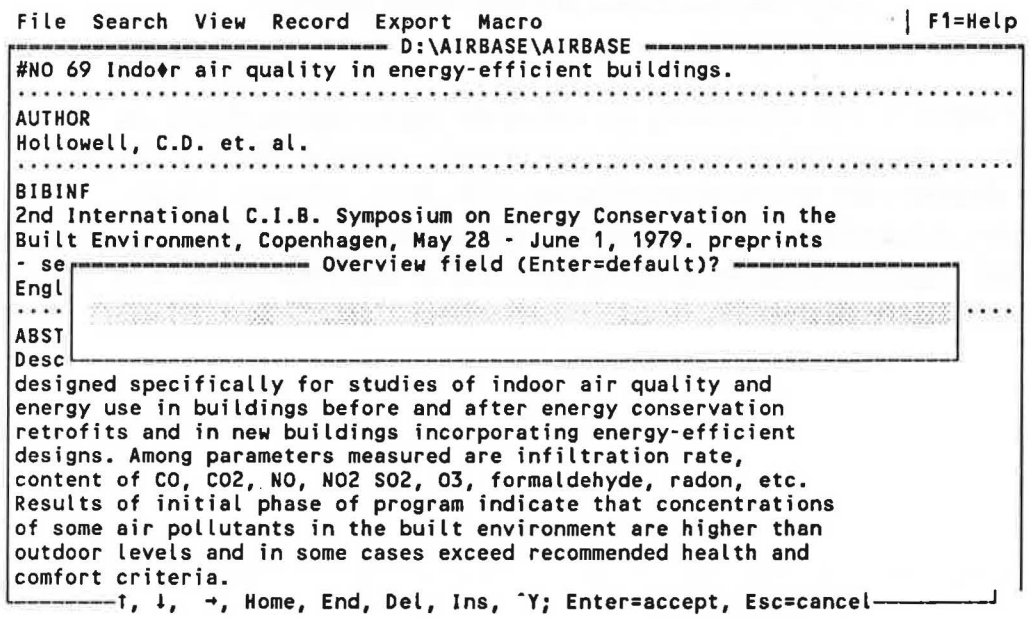

Figure 11 (a)

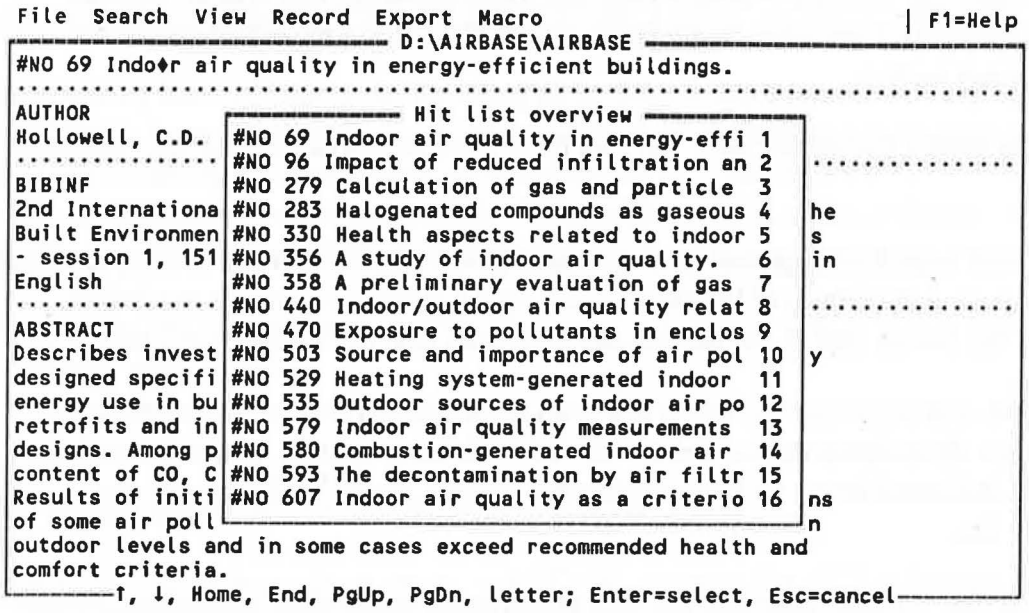

Figure 11 (b)

In the AIRBASE database the Ref key field is the default, since the structure of the data means that the Title and Hash number are overviewed. If another field is specified, only AUTHOR, or KEYWORDS will appear in the second pop-up dialogue box. Due to the present structure of the database this facility is of little value in overviewing most key fields.

(XIII) Sorting records in the found list.

This feature is activated by entering the View drop-down menu (<*ALT*> V), and selecting the Sort option. The sort command allows you to sort the records in the found list according to the details contained within a specified key field.

A dialogue box will appear once the sort function has been selected. Enter the key field you wish to sort the records by, for example, Ref sorts the records in Numeric order, according to the hash number. While Author will sort the records in alphabetic order according to the Authors name. Enter the key field, press <*Enter*> and the records will be sorted.

(XIV) Cross Reference searching

This facility allows specified words to be cross referenced with the entire database. To activate this facility, centre the cursor over the specified word, (such as an authors name) and enter the View drop down menu (*<ALT>* V) highlight and select the Cross-reference facility.

Alternatively centre the cursor over the specified word and press the *<F9>* function key.

The performed search will appear on the screen. The Cross referenced facility can be performed up to a maximum of 99 times. Each time a cross reference is made it is recorded in the Status line at the bottom of the screen (i.e. Level 1, Level 2 etc).

To **Back-track** and return to the initial searches or previous cross referenced levels, enter the View drop down menu, and select the Back track option. You will return to the previous indicated level, or if only one cross reference was performed to the initial found list.

Alternatively the *<F10>* function key will perform the back track operation, instead of entering the View drop-down menu.

(XV) Using Macros

The Macros facility allows keystrokes to be recorded and assigned to a letter or Function key, so when they are pressed the recorded macro will be replayed. Recorded macros are stored in the file **MACRO.LST** in the AIRBASE directory.

This facility can be is useful by allowing all of your own publications contained within AIRBASE to be accessed by pressing one key, or by recording a complicated search that is constantly being repeated, by pressing one key the search can be replayed and the relevant records retrieved quickly. This facility is similar to the Record Search and Replay facility contained within the Search drop-down menu.

To activate this facility enter the Macro drop-down menu <*ALT*> M where three options are available:

(a) To Run a previously recorded Marco <*F3*>

Enter the Macro drop-down menu <*ALT*> M, or press the <F3> function key. A pop-up dialogue box will appear in the centre of the screen. Enter the required macro and press <*Enter*>. To obtain a list of saved macros, simply enter a question mark (?) in the dialogue box and press <*Enter*>. A list of saved macros will appear in the centre of the screen, highlight and select the required marco. It will then run automatically.

(b) To Record a macro.

Enter the Marco Drop-down menu <*ALT*> M, (using the mouse or arrow keys), select the record function. The pop-up menu will disappear.

Perform your search, for example, press the <*F5*> function key, enter the desired search term into the dialogue box, e.g. Liddament. Re-enter the MARCO drop down menu using the mouse and re-select the record function, the little tick now disappears. You will be asked to specify a key or word that will initiate the search. Enter the required Key such as <*Ctrl*> <*F2*> or just <*F2*> to save the macro.

Note the specified key should appear between two brackets <...>

Once the specified key is activated while in AIRBASE the recorded search will be performed.

(c) To Edit a macro

To Edit the Marco.lst file simply enter the Marco drop-down menu select the Edit function, which will automatically evoke the TED.EXE editor.

Press *<Enter>* and the file Marco.lst will appear on the screen. You can now proceed to edit the file. To save any edits, simply press the Escape key and then *<Enter>*.

The file will save and return to AIRBASE automatically.

4. How to Export a search to a printer.

(i) To change the Printer Drivers.

The AIRBASE software comes with **Epson compatible, Postscript and HP Laser-Jet** printer drivers.

(1) AIRBASE is supplied with an EPSON compatible printer driver by default. If you have a LASER printer or postscript printer, the default will not print correctly.

(2) To change the printer driver evoke the TED editor supplied with Idealist, While in the AIRBASE directory. **(C:\AIRBASE > TED IDEALIST.INI)**

WARNING - BEFORE ATTEMPTING TO EDIT THIS FILE MAKE SEVERAL COPIES

(i.e., C:\AIRBASE > Copy Idealist.ini oranges.ini <*Enter*>)

Enter the AIRBASE directory, (C:\ > CD\AIRBASE <*Enter*>)

Evoke the editor, and specify the file to be edited (Idealist.ini)
(C:\ > TED IDEALIST.INI <*Enter*>)

Press <*Enter*> again and you are now free to edit this file. (Make sure you have copied it before attempting to edit it).

To change the specified printer driver add semi-colons (;) before each line of the active printer driver, this deactivates that printer.

Remove any semi colons at the beginning of the printer driver command lines you now wish to activate.

```
TermChars    =  #0123456789

; PostScript
;Printer=PostScript
;FN=AvantGarde-Demi;
;FS=12;
;LM=60;
;MT=40;
;MB=40;

; IBM QuietWriter III
PrinterOn  =  27 58 27 67 9
;page length in lines is 27 67 n

; HP-LaserJet series 2 (NOT 2 Plus)
;Printer=Line
;PrinterOn=
;PrinterOff=
;BoldOn=27, 40, 115, 51, 66
;BoldOff=27, 40, 115, 48, 66
;ItalicOn=27, 40, 115, 49, 83
;ItalicOff=27, 40, 115, 48, 83
;UnderOn=27, 38, 100, 48, 68
;UnderOff=27, 38, 100, 64

; HP-LaserJet series 2 Plus
;Printer=Line
;PrinterOn=27, 38, 107, 50, 71
;PrinterOff=27, 69
;BoldOn=27, 40, 115, 51, 66
;BoldOff=27, 40, 115, 48, 66
;ItalicOn=27, 40, 115, 49, 83
;ItalicOff=27, 40, 115, 48, 83
;UnderOn=27, 38, 100, 48, 68
;UnderOff=27, 38, 100, 64


DateFormat  =  European

LeftMargin  =  1
RightMargin =  66

Editor      =  Ted

TextColor   white on blue
HitColor    white on blue

ExportWhat=Current record
OutputMargin=60
```

Figure 12

To save this file press <*Esc*> followed by <*Enter*>

You will now return to the AIRBASE directory.

