



Applying the EPBD to improve the Energy Performance Requirements to Existing Buildings – ENPER-EXIST

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Common Ecobuildings symposium in Berlin, 22/23 November 2005
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Success for the 1st ENPER-EXIST workshop

Existing buildings: Calculation procedures, certification, labelling was the title of the first ENPER-EXIST workshop. Organised on September 21st in Brussels within the International Conference on the Energy Performance of Buildings it attracted about 85 people from various European countries.



Figure 1: The chair of the ENPER-EXIST workshop: J.C. Visier (left) and E. Maldonado (right).

The 10 presentations enabled to discuss three challenges related to the application of the EPBD to existing buildings:

- Define and set up policies applicable to existing buildings
- Develop certification and regulation schemes which are applicable to existing buildings
- Maximising the impact of certification

E. Maldonado presented the issues on which the Member States work together within the EU Concerted Action project. The presentation of 4 European projects ENPER-EXIST, EPA-NR, EP Label and Best Cert highlighted the technical challenges to address in order to develop certification schemes. The presentation of Home Energy Rating Services in the United States attracted a lot of questions from the European Audience. Finally, the presentation of the BUDI, IMPACT and STABLE projects showed that certification testing and dissemination is on its way.

The ENPER-EXIST project offered to use a matrix enabling to better highlight the interactions between the different

projects in order to defragment the work performed by the different teams (s. figure 2).

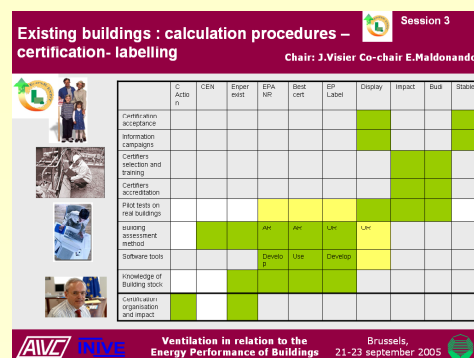


Figure 2: Matrix showing the interaction between the different European projects working on EPBD items.

The papers presented during the workshop as well as the slides and the final summary are available on the ENPER-EXIST website.

written by: J.C. Visier, CSTB
further information: www.enper-exist.com

Contact: Jean-Christophe Visier (Coordinator of ENPER-EXIST)
Centre Scientifique et Technique du Bâtiment (CSTB)
e-mail: enper-exist@cstb.fr

The EU Green Paper

In June, the Commission has adopted the *Green Paper on energy efficiency*. The Green Paper proposes an ambitious programme with the objective of achieving cost effective energy savings for Europe of the order of 20% of the EU's current energy use. This means reducing the amount we spend on energy, mainly imported hydrocarbons, by € 60 billion per annum or the combined energy consumption of Germany and Finland. Instead, this money would be invested in energy efficient equipment and services, in which Europe is a world leader.

A public consultation is foreseen till March 2006. A total of 25 questions are put forward. Some of these questions regard the building sector with a link to the existing buildings, e.g. question 9:

The EU Green Paper (cont.)

"Giving incentives to improve the energy efficiency of rented accommodation is a difficult task because the owner of the building does not normally pay the energy bill and thus has no economic interest in investing in energy efficiency improvements such as insulation or double glazing. How could this challenge be best addressed?"

written by P. Wouters, BBRI

further information:

http://europa.eu.int/comm/energy/efficiency/index_en.htm

Contact: Peter Wouters
Belgian Building Research Institute (BBRI)
e-mail: info-enper_exist@bbri.be

Work package 2 of ENPER-EXIST: Legal, economical, organisation impact

The objective of this work package is to study and analyse the non technical issues related to the application of certification and regulation of existing building processes in the Member States and mainly the financial, educational and administrative aspects. In parallel, to propose specific actions to be undertaken in order to create a more positive environment for the application of certification processes

- Task 1: The impact of certification processes in the market
- Task 2: The impact of the certification schemes on the Human Capital
- Task 3: The impact of the certification process on the national administrations.

