



Annex 36 Newsletter

Improving the Learning & Teaching Environment

International Energy Agency - Energy Conservation /Buildings and Community Systems (ECBCS)
<http://www.annex36.bizland.com>

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Annex 36 Meets in Poznan, Poland

October 11-13, 2000

Sixteen participants attended the 3rd expert meeting of Annex 36 at the Poznan Congress Center and the Poznan University of Technology from Denmark, Finland, France, Germany, Greece, Italy, Poland, the U.K. and the U.S. The host, Tomasz Mroz and the O.A. Hans Erhorn welcomed a guest from Lithuania. Lithuania is interested in participating in the Annex.

An open forum was held on the first day where local decision-makers and other technical professional were also invited. The following days the Subtask leaders presented work completed to date and reviewed the progress made in their Subtasks.

A design forum was also held and a case study visit was arranged to two nearby schools. Two technical presentations were made dealing with the design process of buildings. ◀

Getting to know ...

Denmark

First in a series of member country profiles

The main purpose of the Danish research program is to create the essential basis for design and operation of energy efficient schools in the future. The Danish Energy Agency financially supports the program. A determined effort will be made to develop methods to reduce the energy consumption for lighting and ventilation, and at the same time create healthy and stimulating indoor climate always considering the demands of future schools. Also, the solutions should be easy to implement and to use in practice. Agreements are made with Copenhagen and Ballerup municipalities

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Case Studies Needed

Planned Educational Retrofitting

To assist in the development of one of the deliverables of the annex, "CASE STUDIES REPORT", we are requesting information dealing with educational buildings that have undergone energy renovation or retrofitting be submitted for review and evaluation to each countries representative. Contact your Country representative for information required for submission. ◀

and Skanska Jensen A/S about testing in practice.

The total program is subdivided into the following projects:

- ◆ Analysis of energy demands
- ◆ Energy efficient lighting in schools
- ◆ Energy efficient ventilation in schools
- ◆ Prerequisites for energy efficient school buildings
- ◆ Completion and evaluation of experimental building
- ◆ Guidelines for design of energy efficient schools

Background

In the following years, billions of Danish kroner are going to be spent on new construction, rebuilding and outbuilding within the school sector. The Primary Education Act of 1993 acknowledges the approximately 1,700 schools in Denmark being used as municipal primary and lower-secondary schools. An approximate 20% increase in enrollment makes it necessary to provide classroom space for the 110,000 additional pupils in the Danish schools in the ensuing years.

The existing schools are designed from an now obsolete view of children and education. The new Primary Education Act does not make demands on the actual buildings but to the educational activities. This will probably mean a more flexible partitioning of space than at the present and possibly larger rooms,

New construction or renovation of an existing school requires overall planning, where a realization of the intentions of the physical framework in the Primary Education Act is attempted, where the operating and maintenance costs are included. The renovated or newly constructed schools have to be able to change according to the times as a education is not static but develops with the society.

It is necessary to provide information to design and administer future schools in an energy efficient and environmentally acceptable way that at the same time secures good, healthy and inspiring indoor climate conditions. ◀

Denmark Representatives

Ove Christen Mørck

Ove Christen Mørck (OCM) holds a M.Sc. in Physics from the Niels Bohr Institute of Copenhagen University and a Ph.D. in engineering from the Technical University of Denmark. OCM worked from 1978 -1986 on solar and low energy building research topics.

OCM is a specialist in energy saving technologies for buildings and utilisation of solar energy.

He has initiated several major building projects in Denmark, demonstrating energy conservation and solar energy utilisation. He has been project co-ordinator of several Research, Development & Demonstration projects

Currently OCM acts as technical co-ordinator of the targeted THERMIE project MEDUCA, the leader of the Altener project RENARCH and he is the leader of Subtask B – Case Studies of IEA ECBCS Annex 36. ◀

Kirsten Engelund Thomsen

Kirsten Engelund Thomsen graduated with a master's degree in Civil Engineering from the Technical University of Denmark 1981. In the years 1981-98 she worked at the Institute for Building and Energy, Technical University of Denmark, the last 5 years as an associate research professor. Since February 1998 she

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has worked as a Senior Researcher at the Danish Building and Urban Research, in the research group 'Low energy buildings' in the Energy and Indoor Climate Division. Her key research experiences are in the fields of low energy buildings, energy savings in buildings, electricity consumption, demonstration projects and building energy analyses. She participates in IEA Task 13 'Passive Solar Low Energy Houses', IEA Annex 36 'Retrofitting of Educational Buildings', the EU project 'Boilsim' and the EU SAVE project 'European collaboration in relation to Energy Performance Regulation for Buildings and Model Code Development'. ◀

Profile:

Germany

The participation of Germany in Annex 36 is motivated by a national master program called EnSan, the interest of knowing how other countries deal with energetical retrofitting and the idea to share the research work with other participants. The project EnSan has the intention to distribute knowledge on energetical retrofitting e.g. saving potential, costs and technologies and by this to improve the energetical quality existing of the building stock including educational buildings. Therefore a serie of pilot projects are funded as well as special developments of new technologies and new software products concentrated on the early project phase. The national project group is chaired by the Fraunhofer Institute of Building Physics, the leading building research institute in Germany and contents also the HVAC-research department of the University of Stuttgart and the architectural department of the Technical College of Bremen. ◀

Profile:

United States

Today over 53 million students are enrolled in both private and public schools in the United States. The majority of the schools in the US were built before the 1970's when energy was cheap and appeared to be plentiful. The U.S. Department of Energy (DOE) estimates that over \$6 billion dollars (over 6.7 billion Euro's) are expended on energy needs for the country's schools. The US DOE estimates over \$1.5 Billion (1.7 billion Euro's) in energy is being wasted annually and these funds can be leveraged to improve not only the energy efficiency of the schools but also can be used to improve the facility and existing educational needs.

The U.S. participation in the International Energy Agency (IEA) Annex 36 stems from the desire to share and learn technical information about energy efficient technologies used to improve the learning and teaching environment while reducing the need for fossil fuel related energy sources. The Objective of Annex 36 to provide "...tools and guidelines for energy efficient retrofitting for decision makers and designers to improve the learning and teaching environment of educational buildings" is in parallel with the goal of the U. S. DOE Rebuild America Program and its Energy Smart Schools campaign. In sharing and learning the energy efficient methods and technologies used and experienced by member countries in retrofitting (renovation) of educational buildings, will result in better educational environments for the students of today and tomorrow around the world. The work of the Annex in concert with the work of Rebuild America/Energy Smart Schools will establish a foundation for the students of today to construct, operate and maintain, Energy Efficient Educational Buildings in the future. ◀

Visit the IEA Annex 36 website

<http://www.annex36.bizland.com>

Member Listing:

Canada:

John Shaw, National Research Council,
john.shaw@nrc.ca

Denmark:

Ove Mørck, Cenergia Energy Consultants,
ocm@cenergia.dk

Kirsten Engelund Thomsen, SBI Danish
Building Research Institute, ket@sbi.dk

Finland:

Timo Kauppinen, VTT Building Technology,
timo.kauppinen@vtt.fi

Jorma Pietilainen, VTT Communities and
Infrastructure, jorma.pietilainen@vtt.fi

France:

Veronique Richalet, ENTPE,
veronique.richalet@entpe.fr

Germany:

Hans Erhorn, Fraunhofer Institute of Building
Physics, erh@ibp.fhg.de

Heike Kluttig, Fraunhofer Institute of Building
Physics, Hk@ibp.fhg.de

Jan de Boer, Fraunhofer Institute of Building
Physics, jdb@ibp.fhg.de

Fritz Schmidt, University of Stuttgart,
fritz.Schmidt@ike.unistuttgart.de

Raphael Haller, University of Stuttgart,
raphael.haller@po.uni-stuttgart.de

Greece:

Euphrosyne Triantis, National Tech.University
of Athens, Stournas@chemeng.ntua.gr

Italy:

Styliani Fanou, ENEA,
styliani.fanou@casaccia.enea.it

Umberto di Matteo, ENEA,
umberto.dimatteo@casaccia.enea.it

Norway:

Karin Buvik, SINTEF, karin.j.buvik@civil.sintef.no

Mads Mysen, Norwegian Bldg Research
Institute, mads.mysen@byggforsk.no

Poland:

Tomasz Mróz, Poznan University of
Technology, tomasz.mroz@put.poznan.pl

UK:

Richard Daniels, Architects & Bldg Branch
Dept for Ed. & Employment. Richard.
Daniels@bre.co.uk

Sean Lockie, BRESCU, lockies@bre.co.uk

USA:

Lorenz Schoff, US Dept. of Energy,
lschoff@rev.net

IEA Objective

Provide tools and guidelines for energy-efficient retrofitting for decision makers and designers to improve the learning and teaching environment of education buildings by:

- ◆ Development of a compendium of energy related information;
- ◆ Demonstration of the feasibility of energy and environmental concepts for educational buildings in the 21st Century through case studies design guidelines, etc.;
- ◆ Development of software tools to support design makers
- ◆ Compilation Annex research results and transfer to information and use by decision makers and design practitioners via website, new articles, newsletters and collection of existing articles;
- ◆ Provide an electronic interactive source book, Concept Advisor, of case studies, design advice, tools and other data need by decision makers. ◀

Upcoming Meetings

<i>Date</i>	<i>Location</i>
April 23-25, 2001	Palermo, Italy,
October 22-25, 2001	Oak Ridge, Tennessee;
April 2002	Oulu/Helsinki, Finland