Enter AIRBASE at the DOS Prompt (C:\AIRBASE > AIRBASE <*Enter*>) to initiate the database. Select the required number corresponding to the database (for example, select 1 to enter AIRBASE). The screen will change to display the previous hit list, you are now in AIRBASE.

(II) Obtaining a print-out of a search.

After a given search has been performed you may wish to print out the list of useful abstracts.

(1) Enter the eXport drop-down menu, (<*ALT*> X) or by using the mouse to highlight the eXPORT menu, as shown in figure 13, below.

(2) Highlight and select the Print to Printer option using the key board or mouse. Once this option has been selected a tick will appear to signify that this option has been chosen.

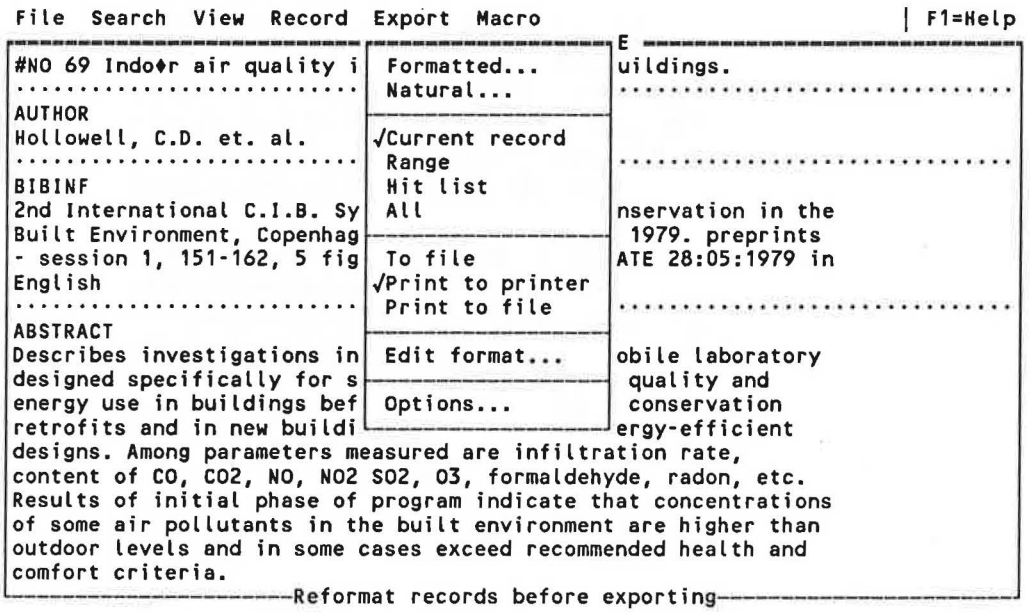

Figure 13

(4) You can choose to print out the Current record, a range of records from the found list, the entire found list or all of the records within the database.

Current record.....If the Current record option is highlighted then one record will then be printed, that record currently on the screen.

Range.....You can print out a range of records from the found list (for example, from a list of 100, numbers 20 to 60 may be exported).

Hit list.....If the Hit list option is selected the entire found list will be exported.

All.....The entire database will be exported. **WARNING**....there are over 5000 records in AIRBASE..Printing them all will take a long time. If this is selected by accident, press the ESC key, you will be asked if you wish to abort the printing procedure. Select Yes.

Highlight and select the desired option.

(5) The records can be exported either as they appear on the screen **(Natural format)** or via a specified export format **(Formatted)**.

To export records via the natural format, simply select this option and the required number of records will be exported to the printer as they appear on the screen, as seen in figure 14 below.

```
:Airbase
#NO 69 Indoor air quality in energy-efficient buildings.
-
AUTHOR
Hollowell, C.D. et. al.
-
BIBINF
2nd International C.I.B. Symposium on Energy Conservation in the
Built Environment, Copenhagen, May 28 - June 1, 1979. preprints
- session 1, 151-162, 5 figs, 1 tab, 5 refs. #DATE 28:05:1979 in
English
-
ABSTRACT
Describes investigations in California with a mobile laboratory
designed specifically for studies of indoor air quality and
energy use in buildings before and after energy conservation
retrofits and in new buildings incorporating energy-efficient
designs. Among parameters measured are infiltration rate,
content of CO, CO2, NO, NO2 SO2, O3, formaldehyde, radon, etc.
Results of initial phase of program indicate that concentrations
of some air pollutants in the built environment are higher than
outdoor levels and in some cases exceed recommended health and
comfort criteria.
-
KEYWORDS
air quality, retrofit, energy conservation, radon, formaldehyde.
```

Figure 14

To format the records before exporting, select the formatted option. You will be prompted to select the directory where the formatted files are kept. Pressing <*Enter*> selects the default directory (AIRBASE).

A list of available formats will appear in the centre of the screen,*(For example AIRBASE.EXP)* highlight and select the required format.

The file containing the format is suffixed by .EXP and can be edited from within AIRBASE, enabling Key fields to be exported in a different order or omitted as necessary.

WARNING..... BEFORE EDITING EXPORT FORMATS MAKE COPIES OF THE ORIGINAL FORMATS.

For example, C:\>COPY AIRBASE.EXP APPLES.EXP <*Enter*>

To edit the export format, select the edit format option. A dialogue box will appear in the centre of the screen. Press <*Enter*> to see the choice of export formats. Select the required format to be edited.

The on-board editor will be evoked *(TED.EXE)*, press <*Enter*> to edit.

Once the export format has been edited, press the <*Esc*> key, which saves the file, then <*Enter*>, you will return to AIRBASE, or which ever database you where previously using.

Enter the eXport menu once again and resume the eXport process. Examples of different export formats appear in Appendix D.

The nature of the output can further be edited by selecting the Options facility within the eXport menu. Enter the required margins and press <*Enter*>.

Once all variables have been selected highlight the formatted option and press <*Enter*>....the records will be then printed, An example of the possible output is given in figure 15 overleaf.

1.
#NO 69 Indoor air quality in energy-efficient buildings.

AUTHOR Hollowell, C.D. et. al.

BIBINF 2nd International C.I.B. Symposium on Energy Conservation in the Built Environment, Copenhagen, May 28 - June 1, 1979. preprints - session 1, 151-162, 5 figs, 1 tab, 5 refs. #DATE 28:05:1979 in English

ABSTRACT Describes investigations in California with a mobile laboratory designed specifically for studies of indoor air quality and energy use in buildings before and after energy conservation retrofits and in new buildings incorporating energy-efficient designs. Among parameters measured are infiltration rate, content of CO, CO2, NO, NO2 SO2, O3, formaldehyde, radon, etc. Results of initial phase of program indicate that concentrations of some air pollutants in the built environment are higher than outdoor levels and in some cases exceed recommended health and comfort criteria.

KEYWORDS air quality, retrofit, energy conservation, radon, formaldehyde.

Figure 15

5. To EXPORT a search to a file.

To save the performed search to a file, which can either be printed at some later date, or further edited by a word processor.

(1) Enter the eXport Drop-Down menu (by pressing <*ALT*> X) or by using the mouse, and select the print to file option, a TICK will appear by the desired method of output.

Follow the same procedure as above to edit the format of the output, and the quantity of records. Once all of the options have been selected highlight the formatted or natural export format and press <*Enter*>.

If you choose to export the records in Natural format, you will be asked to identify a file to hold the exported records. Enter a file name and press <*Enter*>. An example can be seen in figure 16 below.

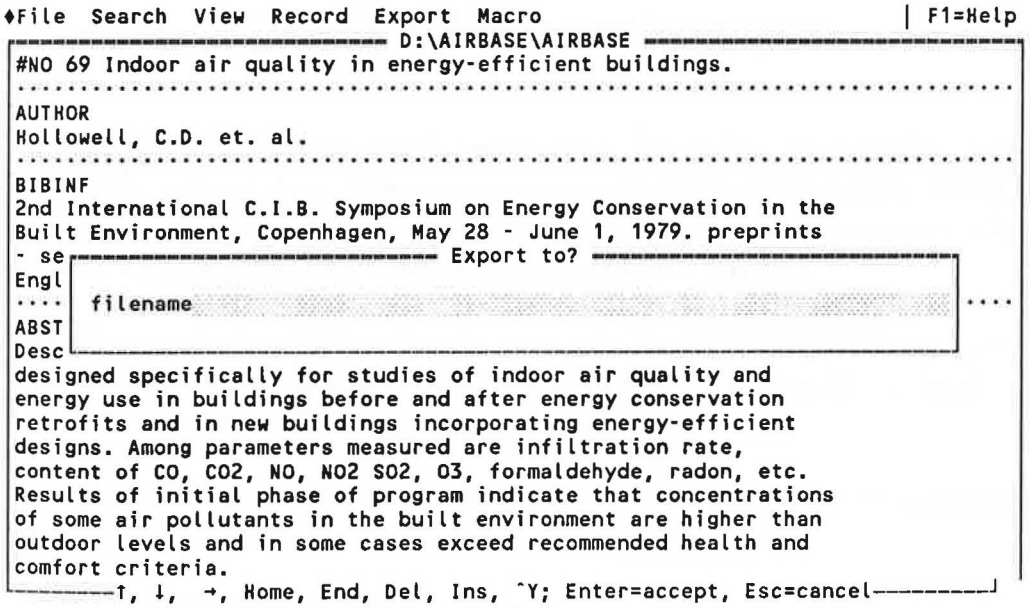

Figure 16

The required number of records will be exported to the file as they appear in the original database, *(or on the screen)*.

If you choose to export the records as Formatted, you will be first prompted to identify the directory containing the format export file. The default directory is AIRBASE. Press *<Enter>*.

You will then be asked to identify an export format from the list. Highlight and select the required format.

A dialogue box will appear in the centre of the screen, enter the name of the required file you wish to export to, and press *<Enter>*.

If the file already exists you will be asked whether you wish to append (A) the file or overwrite (O) it. Select the appropriate option by entering either A or O, the newly exported records will either be added to the specified file or overwrite its previous contents.

The required number of records will be exported according to the chosen format.

AIRBASE exports the abstracts in **ASCII** format and can be imported into many word processing packages. This facility enables abstracts to be included in reports and research papers.

6. Other features of AIRBASE on Idealist

(I) MS DOS-SHELL

By selecting the File drop-down menu (<*ALT*> F), you can temporarily escape from AIRBASE using DOS-Shell. This facility allows you to return to the operating system, while keeping AIRBASE in memory. To return to AIRBASE, type EXIT at the DOS prompt. (e.g C:\EXIT <*Enter*>).