A study is carried out in the participating countries to identify the main economic impact of the applied certification processes in the market. In particular the direct and indirect cost of the certification processes, (figure 1), are under calculation and their impact on labor is under evaluation. In parallel, the possible economic schemes to be developed in order to finance the application of certification schemes are studied. The specificities of each country are under analysis and suggestions for better adaptation of the financial mechanisms are under preparation.

In the second task the impact of the applied certification schemes to the human capital of each participating country is analysed. In particular the number of certifiers is estimated together with the necessary educational and training effort. The characteristics of the certifiers body as well as the accreditation schemes are under analysis.

The third task aims identify the possible organisations in order to better support the application of the certification schemes in the countries. A study is actually carried out to identify the new structures to be created, the actions to be undertaken to stress the process at a local level, the processes for data collection and the necessary actions to raise awareness in each participation country.

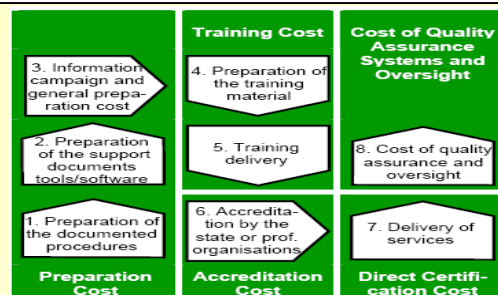


Figure 1: Scheme of the economical impact of the EPBD.

written by: M. Santamouris, NKUA

further information: www.enper-exist.com

Contact: Mat Santamouris
National and Kapodistrian University of Athens (NKUA)
e-mail: msanadm@cc.uoa.gr

German standard DIN V 18599 publicly available

The series of regulations DIN V 18599, the German implementation of Article 3 of the EPBD provides a complex method to assess the total energy efficiency of buildings (see also ENPER-EXIST Newsletter 1). The 10 standard parts are now available at Beuth publishing in German language.

written by H. Erhorn-Kluttig, FhG-IBP

further information: www.beuth.de

Germany launches field study on EPBD implementation for non-residential buildings

After the successful field study for residential buildings the German ministry of transport, buildings and housing has charged the dena (Deutsche Energie-Agentur) to start a similar but smaller field study for non-residential buildings. The study shall test the practical applicability of the German standard DIN V 18599 and the necessary effort for the building inspection.

Nearly 50 buildings were selected out of an applicant list, with different usage, age and locations. Up to November the buildings will be certified by an "Energiepass" according to DIN V 18599. An external institute will evaluate the study with the following key aspects:

- practical applicability of the technical standards
- review of the possible simplifications for the building inspection and the calculation
- effort for the certification and the building inspection
- comprehensibility of the certificate and the impact on the public of the placement of certificates at a prominent place

In parallel to the study on the method of the asset rating the operational data of the participating buildings will also be collected and evaluated.

written by H. Erhorn-Kluttig, FhG-IBP

further information: www.gebaeudeenergiepass.de

Contact: Heike Erhorn-Kluttig
Fraunhofer Institute of Building Physics
e-mail: hk@ibp.fhg.de

French implementation of the EPBD

1. The French context

France has a strong history in setting thermal regulation but only in new buildings and some cases of extensions, on contrary France never brought into law any thermal requirements for existing buildings, it has favoured voluntary improvement through a dedicated policy for renovation implemented by ADEME (French Agency of Environment and Energy Management) who provides recommendations and subsidies. In 2004, the climate plan was adopted. It's an action plan drawn up by the French Government to respond to the climate change challenge, firstly by 2010 (complying with the Kyoto Protocol target), and, secondly, beyond this date. The French government shares the objectives of the Energy Performance of Buildings Directive (EPBD, Directive 2002/91/EC). The ministry of housing with the ministry of industry continue to work together for the transposition of the directive in link with the national strategy of sustainable development.



2. The state of progress in the transposition of the directive

• Methodology of calculation (article 3):

The calculation method of energy performance is in accordance with the framework of the annex in particular thermal solar and photovoltaic systems are taken into account. This calculation method will be the basis for new buildings regulation and partly for the energy performance certification. CEN standards or drafts were taken into account as much as possible when available.

