EEBD

Electronic Energy Buildings Directive

A comprehensive web-based information platform for experts for the take-off of the EU Buildings Directive

The EEBD project : "Development of an interactive vocational Web training tool for the take off of the buildings DIRECTIVE 2002/91/EC", supported by the European Commission's Intelligent Energy – Europe Programme develops a vocational dynamic tool that will provide a suitable mean to obtain the technical competence that allows better understanding and using the DIRECTIVE 2002/91/EC and the relevant national regulations.
This is the 2nd information brochure, aimed at presentsing details about the progress of the EEBD project and highlighting the forthcoming actions and invents.

Electronic Energy Buildings Directive

Intelligent Energy Europe

Overview of EEBD project

The EEBD project aims to a make contribution to the take-off of the European DIRECTIVE 2002/91/EC through developing a web-based dynamic vocational training tool. The main phases of the project include:

- An overview of the vocational training needs throughout Europe. This phase comprises the formulation of the static part of the tool, the initial determination of the specifications of the interactive part of the tool based on the end users' response and the involvement of the end users in the preparation of the vocational training tool.
- Preliminary development of the vocational tool in its static format, which includes the syllabus and the methodology of the tool and determines the basis of the interactive (dynamic) part of the tool.
- Development of the dynamic part of the EEBD tool, which also comprises the final definition of the specifications of the tool.
- Evaluation and testing of the EEBD tool, a phase that includes the definition of testing criteria, the testing activities (by academic experts and professionals) as well as the evaluation and final improvements of the tool. The final version of the tool will be available in English, French and German languages.
- And finally, dissemination activities as far as concerns development of brochures, presentation of the tool in conferences (CLIMA 2005 and CLIMA 2007) by organizing dedicated workshops and organization of virtual classrooms.

The first two phases have already been completed and the phase that concerns the development and testing of the dynamic part of the tool is still in progress.

Overview of the vocational training needs

An extensive survey had been performed during the early stages of the project. This work includes both the analysis of the profile of the potential users of the tool as well as the required training needs of the potential users. The potential end users of the projected vocational tool were targeted among different concerned professions:

- ✓ Building designers and architects
- ✓ Civil engineers
- ✓ Mechanical engineers
- ✓ Electrical and Electronic Engineers
- ✓ Building experts
- ✓ Building services engineers
- ✓ Building managers and planners
- ✓ Postgraduate students in the energy efficiency in buildings.

In order to complete the defined objectives, a questionnaire was designed and disseminated to the potential end users of the vocational tool in seven languages: English, French, Finnish, Greek, German, Bulgarian and Russian. A contact list of these end users was elaborated, and these professionals were questioned in different ways. Finally, the obtained results regarding end users' origin and profession were analysed. This questionnaire was designed in order to take a census of:

- The end users' professional profiles
- The knowledge level of the Directive, globally and with some specific questions
- The information level of the end users
- Their specific need about the EPBD Directive
- Their interest in the EEBD project.

In total 950 responses were obtained from a range of European countries.

The collected information shows that in the fields of Architecture or building design as in electrical/Controls/IT area and among students, the level of information is the lowest (around 23%). The energy consultants look to be the best informed (35% already attended a meeting and 36% got informed of further trainings or seminars).

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Overview of the vocational training needs

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All these categories are highly interested in the future use of this project, except for the students (82%) and others' category (82%) a part of which is not directly concerned by the Directive. Whereas the levels of information (between 20 and 30%) and the levels of interest (around 85%) vary slightly between employer's categories and areas of expertise.

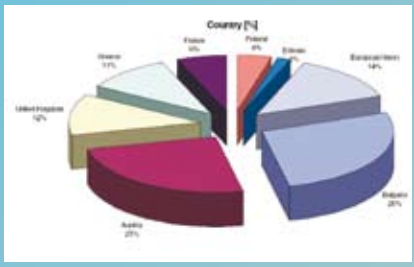
This analysis of the different information needs of the survey participants highlights a lot of demands for general information and trainings (41.3%). Also, the calculation methods and the software use (17.7%) concern mainly designers who are the largest part of the survey, as well as the certification procedure (20.5%), which concerns all professionals' categories, as this will be the actual result of the different studies and/or controls.

In order to target the training needs regarding the prerequisite of the potential end users, a question was asked about the practice of Energy performance. The question was: "*Do you already take in account energy performance in your projects? If yes, by building specifications? Manual calculations? Computer simulations?*" According to the responses the computer simulation is preferred to the manual calculation and the building specifications (except for the students). The manual calculation and the building specifications are globally used in a same proportion, around 18%. The highest level of energy performance consideration is found to be among the HVAC, energy consultant's and students categories (64%).

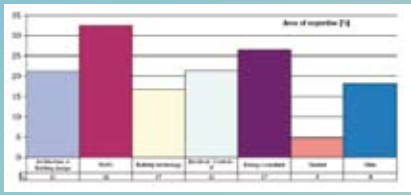
Finally, as far as the global assessment of the Directive's knowledge is concerned, depending on the area of expertise the results of the survey highlight the fact that the less informed targeted category is in the area of expertise of architecture and building design (57%) and electrical/controls/IT (56%), whereas the energy consultants are the best informed with a level of 69%.