(II) To leave AIRBASE

To leave AIRBASE enter the File drop-down menu (<*ALT*> F) and select the EXIT option, you will return to the initial menu seen in figure 1. Access another database, by selecting the required number and pressing <*Enter*>. By selecting 0 (zero)and then <*Enter*> you will return the operating system of your computer.

(III) To edit Synonyms

This facility allows several associated search terms to be automatically included when one word is searched for. The synonym list can be edited by entering the Search drop-down menu (<*ALT*> S) and selecting the Edit synonyms option. The on board editor (TED.EXE) will be invoked, Press <*Enter*>, to edit.

To define synonyms simply enter the search term that will act as a trigger term, followed directly by and equals sign (=) followed directly by the terms that will also be searched for when the trigger term is used.

For example, if the desired field of interest is tracer gas studies, by editing the synonyms list to include:

Tracer = SF6 PFT DECAY EMISSION

Then whenever tracer is searched for, records containing SF6, PFT, DECAY, and EMISSION will be accessed.

To leave the editor, press <*Esc*> followed by <*Enter*>, you will return to AIRBASE, now perform your search.

(IV) Report Hit Terms

By entering the Search drop-down menu (<*ALT*> S) the Report Hit Terms facility can be activated. This option allows all searched terms to be reported, displaying the searched term in a pop-up box on the screen, following each search.

To select this option enter the Search drop-down menu <*ALT*> S, highlight and select the Report hit terms option, press <*Enter*>, a tick will now appear in the drop-down menu. Press <*Esc*>.

From now on every search term will appear on the screen after each search, To remove the pop-up box in the centre of the screen, press the <*Esc*> key.

To de-activate this option, enter the search drop down menu again <*ALT*> S, highlight and re-select this option. The tick should now disappear, deactivating this facility.

7. UPDATING AIRBASE.

Updates to the AIRBASE suite of databases are available from the AIVC on a quarterly basis, by request. For further details contact the AIVC.

8. HELP....(The on-board Help facility)

<F1>.....HELP. Help is always at hand, by pressing the <F1> function key, you can call up the built-in help facility, as indicated below.

Help is available in two ways - either highlight the function that you require HELP with, and press the <F1> Function key, or press the <F1> function key from anywhere within AIRBASE and a list of functions are displayed. The on-board help facility contains information on each of the terms contained within the scroll box. Simply highlight and select the appropriate term. A pop-up dialogue box will appear in the centre of the screen. To return to the list of available help options press <*Enter*> once again. <*Esc*> returns to AIRBASE.

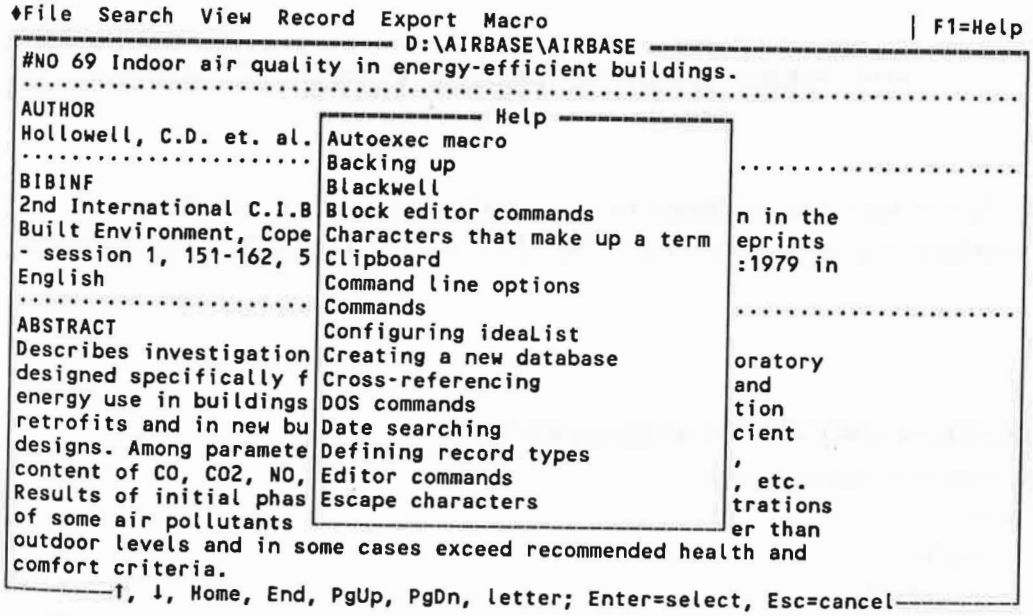

Figure 17(a)

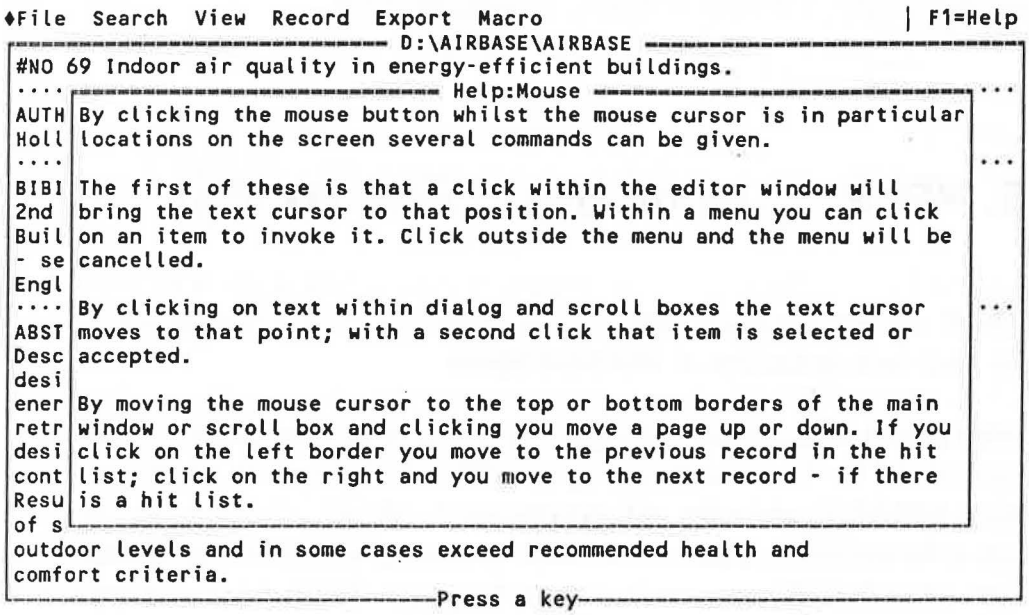

Figure 17(b)

10. THE AIVC's HELP LINE

HELP LINE....If you have any problems in restoring the software or searching AIRBASE then help can be obtained from the AIVC in Coventry, UK, at the address below:

AIR INFILTRATION AND VENTILATION CENTRE
University of Warwick Science Park
Sovereign Court
Sir William Lyons Road
COVENTRY CV4 7EZ
GREAT BRITAIN

Telephone +44 (0)203 692050
Fax +44 (0)203 416306

AIRBASE THESAURUS

Contents

KEY

UF - used for
BT - broader term
NT - narrower term
RT - related term

THESAURUS OF TERMS

1. buildings

large building
residential building u.f.dwelling
 house
  townhouse
  terraced house
  rented house
  detached house
  testing house
  multifamily building
   high occupancy spaces
  passive solar building
   passive solar house
    passive solar design
  tight house
    envelope house
  low energy house
flat
apartment building
multi-storey building
mobile home
bungalow
garage

nondomestic building

industrial building
  factory

commercial building
  office building
  bank
  hotel
  supermarket
  department store
  enclosed shopping mall
  auction hall
  animal house
    stables
    cattle
  greenhouse
    atrium
    conservatory
  hangar
    aircraft hangars
 public building
  sports building
  museum
  hospital
  school
  university
  library
  laboratory
  theatre
    auditorium
      stage shaft
   opera house

high rise building
low rise building

building design

problem buildings
  sick building
    sick building syndrome

1.1 rooms

attic
basement
kitchen
bedroom
bathroom
cold room
elevator shaft
computer room
cleanroom
workplace
work room
underfloor crawlspace

1.2 building components

wall
  building envelope
  building shape
  cavity wall
    cavity
  party walls
  metal stud walls
  porous wall
  facade
  wood frame
floor
  floor coverings
ceiling
  porous ceiling
roof
  roof space
  ridge vent
   open ridge
  baffles
window
  double glazing
  single glazing
  triple glazing
  storm window

shutter
blind
roller blind
door
storm door
doorway
chimney
spires
flue
fume hood
duct
boiler
construction detail
cavity barrier
vapour barrier
air barrier
air-vapour barrier
joint
soffit
grating
insulation
superinsulation
foundation
air inlets
vent
air vent
supply vent
extract vent
extract ventilation
extractor fan

building material
brick
stone
wood
concrete
paint
plaster
chipboard
asbestos
pipe

installation techniques
maintenance
structural fault

2. ventilation

air change rate
air change
natural ventilation
passive ventilation
stack
stack effect
stack pressure
stack ventilation
neutral pressure level
neutral zone
air infiltration
infiltration rate
crack
crack length
openings
draughts
mechanical ventilation
controlled ventilation
demand control
demand-controlled ventilation
user control
active ventilation
air conditioning
filtration
air cleaning
displacement ventilation
mixing ventilation
cross ventilation
ventilation air
ventilation effectiveness
ventilation efficiency
ventilation heat loss
ventilation rate
minimum ventilation rate
ventilation requirements
ventilation strategy
ventilation system
integrated ventilation
gravitational ventilation

2.1 tracer gas

tracer gas measurements
environmental chamber
multi chamber
testing chamber
testing unit
decay rate
constant concentration
constant emission
mixing

argon
krypton
xenon
sulphur hexafluoride
oxygen
perfluorocarbon
methane
helium

hydrogen
coal gas
chlorothene
ethane
freon
ammonia
carbon dioxide
carbon monoxide
nitrous oxide

2.2 pressurization

air leakage
 leakage area
 leakage path
 component leakage
 air tightness
 air velocity
 air pressure
 internal pressure
pressurization correlation
pressurization testing
overpressure
fan depressurization
house depressurization
component pressurization
alternating pressure
thermography
 thermogram
sound
performance testing