• Requirements for new buildings (article 5):

Over the past 30 years, regular revisions and tightening of thermal regulations have been implemented. In order to meet the gap between France's projected carbon emissions and their Kyoto commitment, the government introduced more stringent efficiency regulation applied to new buildings since June 2001 (RT2000). Always for limitation of CO₂ emissions and for accordance with the EPBD, a new regulation (RT2005) has been prepared; its application is foreseen for September 2006. The general framework of the RT2000 (energy consumption and summer comfort) is maintained with additional requirements, in particular:

- Introduction of maximum energy consumption per m² for some buildings category
- enhancement of the impact of renewable energies
- enhancement of the bioclimatic design
- inclusion of cooling: The calculation method takes into account cooling consumption. The requirements aim to reduce the use of cooling
- increase of the level of RT2000 requirements

• Requirements for existing buildings (article 6)

The whole disposition for existing buildings was approved by official text (law n°2005-781 of July 13th

of program fixing the orientations of the energy policy – article 27). The article specifies that:

- a decree will determine the energy performance requirements for existing buildings when retrofitted depending on building category, renovation type and the rate between the cost of retrofit measures and the value of the building.
- a decree will determine the category of existing buildings for which before the renovation, a study of technical and economic feasibility of alternative systems of energy supply based on renewable energy must be done.
- a decree will determine the requirements of new equipments when installed in existing buildings depending on buildings category.

• Energy performance certificate (article 7)

The whole disposition for implementation of energy certification of buildings was approved by official texts (law n° 2004-1343 of December 9th 2004, Ordonnance n°2005-655 of June 8th 2005). The main elements are the following:

- The energy performance diagnosis (energy performance certification) of buildings will come into force on July 1st 2006 in case of sale of building or part of building and on July 1st 2007 in case of rent of building or part of building. These dispositions concern the residential and no residential buildings
- In the event of sale, the energy performance diagnosis is a part of a whole global technical diagnostic of building that include a diagnosis of lead (only for residential buildings), diagnosis of asbestos, diagnosis of termites, diagnosis of interior installation of gas (only for residential building) and diagnosis of technological risks.
- The energy performance diagnosis must be carried out by a person presenting guaranties of competence and having an organisation and appropriate resources. This person must be covered by an insurance against the consequences of her professional responsibility. It is also made obligation to be independent and impartial. The criteria of competence will be defined by a decree.
- The energy performance diagnosis will have only an informative value. With the difference in other diagnoses, like the diagnosis termites or the diagnosis lead, the purchaser or the tenant will not be able to prevail itself about it against the owner.

• Inspection of boilers and air-conditioning systems (articles 8 and 9)

The whole disposition for inspection of boilers and air conditioning systems was approved by official text (law n°2005-781 Law of July 13th of program fixing the orientations of the energy policy – article 27). The article specifies that regular inspection of boilers and air conditioning systems must be done when the effective rated output exceeds more than a fixed value (will be specified in a future decree).

written by: Rofaida Lahrech, CSTB

further information:

<http://www.ecologie.gouv.fr/IMG/pdf/PLANCLIMATANGLAIS.pdf>

Contact: Rofaida Lahrech

Centre Scientifique et Technique du Bâtiment (CSTB)

e-mail: enper-exist@cstb.fr

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Participants in ENPER-EXIST:

Centre Scientifique et Technique du Bâtiment (CSTB)
Jean-Christophe Visier
Rofaïda Lahrech
Ahmad Husaunndee
www.cstb.fr

Netherlands Organisation for Applied Scientific Research (TNO)
Dick van Dijk
Marleen Spiekman
www.tno.nl

Fraunhofer Institute for Building Physics (FhG-IBP)
Hans Erhorn
Heike Erhorn-Kluttig
www.ibp.fhg.de

National and Kapodistrian University of Athens (NKUA)
Mat Santamouris
grbes.phys.uoa.gr/

Statens Byggeforskningsinstitut (SBI)
Kirsten Engelund Thomsen
Søren Aggerholm
www.sbi.dk

Belgian Building Research Institute (BBRI)
Peter Wouters
Xavier Loncour
Dirk van Orshoven
www.bbri.be

EBM-consult
Bart Poel
Gerelle van Cruchten
www.ebm-consult.nl

Energy for Sustainable Development Ltd. (ESD)
Robert Cohen
www.esd.co.uk

Please visit also the website of ENPER-EXIST:
www.enper-exist.com

Belgium (Flemish Region): Rules adopted to become energy expert for dwellings

On 17 June 2005 the Flemish Government adopted the rules applicable for becoming recognized energy expert for dwellings at the level of the Flemish Region.

The recognized experts will be allowed to apply the energy advice procedure (EAP) which gives on a voluntary basis energy advice about existing single family houses. Energy experts that can demonstrate their experience in this field can be recognized. The other way is to take training courses followed by exams.

The EAP currently launched at the Belgian level is a first important step towards the mandatory energy certification of existing residential buildings in case of sales or rent.

written by X. Loncour, BBRI
further information: www.energiesparen.be

Contact: *Xavier Loncour*
Belgian Building Research Institute (BBRI)
e-mail: info-enper_exist@bbri.be

Common Symposium of EU FP6 Eco-buildings projects in Berlin

On November 22-23, 2005, the 4 different FP6 Eco-buildings projects BRITA in PuBs, DEMOHOUSE, ECO-CULTURE and SARA will present their first project results and are open for discussion with the audience.

The Eco-buildings concept is expected to be the meeting point of short-term development and demonstration in order to support legislative and regulatory measures for energy efficiency and enhanced use of renewable energy solutions within the building sector, which go beyond the Directive on the Energy Performance of Buildings. The projects aim at a new approach for the design, construction and operation of new and/or refurbished buildings, which is based on the best combination of the double approach: to reduce substantially, and, if possible, to avoid the demand for heating, cooling and lighting and to supply the necessary heating, cooling and lighting in the most efficient way and based as much as possible on renewable energy sources and polygeneration.

BRITA in PuBs aims to increase the market penetration of innovative and effective retrofit solutions to improve ener-

gy efficiency and implement renewables with moderate additional costs. This shall be mainly realised by the exemplary retrofit of 9 public demonstration buildings. SARA plans to construct 7 sustainable cost effective high energy performance public access buildings. ECO-Culture addresses demonstration of energy-efficient technologies integrated into three new-build cultural Eco-buildings. The DEMOHOUSE project will develop minimum standards and recommendations in connection to healthy, cost-effective, energy-efficient and sustainable rehabilitation of dwellings.

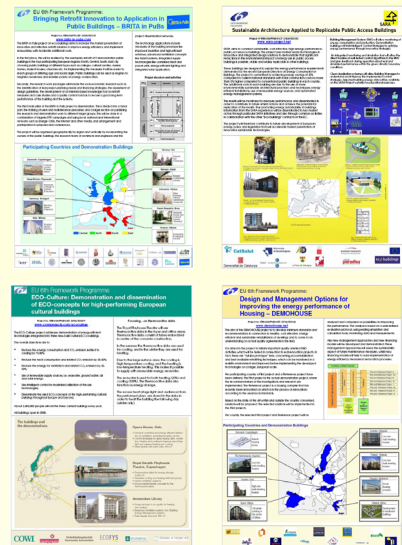


Figure 1: Posters of the 4 Eco-building projects.

The Symposium will feature presentations of project approaches, first results on ecobuildings design, realisation and technologies as well as information on EU and German policy and strategies in the field of energy efficiency of buildings. An official dinner will take place in the locomotive shelter and will be accompanied by an interesting guided tour through the museum.



Figure 2: Location of the Eco-buildings symposium: Deutsches Technikmuseum Berlin

written by H. Erhorn-Kluttig, FhG-IBP
further information and registration:
www.brita-in-pubs.com

Contact: *Heike Erhorn-Kluttig*
Fraunhofer Institute of Building Physics (FhG-IBP)
e-mail: hk@ibp.fhg.de