2.3 ventilation needs

indoor climate
air movement
 smoke movement
thermal comfort
health
 disease
  cancer
   lung cancer
   carcinogen
 allergies
 irritation
  irritant
 infection
 respiratory illness
 hygiene
 passive smoking
air quality
 indoor air quality
 outdoor air
 outdoor air quality
environment pollution
 pollution
  pollutant
   biological pollutant
    organic compound
    hydrocarbon
    microbiology
    bacteria
    particle
    mould
   chemical pollutant
    toxic gas
    smoke
     tobacco smoke
    particulate
     dust
    odour
     body odour
    aerosol
    sulphur dioxide
    nitrogen dioxide
    nitrogen oxides
    nitric oxide
    formaldehyde
    pentachlorphenol
    ozone
    thoron
    combustion product

2.4 retrofitting

retrofit u.f. weatherization
 weatherstripping
  draughtproofing
   draughtstripping
 terrain effects
 shielding
  shelter belt
  windbreak
   shade
  vegetation
  trees
  fence
  hedge
 sealing
 caulking
  sealant
  mastic
 house doctor

3. energy

energy conservation
energy consumption

water consumption
energy losses
energy audit
energy balance
energy efficiency
energy needs
energy policy
energy saving USE energy conservation

heat transfer
 heat loss
 heat recovery
 heat storage
heating
 passive heating
 heating system
 space heating
 air heating
 floor heating
 combustion heating
radiator
heating needs
electric heating
gas
gas heating
 gas appliance
  gas cooking
  gas stove
stove
solar
 solar heating
furnace

4. climate

hot climate
 desert climate
cold climate
dry climate

weather
 sun
 rain
 frosting

moisture
 water
  water vapour
  damp
 humidity
  humidity control
 condensation
  interstitial condensation
  surface condensation

air flow
 dry air
 wind
 wind speed
  mean wind speed
 wind direction
 wind pressure
 wind effect
 turbulence
  turbulence intensity
  turbulent air flow
  flow
   turbulent flow
   laminar flow
 convection
temperature
 temperature difference
 cooling
pressure
 pressure difference
 pressure distribution
 pressure fluctuation
 pressure coefficient
  mean pressure coefficient
 pressure differential
 pressure drop
 pressure testing
  induced pressure testing
 surface pressure

5. instruments

instrumentation
measurement
measurement technique
 automatic equipment
blower
 blower door
fan
anemometer
manometer
transducer
permeameter
chromatograph
concentration meter
stroboscope
katharometer
probe
computer
 data logger
 microprocessor

heat exchanger
 air-to-air heat exchanger
 thermal wheel
heat pump

air curtain
air lock
sample bag
sample bottle
filter
scintillation counter
wind tunnel
  wind tunnel testing
  roughness fetch
  boundary layer
  shear layer
humidifier
  humidification
dehumidifier
  dehumidification
hot box
electrostatic precipitator
sampler
passive sampler
  passive sampling
personal monitors
sensor

6. radioactivity

radioactive
radiation
  background radiation
alpha particle
beta radiation
gamma rays
radon
  radon daughter
soil
emanation

7. miscellaneous

modelling
  model
  theoretical modelling
  numerical modelling
  empirical models
  mathematical model
  mathematical modelling
  calculation techniques
  correlation
  prediction
  computer model
  nomogram
ageing
diffusion
porosity
permeability

design
simulation
validation
standard
building code
patent

market study
questionnaire

review
cost effectiveness
economic analysis

occupancy effects
  occupant
  occupant behaviour
  occupant control
  occupant reaction
  window opening
  door opening
  open window
  comfort
    human comfort

thermal analysis
thermal conductivity
thermal efficiency
thermal gradient
thermal insulation
thermal mass
thermal performance
thermal requirements
thermal resistance

testing

FULL INDEX TO AIRBASE THESAURUS

house depressurization
component pressurization
alternating pressure
thermography
performance testing

air lock
BT instruments (5)

air movement
BT ventilation needs (2.3)
NT smoke movement
RT indoor climate
thermal comfort
air quality
draughts
air velocity
air flow
air infiltration
air leakage

air permeability USE permeability

air pollution USE pollution

air pressure
BT air leakage
RT leakage area
leakage path
component leakage
air tightness
air velocity
internal pressure

air quality
BT ventilation needs (2.3)
NT indoor air quality
outdoor air
outdoor air quality
environment pollution
RT indoor climate
health

air quality sensors USE sensor + air quality

air recirculation rate USE air change rate

air renewal USE air change rate

air speed USE air velocity

air tightness
BT air leakage
RT leakage area
leakage path
component leakage
air velocity
air pressure
internal pressure
tight house

air velocity
BT air leakage
RT leakage area
leakage path
component leakage
air tightness
air pressure
internal pressure
wind speed

air vent
BT vent
NT supply vent
extract vent
RT air inlets

air-to-air heat exchanger
BT heat exchanger
RT thermal wheel

air-vapour barrier
BT construction detail
RT cavity barrier
vapour barrier
air barrier
wind barrier
air leakage
air infiltration
building envelope
insulation

aircraft hangars
BT hangar
RT large building

airflow windows USE window

allergic disease USE allergies

allergies
UF allergic disease
BT health
RT disease
irritation
respiratory illness
hygiene
passive smoking

alpha particle

BT radioactivity (6)
RT radioactive
radiation
beta radiation
gamma rays
radon
soil
emanation

alternating pressure
BT pressurization (2.2)
RT air leakage
pressurization correlation
component pressurization
overpressure
thermography
sound
performance testing

ammonia
BT tracer gas (2.1)

anemometer
BT instruments (5)

animal house
BT commercial building
NT stables
cattle

apartment building
BT residential building
RT flat
house
multi-storey building
high occupancy spaces

argon
BT tracer gas (2.1)

array

asbestos
BT building material
RT brick
stone
wood
concrete
chipboard
pollutant
air quality
health

atrium
BT greenhouse
RT conservatory
solar

attic
UF loft
BT rooms (1.1)
RT basement
roof

auction hall
BT commercial building
RT office building
bank
hotel
supermarket
department store
enclosed shopping mall

auditorium
BT theatre
NT stage shaft
RT opera house

automatic equipment
BT measurement technique

B

background radiation
BT radiation

bacteria
BT biological pollutant
RT organic compound
microbiology
particle
mould

baffles
BT roof
RT roof space
ridge vent

bank
BT commercial building
RT office building
hotel
supermarket
department store
enclosed shopping mall
auction hall

basement
BT rooms (1.1)
RT underfloor crawlspace

foundation

bathroom
BT rooms (1.1)
RT kitchen
bedroom

bedroom
BT rooms (1.1)
RT kitchen
bathroom

beta radiation
BT radioactivity (6)
RT radioactive
radiation
alpha particle
gamma rays
radon
soil
emanation

biological pollutant
BT pollutant
RT organic compound
microbiology
bacteria
particle
chemical pollutant
mould

blind
BT window
NT roller blind
RT storm window
shutter

blower
BT instruments (5)
NT blower door
RT fan
pressurization testing
air leakage

blower door
BT blower

blower door tests USE blower door + testing

body odour
BT odour

boiler
BT building component (1.2)
RT flue
fume hood

boundary layer
BT wind tunnel
RT wind tunnel testing
roughness fetch
shear layer

brick
BT building material
RT stone
wood
concrete
chipboard
asbestos

building code
RT standard
patent

building component (1.2)
NT wall
floor
ceiling
roof
window
door
doorway
chimney
spires
flue
fume hood
duct
boiler
construction detail

building design
BT buildings (1)
RT problem buildings
building envelope
building shape
design

building envelope
BT wall
RT building shape
cavity wall
tight house
insulation

building material
BT building component (1.2)
NT brick
stone
wood

concrete
chipboard
asbestos
pipe
RT construction detail
maintenance
structural fault

building shape
BT wall
RT building envelope
building design

buildings (1)
NT large building
residential building
nondomestic building
commercial building
public building

bungalow
BT residential building
RT house
flat
apartment building
multi-storey building
mobile home

C

calculation USE calculation techniques

calculation methods USE calculation techniques

calculation techniques
UF calculation
calculation methods
RT modelling
model
theoretical modelling
numerical modelling
empirical models
mathematical model
mathematical modelling
correlation
prediction
computer model
nomogram

cancer
BT disease
NT lung cancer
carcinogen

carbon dioxide
BT tracer gas (2.1)

carbon monoxide
BT tracer gas (2.1)
RT pollutant

carcinogen
BT cancer
RT lung cancer

carpet USE floor coverings

cattle
BT animal house
RT stables

caulking
BT retrofitting (2.4)
NT sealant
mastic
RT sealing
weatherstripping
shielding
house doctor

cavity
BT cavity wall

cavity barrier
BT construction detail
RT vapour barrier
air barrier
air-vapour barrier
insulation

cavity wall
BT wall
NT cavity
RT building envelope
building shape
party walls
metal stud wall
porous wall
facade
cavity barrier
insulation

ceiling
BT building component (1.2)
NT porous ceiling
RT roof

chemical pollutant
BT pollutant
RT biological pollutant
particle

chimney
BT building component (1.2)
RT roof
flue
fume hood
duct

chipboard
BT building material
RT brick
stone
wood
concrete
asbestos
formaldehyde

chlorothene
BT tracer gas (2.1)

chromatograph
BT instruments (5)

cleanroom
UF clean room
BT rooms (1.1)
RT computer room
laboratory

clean room USE cleanroom

climate (4)
NT hot climate
cold climate
dry climate
weather
air flow
temperature
pressure

coal gas
BT tracer gas (2.1)
cold climate
BT climate (4)
RT hot climate
dry climate

cold room
UF cold store
BT rooms (1.1)

cold store USE cold room

combustion heating
BT heating
RT passive heating
heating system
space heating
air heating
floor heating

combustion product
BT chemical pollutant

comfort
BT occupancy effect
NT human comfort
RT occupant reaction
thermal comfort

commercial building
BT buildings (1)
NT office building
bank
hotel
supermarket
department store
enclosed shopping mall
auction hall
animal house
greenhouse
hangar
RT large building
residential building
nondomestic building
industrial building
public building
high rise building
low rise building
building design
problem buildings

component leakage
BT air leakage
RT leakage area
leakage path
air tightness
air velocity
air pressure
internal pressure

component pressurization
BT pressurization (2.2)
RT air leakage
pressurization correlation
pressurization testing

fan depressurization
house depressurization
alternating pressure
thermography
sound
performance testing
overpressure
component leakage

computer
BT instruments (5)
NT data logger
microprocessor
RT computer model
computer room

computer model
BT modelling
RT model
theoretical modelling
numerical modelling
empirical modelling
mathematical modelling
mathematical model
calculation techniques
correlation
prediction
monogram
computer
computer room

computer room
BT rooms (1.1)
RT cleanroom

concentration meter
BT instruments (5)

concrete
BT building material
RT brick
stone
wood
chipboard
asbestos

condensation
BT moisture
NT interstitial condensation
surface condensation
RT water
humidity
mould

conservatory
BT greenhouse
RT atrium

constant concentration
BT tracer gas (2.1)
RT constant emission

constant emission
BT tracer gas (2.1)
RT constant concentration

construction detail
BT building component (1.2)
NT cavity barrier
vapour barrier
air-vapour barrier
joint
soffit
grating
insulation
foundation
air inlets
vent

contaminant USE pollutant

controlled ventilation
BT mechanical ventilation
NT demand control
demand-controlled ventilation
user control
active ventilation
RT occupant control

convection
BT air flow
RT wind
wind speed
wind direction
wind pressure
wind effect
turbulence

cooling
BT temperature
RT temperature difference

correlation
BT modelling
RT model
theoretical modelling
numerical modelling
empirical models
mathematical modelling
mathematical model
calculation techniques

prediction
computer model
nomogram

cost effectiveness
RT economic analysis
energy conservation
energy audit
energy efficiency

crack
BT air infiltration
RT infiltration rate
crack length
openings

crack length
BT air infiltration
RT infiltration rate
crack
openings

cross ventilation
BT ventilation (2)
RT natural ventilation
mechanical ventilation
displacement ventilation
mixing ventilation
gravitational ventilation

D

damp
BT water
RT water vapour
moisture
humidity
condensation

data logger
BT computer
RT microprocessor

decay rate
UF rate of decay
BT tracer gas (2.1)

dehumidification
BT dehumidifier
RT humidification

dehumidifier
BT instruments (5)
NT dehumidification
RT humidifier
humidity
dry air

demand control
BT controlled ventilation
RT demand-controlled ventilation
user control
active ventilation
occupant control

demand-controlled ventilation
BT controlled ventilation
RT demand control
user control
active ventilation
occupant control

department store
BT commercial building
RT office building
bank
hotel
supermarket
enclosed shopping mall
auction hall

desert climate
BT hot climate

design
RT modelling
simulation
validation
building design

detached house
BT house
RT townhouse
terraced house
rented house
testing house
multifamily building
bungalow

diffusion

disease
BT health
NT cancer
RT allergies
irritation
respiratory illness
hygiene
passive smoking

displacement ventilation
BT ventilation (2)
RT natural ventilation
mechanical ventilation
mixing ventilation

cross ventilation
gravitational ventilation

door
BT building component (1.2)
NT storm door
RT wall
floor
roof
window
doorway
blower door
door opening

door opening
BT occupancy effects
RT occupants
occupant behaviour
occupant control
occupant reaction
window opening
door
doorway

doorway
BT building component (1.2)
RT door
door opening

double glazing
BT window
RT single glazing
triple glazing
storm window

draughtproofing
BT weatherstripping
RT retrofitting (2.4)
draughts

draughts
BT ventilation (2)
RT air change rate
natural ventilation
air infiltration
mechanical ventilation
air conditioning

draughtstripping
BT draughtproofing

dry air
BT air flow
RT humidifier

dry climate
BT climate (4)
RT hot climate
cold climate
dry air

duct
BT building component (1.2)
RT chimney
flue
fume hood
pipe

dust
BT particulate

dwelling USE residential building

E

economic analysis
RT standard
building code
patent
market study
questionnaire
review
cost effectiveness
energy audit

electric heating
BT heating
RT heating system
space heating
air heating
floor heating
combustion heating
radiator
heating needs
gas heating
solar heating

electrostatic precipitator
BT instruments (5)

elevator shaft
UF lift shaft
BT rooms (1.1)
RT stage shaft
duct

emanation
BT radioactivity (6)
RT radioactive
radiation
alpha particle
beta radiation

gamma rays
radon
soil

empirical models
BT modelling
RT model
theoretical modelling
numerical modelling
mathematical modelling
mathematical model
calculation techniques
correlation
prediction
computer model
nomogram

enclosed shopping mall
BT commercial building
RT office building
bank
hotel
supermarket
department store
auction hall

energy (3) SEE THESAURUS

energy audit
BT energy (3)

energy balance
BT energy (3)

energy conservation
UF energy saving
energy economy
BT energy (3)

energy consumption
BT energy (3)

energy economy USE energy conservation OR energy efficiency

energy efficiency
BT energy (3)
RT ventilation efficiency

energy losses
BT energy (3)

energy needs
BT energy (3)

energy policy
BT energy (3)

energy saving USE energy conservation
envelope house
BT tight house

environment pollution
BT air quality
NT pollution
RT indoor air quality
outdoor air
outdoor air quality

environmental chamber
BT tracer gas (2.1)

ethane
BT tracer gas (2.1)

extract vent
BT air vent
NT extract ventilation
RT supply vent

extract ventilation
BT extract vent
NT extractor fan
RT ventilation (2)
air conditioning

extractor fan
BT extract ventilation

F
facade
BT wall
RT building shape
building envelope
cavity wall
wood frame

factory
BT industrial building

fan
BT instruments (5)
RT blower
fan depressurization
fan pressurization method
extractor fan

fan depressurization
BT pressurization (2.2)
RT air leakage

pressurization correlation
pressurization testing
house depressurization
component pressurization
alternating pressure
thermography
sound
performance testing
overpressure
fan

fence
BT shielding
RT shelter belt
windbreak
vegetation
trees
hedge

filter
BT instruments (5)
RT filtration

filtration
BT air conditioning
RT air cleaning
filter

flat
BT residential building
RT apartment building
house
multi-storey building
bungalow

floor
BT building component (1.2)
NT floor coverings
RT floor heating

floor coverings
UF carpet
BT floor

floor heating
BT heating
RT passive heating
heating system
space heating
air heating
combustion heating

flow
BT turbulence
RT turbulence intensity
turbulent air flow
turbulent flow
laminar flow

flue
BT building component (1.2)
RT chimney
fume hood
duct
pipe
vent

formaldehyde
BT chemical pollutant

foundation
BT construction detail
RT basement
underfloor crawlspace

freon
BT tracer gas (2.1)

frosting
BT weather

fume hood
BT building component (1.2)
RT chimney
flue
duct

furnace
BT energy (3)

G

gamma rays
BT radioactivity (6)
RT radioactive
radiation
alpha particle
beta radiation
radon
soil
emanation

garage
BT residential building
RT multi-storey building

gas
BT energy (3)
RT gas heating
gas appliance

gas appliance

BT gas heating
NT gas cooking
gas stove

gas cooking
BT gas appliance
RT gas stove

gas heating
BT energy (3)
NT gas appliance
RT energy consumption
energy needs
heating
heating needs
electric heating
gas
stove
solar heating

gas stove
BT gas appliance
RT gas cooking
stove

grating
BT construction detail
RT joint
soffit
air inlets
vent

gravitational ventilation
BT ventilation (2)
RT natural ventilation
mechanical ventilation
displacement ventilation
mixing ventilation
cross ventilation

greenhouse
BT commercial building
NT atrium
conservatory
RT passive solar building

H

hangar
BT commercial building
NT aircraft hangars
RT large building

health
BT ventilation needs (2.3)
NT disease
allergies
irritation
respiratory illness
hygiene
passive smoking
RT air quality

heat exchanger
BT instruments (5)
NT air-to-air heat exchanger
thermal wheel

heat loss
BT heat transfer
RT heat recovery
heat storage
energy losses
ventilation heat loss

heat pump
BT instruments (5)

heat recovery
BT heat transfer
RT heat loss
heat storage
heat pump
heat exchanger

heat storage
BT heat transfer
RT heat loss
heat recovery

heat transfer
BT energy (3)
NT heat loss
heat recovery
heat storage
RT energy losses
heat exchanger

heater USE heating system OR radiator

heating
BT energy (3)
NT passive heating
heating system
space heating
air heating
floor heating
combustion heating
RT energy consumption
radiator
heating needs

electric heating
gas heating
solar heating

heating needs
BT energy (3)
RT energy consumption
heating
radiator
electric heating
gas heating
solar heating

heating system
BT heating
RT passive heating
space heating
air heating
floor heating
combustion heating

hedge
BT shielding
RT shelter belt
windbreak
vegetation
trees
fence

helium
BT tracer gas (2.1)

high-occupancy spaces
BT multifamily building

high rise building
BT buildings (1)
RT low rise building

hospital
BT public building
RT museum
sports building
school
university
library
laboratory
theatre
opera house

hotbox
UF hot box
BT instruments (5)

hot box USE hotbox

hot climate
BT climate (4)
NT desert climate
RT cold climate
dry climate

hotel
BT commercial building
RT office building
bank
supermarket
department store
enclosed shopping mall
auction hall

house
BT residential building
NT townhouse
terraced house
rented house
testing house
multifamily building
passive solar building
tight house
RT flat
apartment building
multi-storey building
mobile home
bungalow
garage

house depressurization
BT pressurization (2.2)
RT air leakage
pressurization correlation
pressurization testing
overpressure
fan depressurization
component pressurization
alternating pressure
thermography
sound
performance testing

house doctor
BT retrofitting (2.4)
RT weatherstripping
sealing
caulking

human comfort
BT comfort

humidification
BT humidifier
RT dehumidification

humidifier
BT instruments (5)
NT humidification
RT dehumidifier
humidity
dry air

humidity
BT moisture
NT humidity control
RT water
water vapour
damp
condensation
humidifier
dehumidifier

humidity control
BT humidity

hydrocarbon
BT biological pollutant
RT organic compound
microbiology
bacteria
particle
mould

hydrogen
BT tracer gas (2.1)

hygiene
BT health
RT disease
allergies
irritation
infection
respiratory illness
passive smoking

I

indoor air quality
BT air quality
RT outdoor air
outdoor air quality
environment pollution

indoor climate
BT ventilation needs (2.3)
RT air movement
thermal comfort
health
air quality

indoor environment USE indoor climate
induced pressure test USE induced pressure testing
induced pressure testing
BT pressure testing

industrial building
BT buildings (1)
NT factory
RT large building
residential building
nondomestic building
commercial building
public building

infection
BT health
RT disease
allergies
irritation
respiratory illness
hygiene
passive smoking
air quality

infiltration rate
BT air infiltration
RT crack
crack length
openings
air change rate
ventilation rate
installation techniques
BT building component (1.2)
RT maintenance

instrumentation
BT instruments (5)

instruments (5) SEE THESAURUS

insulation
BT construction detail
NT superinsulation
RT cavity barrier
vapour barrier
air barrier
air-vapour barrier
joint
retrofit
tight house
building envelope
air tightness
energy conservation

thermal comfort
thermal insulation

integrated ventilation
BT ventilation system
internal pressure
BT air leakage
RT leakage area
leakage path
component leakage
air tightness
air velocity
air pressure

interstitial condensation
BT condensation
RT surface condensation
cavity wall

irritant
BT irritation
irritation
BT health
NT irritant
RT disease
allergies
respiratory illness
hygiene
passive smoking

J
joint
BT construction detail
RT soffit
grating
insulation
retrofit

K
katharometer
BT instruments (5)

kitchen
BT rooms (1.1)
RT bedroom
bathroom

krypton
BT tracer gas (2.1)

L
laboratory buildings USE laboratory

laboratory
BT public building
RT hospital
school
university
clean room
computer room

laminar flow
BT turbulence
RT turbulence intensity
turbulent air flow
flow
turbulent flow

large building
BT buildings (1)
RT industrial building
multifamily building
high occupancy spaces
multi-storey building
commercial building

leakage area
BT air leakage
RT leakage path
component leakage
air tightness
air velocity
air pressure
internal pressure

leakage path
BT air leakage
RT leakage area
component leakage
air tightness
air velocity
air pressure
internal pressure

library
BT public building
RT museum
school
university
theatre

lift shaft USE elevator shaft

loft USE attic

low energy housing USE low energy house

low energy house
UF low energy housing

BT house
RT townhouse
terraced house
rented house
detached house
testing house
multifamily building
passive solar building
tight house

low rise building
BT buildings (1)
RT high rise building

lung cancer
BT cancer
RT carcinogen

M

maintenance
BT building component (1.2)
RT installation techniques

manometer
BT instruments (5)

market study
RT questionnaire
review
economic analysis

mastic
BT caulking
RT sealant

mathematical model
BT modelling
RT model
theoretical modelling
numerical modelling
empirical models
mathematical modelling
calculation techniques
correlation
prediction
computer model
nomogram

mathematical modelling
BT modelling
RT model
theoretical modelling
numerical modelling
empirical models
mathematical model
correlation
prediction
computer model
nomogram

mean pressure coefficient
BT pressure coefficient

mean wind speed
BT wind speed

measurement
BT instruments (5)
RT measurement technique

measurement methods USE measurement technique

measurement technique
UF measurement methods
BT instruments (5)
NT automatic equipment
RT measurement

mechanical ventilation
BT ventilation (2)
NT controlled ventilation
RT air change rate
natural ventilation
air infiltration
air conditioning
displacement ventilation
mixing ventilation
cross ventilation
ventilation air
ventilation effectiveness
ventilation efficiency
ventilation heat loss
ventilation rate
ventilation requirements
ventilation strategy
ventilation system
gravitational ventilation

metal stud walls
BT wall
RT building envelope
cavity wall
party walls
porous wall
facade
wood frame

methane
BT tracer gas (2.1)

microbiology
BT biological pollutant
RT organic compound

bacteria
particle
mould

microprocessor
BT computer
RT data logger

minimum ventilation rate
BT ventilation rate

mixing
BT tracer gas (2.1)
RT mixing ventilation

mixing ventilation
BT ventilation (2)
RT natural ventilation
mechanical ventilation
displacement ventilation
cross ventilation
gravitational ventilation
mixing

mobile home
BT residential building
RT house
flat
apartment building
multi-storey building
bungalow

model
BT modelling
RT theoretical modelling
numerical modelling
empirical models
mathematical modelling
mathematical model
calculation techniques
correlation
prediction
computer model
nomogram

modelling
NT model
theoretical modelling
numerical modelling
empirical models
mathematical modelling
mathematical model
calculation techniques
correlation
prediction
computer model
nomogram
RT ageing
diffusion
porosity
permeability
design
simulation
validation

moisture
NT water
humidity
condensation
RT mould

mould
BT biological pollutant
RT organic compound
microbiology
bacteria
particle
humidity

multi-chamber
BT tracer gas (2.1)
RT environmental chamber
testing chamber

multifamily building
UF multifamily house
BT house
NT high occupancy spaces
RT townhouse
terraced house
rented house
detached house
testing house
passive solar building
apartment building

multifamily house USE multifamily building

multi-storey buiding
BT residential building
RT house
flat
apartment building
mobile home
bungalow
garage

museum

BT public building

RT library

theatre
sports building
hospital
school
university
laboratory
opera house

N

natural ventilation
BT ventilation (2)
NT passive ventilation
stack
stack effect
stack pressure
stack ventilation
neutral pressure level
RT mechanical ventilation
air change rate
air infiltration
draughts
displacement ventilation

neutral pressure level
BT natural ventilation
RT stack
stack effect
stack pressure
stack ventilation
neutral zone

neutral zone
BT natural ventilation
RT passive ventilation
stack
stack effect
stack pressure
stack ventilation
neutral pressure level
wind pressure

nitric oxide
BT chemical pollutant

nitrogen dioxide
BT chemical pollutant

nitrogen oxides
BT chemical pollutant

nitrous oxide
BT tracer gas (2.1)

nomogram
BT modelling
RT model
theoretical modelling
numerical modelling
empirical models
mathematical modelling
mathematical model
calculation techniques
correlation
prediction
computer

nondomestic building
BT buildings (1)
RT large buildings
residential building
industrial building
commercial building
public building
low rise building
problem buildings

numerical modelling
BT modelling
RT model
theoretical modelling
empirical models
mathematical modelling
mathematical model
calculation techniques
correlation
prediction
computer model
nomogram

O

occupancy effects
NT occupants
occupant behaviour
occupant control
occupant reaction
window opening
door opening
open window
comfort

occupant
BT occupancy effects
RT occupant behaviour
occupant control
occupant reaction
window opening
open window
comfort

occupant behaviour
BT occupancy effects
RT occupants
occupant control
occupant reaction
window opening
door opening
open window
comfort

occupant control
BT occupancy effects
RT occupants
occupant behaviour
occupant reaction
window opening
door opening
comfort
controlled ventilation

occupant reaction
BT occupancy effects
RT occupants
occupant behaviour
occupant control
window opening
door opening
open window
comfort

odour
BT air quality
NT body odour
RT indoor air quality
pollution
mould

office

office building
BT commercial building
RT bank
hotel
supermarket
department store
enclosed shopping mall
auction hall
animal house
greenhouse
hangar

open ridge
BT ridge vent
open window
BT occupancy effects
RT window
window opening
door opening

openings
BT air infiltration
RT infiltration rate
crack
crack length

opera house
BT public building
RT museum
school
university
library
theatre

organic compound
BT pollutant
RT microbiology
biological pollutant
bacteria
particle

organic substance USE organic compound

outdoor air
BT air quality
RT indoor air quality
outdoor air quality
environment pollution

outdoor air quality
BT air quality
RT indoor air quality
outdoor air
environment pollution

outdoor temperature USE outdoor air + temperature

overpressure
BT pressurization (2.2)
oxygen
BT tracer gas (2.1)

ozone
BT chemical pollutant

P
paint
BT concrete

RT plaster

particle
BT biological pollutant
RT organic compound
microbiology
bacteria
mould
smoke
particulate
aerosol

particulate
BT air quality
NT dust
RT indoor air quality
environment pollution
pollution
smoke
combustion product

party walls
BT wall
RT cavity wall
metal stud wall
porous wall
facade
wood frame

passive heating
BT heating
RT heating system
space heating
air heating
floor heating
combustion heating

passive sampler
BT instruments (5)
NT passive sampling
RT sampler
sampling
sample bag
sample bottle

passive sampling
BT passive sampler

passive smoking
BT health
RT cancer
disease
allergies
irritation
respiratory illness
pollution
tobacco
particulate
odour
carbon dioxide
carbon monoxide
toxic gas

passive solar building
BT house
NT passive solar house
RT testing house
tight house
low energy house
solar heating
greenhouse

passive solar design
BT passive solar house
RT solar heating
greenhouse
design

passive solar house
BT passive solar building
NT passive solar design
RT solar
solar heating
greenhouse

passive ventilation
BT natural ventilation
RT stack
stack effect
stack pressure
stack ventilation
neutral pressure level
active ventilation
neutral zone

patent
RT standard
building code

pentachlorphenol
BT chemical pollutant

perfluorocarbon
BT tracer gas (2.1)

performance test USE performance testing

performance testing
UF performance test
BT pressurization (2.2)

permeability
RT porosity
permeameter

permeameter
BT instruments (5)
RT permeability

personal monitors
BT instruments (5)

pipe
BT building material
RT brick
stone
wood
concrete
chipboard
asbestos
duct

plaster
BT building material

pollutant
UF contaminant
BT pollution
NT biological pollutant
chemical pollutant

pollution
BT air quality
NT pollutant

porosity
RT permeability
porous wall
porous ceiling

porous ceiling
BT ceiling
RT porosity
porous wall

porous wall
BT wall
RT building envelope
cavity
party walls
metal stud wall
facade
porosity
porous ceiling

prediction
BT modelling
RT theoretical modelling
numerical modelling
empirical models
mathematical modelling
mathematical model
calculation techniques
correlation
computer model
nomogram

pressure
BT climate (4)
NT pressure difference
pressure distribution
pressure fluctuation
pressure coefficient
pressure differential
pressure drop
pressure testing
surface pressure
RT pressurization (2.2)
wind pressure

pressure coefficient
BT pressure
NT mean pressure coefficient
RT pressure difference
pressure distribution
pressure fluctuation
pressure differential
pressure drop
pressure testing
surface pressure

pressure difference
BT pressure
RT pressure distribution
pressure fluctuation
pressure coefficient
pressure differential
pressure drop
pressure testing
surface pressure

pressure differential
BT pressure
RT pressure difference
pressure distribution
pressure fluctuation
pressure coefficient
pressure drop
pressure testing
surface pressure

pressure distribution
BT pressure
RT pressure difference
pressure fluctuation
pressure coefficient
pressure differential
pressure drop
pressure testing
surface pressure

pressure drop
BT pressure
RT pressure difference
pressure distribution
pressure fluctuation
pressure coefficient
pressure differential
pressure testing
surface pressure

pressure fluctuation
BT pressure
RT pressure difference
pressure distribution
pressure coefficient
pressure differential
pressure drop
pressure testing
surface pressure

pressure testing
BT pressure
NT induced pressure testing
RT pressure difference
pressure distribution
pressure fluctuation
pressure coefficient
pressure differential
pressure drop
pressurization testing
house depressurization
surface pressure

pressurization (2.2)
NT air leakage
pressurization correlation
pressurization testing
fan depressurization
house depressurization
component pressurization
alternating pressure
thermography
sound
performance testing
overpressure
RT pressure

pressurization correlation
BT pressurization (2.2)
RT air leakage
component pressurization
pressurization testing
fan depressurization
house depressurization
alternating pressure
thermography
sound
performance testing
overpressure

pressurization testing
BT pressurization (2.2)
RT air leakage
pressurization correlation
fan depressurization
house depressurization
component pressurization
alternating pressure
thermography
sound
performance testing
overpressure
pressure testing

probe
BT instruments (5)

problem buildings
BT buildings (1)
NT sick building
RT health

public building
BT buildings (1)
NT sports building
museum
hospital
school
university
library
laboratory
theatre
opera house
RT residential building
industrial building
commercial building

Q
questionnaire

RT market study
review
economic analysis

R

radiation
BT radioactivity (6)
NT background radiation
RT radioactive
alpha particle
beta radiation
gamma rays
radon
soil
emanation

radiator
BT energy (3)
RT energy consumption
heating
heating needs
electric heating
gas heating
solar heating

radioactive
BT radioactivity (6)
RT radiation
alpha particle
beta radiation
gamma rays
radon
soil
emanation

radioactivity (6)
NT radioactive
radiation
alpha particle
beta radiation
gamma rays
radon
soil
emanation

radon
BT radioactivity (6)
NT radon daughter
RT radiation
alpha particle
beta radiation
gamma rays
soil
emanation

radon daughter
UF radon decay products
BT radon

radon decay products USE radon daughter

rain
BT weather
RT sun
moisture
water
frosting

rate of decay USE decay rate

rented house
BT house
RT townhouse
terraced house
detached house
testing house
multifamily building

residential building
UF dwelling
BT buildings (1)
NT house
flat
apartment building
multi-storey building
mobile home
bungalow
garage
RT nondomestic building
industrial building
commercial building
public building
high rise building
low rise building
building design
problem buildings

respiratory disease USE respiratory illness

respiratory illness
UF respiratory disease
BT health
NT disease
allergies
irritation
hygiene
passive smoking

retrofit

UF weatherization
BT retrofitting (2.4)
NT weatherstripping
terrain effects
shielding
sealing
caulking
house doctor

retrofitting (2.4)
NT retrofit
RT weatherstripping
shielding
sealing
caulking
house doctor

review
RT standard
building code
patent
market study
questionnaire
economic analysis

ridge vent
BT roof
NT open ridge
RT roof space
baffles
roller blind
BT blind
roof
BT building component (1.2)
NT roof space
ridge vent
baffles
RT wall
floor
ceiling
window
door
chimney
spires

roof space
BT roof
RT ridge vent
baffles

rooms (1.1)
NT attic
basement
kitchen
bedroom
bathroom
cold room
elevator shaft
computer room
cleanroom
workplace
work room
underfloor crawlspace

roughness fetch
BT wind tunnel
RT wind tunnel testing
boundary layer
shear layer

S

sample bag
BT instruments (5)
RT sample bottle
sampling
passive sampler
passive sampling

sampler
BT instruments (5)
RT passive sampler
passive sampling
sample bag
sample bottle

sample bottle
BT instruments (5)
RT sample bag
sampling
passive sampler
passive sampling

sampling
RT sample bottle
sample bag
passive sampler
passive sampling

school
BT public building
RT sports building
university
library

scintillation counter
BT instruments (5)

sealant
BT caulking

RT mastic

sealing
BT retrofitting (2.4)
NT sealant
mastic
RT weatherstripping
terrain effects
shielding
caulking
house doctor

sealing layers USE sealing

sensor
BT instruments (5)

shade
BT windbreak

shear layer
BT wind tunnel
RT wind tunnel testing
roughness fetch
boundary layer

shelter belt
BT shielding
RT windbreak
vegetation
trees
fence
hedge

shielding
BT retrofitting (2.4)
NT shelter belt
windbreak
vegetation
trees
fence
hedge

shutter
BT window
RT storm window
blind

sick building
BT problem buildings
NT sick building syndrome
RT health

sick building syndrome
BT sick building

simulation
RT modelling
design
validation
testing

single glazing
BT window
RT double glazing
triple glazing
storm window

smoke
BT air quality
NT tobacco smoke
RT indoor air quality
environment pollution
pollution
toxic gas
particulate
odour
carbon dioxide
carbon monoxide
nitrogen dioxide
combustion product

smoke movement
BT air movement
RT smoke

smoke sensor USE smoke + sensor

soffit
BT construction detail
RT joint
grating

soil
BT radioactivity (6)
RT radon
emanation

solar
BT energy (3)
RT solar heating
passive solar building
passive solar design
greenhouse

solar heating
BT energy (3)
RT solar
passive solar building
passive solar design
greenhouse

sound
BT pressurization (2.2)

space heating
BT heating
RT passive heating
heating system
air heating
floor heating
combustion heating

spires
BT building component (1.2)
RT building shape
roof
chimney
modelling

sports building
BT public building
RT museum
hospital
school
university
library
laboratory
theatre
opera house

stables
BT animal house
RT cattle

stack
BT natural ventilation
RT passive ventilation
stack effect
stack pressure
stack ventilation
neutral pressure level
neutral zone

stack effect
BT natural ventilation
RT passive ventilation
stack
stack pressure
stack ventilation
neutral pressure level
neutral zone

stack pressure
BT natural ventilation
RT passive ventilation
stack
stack effect
stack ventilation
neutral pressure level
neutral zone

stack ventilation
BT natural ventilation
RT passive ventilation
stack
stack effect
stack pressure
neutral pressure level
neutral zone

stage shaft
BT auditorium
RT elevator shaft

standard
RT building code
patent

stone
BT building material
RT brick
wood
concrete
chipboard
asbestos
pipe

storm door
BT door
RT storm window

storm window
BT window
RT storm door
double glazing
shutter
blind

stove
BT energy (3)
RT gas stove

stroboscope
BT instruments (5)

structural fault
BT building component (1.2)
RT installation techniques
maintenance
building material
construction detail

sulphur dioxide
BT chemical pollutant

sulphur hexafluoride
BT tracer gas (2.1)

sun
BT weather
RT rain
solar

superinsulation
BT insulation
RT tight house
sealing
retrofit

supermarket
BT commercial building
RT office building
bank
hotel
department store
enclosed shopping mall
auction hall

supply vent
BT air vent
RT extract vent

surface condensation
BT condensation
RT interstitial condensation

surface pressure
BT pressure
RT pressure difference
pressure distribution
pressure fluctuation
pressure coefficient
pressure differential
pressure drop
pressure testing

T

temperature
BT climate (4)
NT temperature difference
cooling

temperature difference
BT temperature
RT cooling
thermal gradient
stack effect

terraced house
BT house
RT townhouse
rented house
detached house
testing house
multifamily building
passive solar building
tight house
low energy house
flat
apartment building
mobile home
bungalow

terrain effects
BT retrofit
RT weatherstripping
shielding
sealing
caulking
house doctor

test chamber USE testing chamber

testing
UF test
tests
RT testing chamber
testing house
testing unit
pressurization testing
pressure testing
performance testing
wind tunnel testing

testing chamber
UF test chamber
BT tracer gas (2.1)
RT environmental chamber
multi chamber
testing unit

test house USE testing house

test unit USE testing unit

testing unit
UF test unit
BT tracer gas (2.1)
RT testing chamber
testing house
testing

testing house
UF test house
BT house
RT testing unit
testing
testing chamber
passive solar building
tight house
low energy house

theatre
BT public building
NT auditorium
RT opera house

theoretical modelling
BT modelling
RT model
numerical modelling
empirical models
mathematical modelling
mathematical model
calculation techniques
correlation
prediction
computer model
nomogram

thermal analysis
RT thermal conductivity
thermal efficiency
thermal gradient
thermal insulation
thermal mass
thermal performance
thermal requirements
thermal resistance

thermal comfort
BT ventilation needs (2.3)
RT indoor climate
air movement
air quality
thermal insulation
thermal requirements
heating
thermal efficiency
thermal performance

thermal conductivity
RT thermal analysis
thermal efficiency
thermal gradient
thermal insulation
thermal mass
thermal performance
thermal requirements
thermal resistance

thermal efficiency
RT thermal analysis
thermal insulation
thermal performance
thermal requirements
ventilation efficiency
energy efficiency

thermal gradient
RT thermal analysis
thermal conductivity
thermal efficiency
thermal insulation
thermal mass
thermal performance
thermal requirements
thermal resistance
stack

thermal insulation
RT thermal efficiency
thermal performance
thermal requirements
insulation

thermal mass
RT thermal analysis
thermal conductivity
thermal efficiency
thermal gradient
thermal insulation
thermal performance
thermal requirements
thermal resistance

thermal performance
RT thermal analysis
thermal conductivity
thermal efficiency
thermal gradient
thermal insulation
thermal mass
thermal requirements
thermal resistance

thermal requirements
RT thermal analysis
thermal conductivity
thermal efficiency
thermal gradient
thermal insulation

thermal mass
thermal performance
thermal resistance
ventilation requirements

thermal resistance
RT thermal analysis
thermal conductivity
thermal efficiency
thermal gradient
thermal insulation
thermal mass
thermal performance
thermal requirements

thermal wheel
BT heat exchanger
RT air-to-air heat exchanger

thermogram
BT thermography

thermography
BT pressurization (2.2)
NT thermogram
RT air leakage
pressurization correlation
component pressurization
pressurization testing
fan depressurization
house depressurization
alternating pressure
sound
performance testing
overpressure

thoron
BT chemical pollutant
RT radon

tight house
BT house
NT envelope house
RT testing house
passive solar building
low energy house
air tightness

tobacco smoke
BT smoke

townhouse
BT house
RT terraced house
rented house
multifamily building
flat
apartment building
multi-storey building

toxic gas
BT chemical pollutant

tracer gas (2.1) SEE THESAURUS

tracer gas measurements
BT tracer gas (2.1)

transducer
BT instruments (5)

trees
BT shielding
RT shelter belt
windbreak
vegetation
trees
fence
hedge

triple glazing
BT window
RT double glazing
single glazing
storm window

turbulence
BT air flow
NT turbulence intensity
turbulent air flow
flow
turbulent flow
laminar flow
RT dry air
wind
wind speed
wind direction
wind pressure
wind effect
convection

turbulence intensity
BT turbulence

turbulent air flow
BT turbulence
RT turbulence intensity
flow
turbulent flow
laminar flow

turbulent flow
BT turbulence
RT turbulence intensity
turbulent air flow
flow
laminar flow

U
UK
underfloor crawlspace
BT rooms (1.1)
RT basement
elevator shaft
floor
university
BT public building
RT sports building
school
library
laboratory
theatre

user control
BT controlled ventilation
RT demand control
demand-controlled ventilation
active ventilation
occupant control

V
validation
RT modelling
design
simulation
testing

vapour barrier
BT construction detail
RT cavity barrier
air barrier
air-vapour barrier
wind barrier
air leakage
air infiltration
building envelope
insulation

vegetation
BT shielding
RT shelter belt
windbreak
trees
fence
hedge

vent
BT construction detail
NT air vent
RT air inlets

ventilation (2)
NT air change rate
natural ventilation
air infiltration
draughts
mechanical ventilation
air conditioning
air cleaning
displacement ventilation
mixing ventilation
ventilation air
ventilation effectiveness
ventilation efficiency
ventilation heat loss
ventilation rate
ventilation requirements
vetnilation strategy
ventilation system
gravitational ventilation
neutral zone
RT stack ventilation

ventilation air
BT ventilation (2)

ventilation effectiveness
BT ventilation (2)
RT ventilation efficiency
ventilation requirements

ventilation efficiency
BT ventilation (2)
RT ventilation effectiveness
ventilation requirements

ventilation heat loss
BT ventilation (2)
RT ventilation effectiveness
ventilation efficiency
energy losses

ventilation needs (2.3)
NT indoor climate
air movement
thermal comfort
health
air quality

ventilation rate
BT ventilation (2)
NT minimum ventilation rate
RT air change rate
infiltration rate

ventilation requirements
BT ventilation (2)
RT ventilation strategy
ventilation system
ventilation needs (2.3)

ventilation strategy
BT ventilation (2)
RT ventilation effectiveness
ventilation efficiency
ventilation requirements
ventilation system
ventilation needs (2.3)

ventilation system
BT ventilation (2)
RT mechanical ventilation
ventilation effectiveness
ventilation efficiency
ventilation requirements
ventilation strategy
heating system

W

wall
BT building component (1.2)
NT building envelope
building shape
cavity
party walls
metal stud wall
porous wall
facade
wood frame
RT floor
ceiling
roof
window
door
cavity barrier

water
BT moisture
NT water vapour
damp
RT humidity
condensation

water consumption
BT energy (3)

water vapour
BT water
RT damp
humidity
moisture
condensation

weather
BT climate (4)
NT sun
rain
water
frosting

weatherization USE retrofit

weathersealing USE weatherstripping

weatherstrip
BT weatherstripping
RT draughtproofing

weatherstripping
UF weathersealing
BT retrofit
NT weatherstrip
draughtproofing
RT terrain effects
shielding
sealing
caulking
house doctor
insulation
air infiltration

wind
BT air flow
RT wind speed
wind direction
wind pressure
wind effect
turbulence
convection
wind barrier

wind barrier
RT wind

wind direction
BT air flow
RT dry air
wind
wind speed

wind pressure
wind effect
turbulence
convection

wind effect
BT air flow
RT dry air
wind
wind speed
wind direction
wind pressure
turbulence
convection

wind pressure
BT air flow
RT dry air
wind
wind speed
wind direction
wind effect
turbulence
convection

wind speed
BT air flow
NT mean wind speed
RT dry air
wind
wind direction
wind pressure
windeffect
turbulence
convection

wind tunnel
BT instruments (5)
NT wind tunnel testing
roughness fetch
boundary layer
shear layer

wind tunnel test USE wind tunnel testing

wind tunnel testing
UF wind tunnel test
BT wind tunnel
RT roughness fetch
boundary layer
shear layer

windbreak
BT shielding
NT shade
RT shelter belt
vegetation
trees
fence
hedge

window
BT building component (1.2)
NT double glazing
single glazing
triple glazing
storm window
shutter
blind
RT window opening
open window

window opening
BT occupancy effects
RT occupants
occupant behaviour
occupant control
door opening
open window
comfort
user control

wood
BT building material
RT chipboard
asbestos
wood frame
formaldehyde

wood frame
BT wall
RT building envelope
building shape
cavity wall
party walls
metal stud walls
porous wall
facade
wood

work room
BT rooms (1.1)
RT workplace

workplace
BT rooms (1.1)
RT work room
industrial building
commercial building

X

xenon

BT tracer gas (2.1)

Y

Z

SHORT INDEX TO AIRBASE THESAURUS

computer model
computer room
concentration meter
concrete
condensation
conservatory
constant concentration
constant emission
construction detail
contaminant USE pollutant
controlled ventilation
convection
cooling
correlation
cost effectiveness
crack
crack length
cross ventilation

D

damp
data logger
decay rate
dehumidification
dehumidifier
demand control
demand-controlled ventilation
department store
desert climate
design
detached house
diffusion
disease
displacement ventilation
door
door opening
doorway
double glazing
draughtproofing
draughts
dry air
dry climate
duct
dust
dwelling USE residential building

E

economic analysis
electric heating
electrostatic precipitator
elevator shaft
emanation
empirical models
enclosed shopping mall
energy (3)
energy audit
energy balance
energy conservation
energy consumption
energy economy USE energy saving OR energy conservation OR energy efficiency
energy efficiency
energy losses
energy needs
energy policy
energy saving
envelope house
environment pollution
environmental chamber
ethane
extract vent
extract ventilation
extractor fan

F

facade
factory
fan
fan depressurization
fan pressurization method
fence
filter
filtration
flat
floor
floor coverings
floor heating
flue
formaldehyde
foundation
freon
frosting
fume hood
furnace

G

gamma rays
garage
gas
gas appliance
gas cooking
gas heating
gas stove
grating
gravitational ventilation

Appendix A

Literature Request Form

Literature Request Form

Air Infiltration and Ventilation Centre
University of Warwick Science Park
Barclays Venture Centre
Sir William Lyons Road, Coventry
CV4 7EZ Great Britain

Telephone: (0203) 692050
Fax: (0203) 416306
Telex: 312401 sciprk g

#NO	AUTHOR AND TITLE

Airbase Search Request Form

Subject of search (Please be as specific as possible)_____

_____

_____

Date (I am not interested in papers published before. . .)_____

Language (I am only interested in the following original languages)_____

COPYRIGHT DECLARATION

I have not previously received a copy of this item from any library. I undertake to use this copy for my own research or private study.

Signature:.....Date:.....

Name:.....Organisation.....

Address:.....

.....Country.....

Telephone.....Ext.....Telex:.....

Appendix B

Key fields

AIRBASE

REF

Author

Bibinf

Abstract

Keywords

AIRGLOSS

WORD

DEFINITION

SEEALSO

SURVEY

REF

TITLE

CONTACT

ADDRESS

TEL

EMAIL

SPECIFIC

PROJECT

BUILDING

PARAMETERS

STARTDATE

ENDATE

KEYWORDS

SELECTED

Appendix C

Editor Command Set

The complete set of editor commands for the stand alone editor TED.EXE Supplied with AIRBASE are given below:

Left Arrow Left one character

Right Arrow Right one character

Ctrl + Left Arrow Left one word

Ctrl + Right Arrow Right one word

Up Arrow Up one line in the record/file

Down Arrow Down one line in the record/file

Home Beginning of line

End End of line

PgUp Scroll up 12 lines in record/file

PgDn Scroll up 12 lines in record/file

Ctrl + Home To top of record/file

Ctrl + End To bottom of record/file

Enter/Return Split line at cursor: create new line

Ins Toggle insert/overwrite mode

Tab Tab

Shift-Tab Move the cursor back one tap stop

Del, Ctrl + G Delete character at cursor

Backspace Delete character to left of cursor

^B Reform paragraph/field

^L Find text within record again

^T Delete word to the right of the cursor

^Y Delete line

^KB Mark beginning of block

^KC Copy block to cursor

^KD Exit, saving changes

^KK mark end of block

^KQ Exit, without saving changes

^KV Move block to cursor

^KY Delete block

^OI Set tab width...

^OL Set left margin at cursor

^OR Set right margin at cursor

^OW Toggle word-wrap

Appendix D

Examples of different formats for printers

```
ichar=.
schar=\0
dchar=,

:Airbase
#.\n●Ref●
  \nAuthor
  \nBibinf\n
 \nAbstract\n
 \n▸Keywords▸\n\n\n

:Survey
\nREF
\nTITLE
\nCONTACT
\nADDRESS

:Glossary
\nWORD
\nDefinition
\nSeeAlso
```

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Blacknell J (1989), A Subject Analysis of the AIVC's Bibiographic Database - AIRBASE. (6th Ed).pp159-194. Air Infiltration and Ventilation Centre. Technical Note 25. UK.

THE AIR INFILTRATION AND VENTILATION CENTRE was inaugurated through the International Energy Agency and is funded by the following thirteen countries:

Belgium, Canada, Denmark, Germany, Finland, France, Italy, Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom and United States of America.

The Air Infiltration and Ventilation Centre provides technical support to those engaged in the study and prediction of air leakage and the consequential losses of energy in buildings. The aim is to promote the understanding of the complex air infiltration processes and to advance the effective application of energy saving measures in both the design of new buildings and the improvement of existing building stock.

Air Infiltration and Ventilation Centre

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