The number of responses in the different European regions (950 responses) makes the data statistical analysis per country uncertain, but crossed analysis can be valuable in order to target future developments.

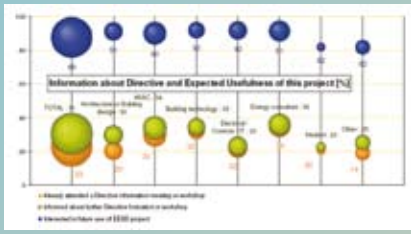
As it has been noticed from opened questions, the projected training tool appears to respond to a real demand, whatever is the area of expertise and the European region. Energy performance is not equally considered, but the major part of the questioned people are interest in further information and the use of the EEBD tool. However large differences of the Directive knowledge were observed, depending on the professional's profile defined by the employer's category, the area of expertise and the country.



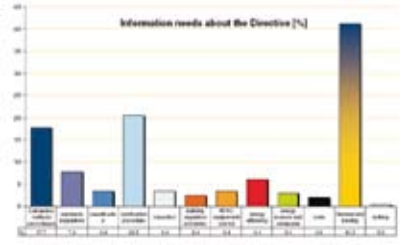
Repartition of the questionnaires' answers by country



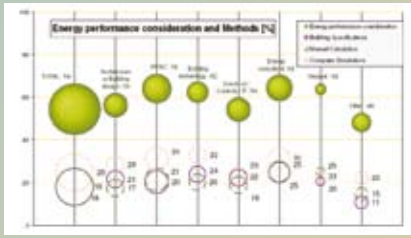
Area of expertise of the interviewees



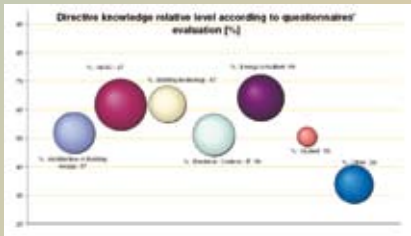
Information about the Directive by meeting or seminars and interest in the use of the EEBD project, repartition for area of expertise



Analysis of the different identified information needs about the Directive



Energy performance consideration and methods vs. expertise area



Level of Directive's knowledge vs. area of expertise

Finally, specific information appears to be necessary in order to answer the specific demands depending on each professional profile, as in the chosen language for the tool.

The results of these questionnaires will be the basis for the vocational training tool design, but it will also initiate a valuable feedback habit for training content and the regular update of end user needs in order to keep the future dynamic training tool up to date. In all professional categories and in all countries, it appears that general information is needed on the Directive 2002/91/EC. The training tool should answer this demand by information on the modality of Directive's set up and specificities in the different countries. There is a lot of curiosity about regional differences in reg ulations and energy performance in buildings. Then this static part of the tool could cover all European regions for general Directive's information, whereas more specific part would be accessible to the different areas of expertise (who are also curious about their field in other countries), and finally the most specific part would be accessible for the specific end user demand.

There is a lot of specific information demanded, depending on the potential end users' profile. However the presented results highlighted two most important demands that should appear for most end users (with details depending on the professional's profile): calculation methods and software used as well as certification procedure.

This demand can be linked to some questions about the standards' evolution and the regulation's consequences, particularly in the different national regulation's contexts. This demand is also about the possible set up of simulation software or new regulation software according to these new standards. Actually, these two points are often cited as this demand correspond to the tools (the methods and software), the procedure and the consequences (certification) linked to this Directive on energy performance; this is a demand about the Directive's functioning.

Finally, the vocational training tool should respond from general information's demand to specific demand by area of expertise and by country. This could be translated in the vocational training tool by a more general part, which will be mostly static whereas the dynamic part will be more specific, regarding the evolution of end users' specific demands.

e-EPBD web tool

The training tool has been developed in two forms. The first form (Form A) is developed under «Lotus Learning Management System» (LMS) software, while the second one (Form B) under «.NET framework» platform for supporting flexible content management. Each form supports actually a different educational philosophy of the training material and the final user can choose the form that suits best to his/her needs. In both forms the educational and training material is organized under a user-friendly approach in different fields. Each field is actually an interactive platform (i.e. a web site) for all the involved users in a specific training module. Each one of the forms contains up to date educative material, forums, libraries and data bases, search engines, access to other web tools and a helpdesk in order to included information and material for additional countries not included in the provided tool. The register procedure for the both forms of the tool is essential for full access to the material (name, surname, profession, etc). Additionally, for the second form, abstracts and tables of contents for each training module are available without registration. The trainee has the ability to choose any country and to access the relevant information. Each module can be evaluated through a rating procedure and can optionally provide comments. The home page also includes «Suggested Reading» field. This section includes the most popular training modules based on the evaluation and is divided to the following categories: (i) Top rated fields (ii) Special fields according to the profession, while in the Form B of the tool additionally includes (iii) Links to material that has been added recently. The final tool of Form A has a listed structure with specific paths while Form B includes a tree structure changing dynamically. The structure of the tool consists of the dynamic part, which is still under development and the static part namely only the boxes without the links between them or/and small groups of linked boxes referring to the different groups of interest (case studies for each group). The innovative part of the described vocational training tool is its approach to the potential trainees. The dynamic part, involves the administration and self-adaptation of the e-learning vocational tool to the users' comments and requirements for both forms. The objective of the dynamic part is to automatically adapt the structure of the modules offered to a specific group of users, i.e. mechanical engineers, civil engineers, etc. Both forms of the educational tool are available on-line (Form A: http://tool.eebd.org and Form B: http://training.eebd.org) and up to now provides information regarding the European Directive for the energy performance of Buildings (2002/91/EC) in two general formats:

- Review of the Directive (2002/91/EC) and the legislative rules regarding the energy efficiency of buildings for most of the European countries.
- Access to detailed educational material for all the Articles of the Directive for Austria, Bulgaria, France and United Kingdom. Until now contents are available in English but the final version will also include French and German languages.

It is remarkable that Form B of the tool is designed in a way that can support future expanding or include new Directives regarding the energy performance in buildings. The general structure of the tool includes:

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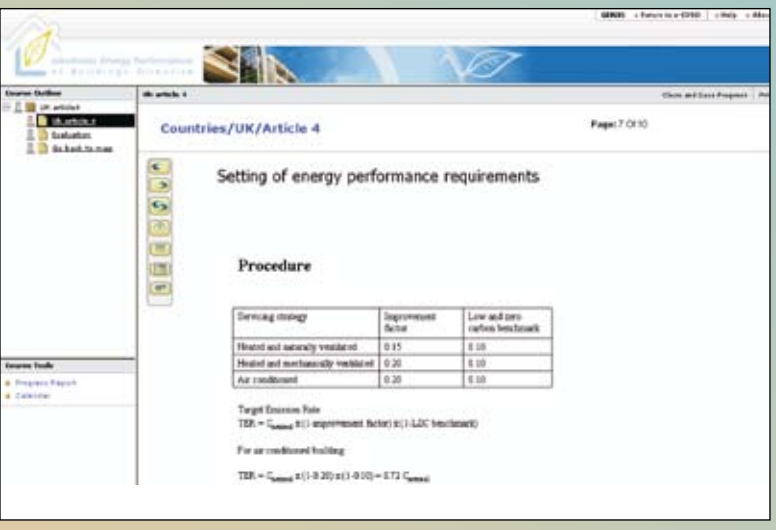
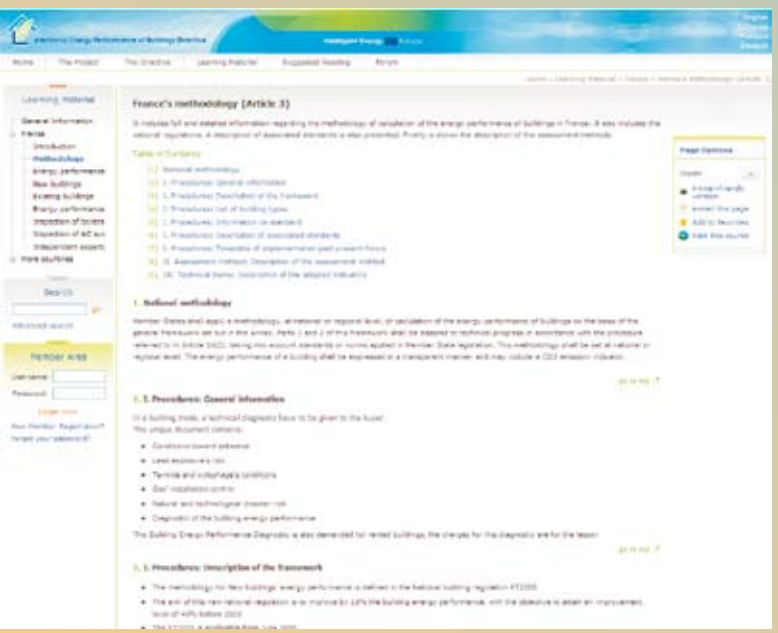


Sample page of Form A module of the tool



Sample page of Form B module of the tool

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- Detailed presentation of DIRECTIVE 2002/91/EC
- Learning material (in overview and detailed format) organized per country
- Suggested reading section where the information is organized according to the rating of the users in two categories: Overall top rated and Profession's area top rated
- A forum where the users can exchange information and discuss related to the building energy performance regulations subjects
- An administrator tool which is the section where the authors of the learning material should connect in order to manage the material provided by the tool

The whole concept of the tool is to be open, flexible and interactive. There are two different kinds of users that both require registration:

- Simple user category, which concerns users interested to be informed about the building energy performance regulations around Europe.
- Administrator user category, which refers to the potential authors of the web tool content

Workshop

WellBeing Indoors
CLIMA 2007 10-14 JUNE • HELSINKI • FINLAND

The workshop is hosted by the Clima 2007 Conference that will take place from 10 - 14 of June 2007 in Helsinki, Finland (http://www.clima2007.org). The congress deals with the healthy and productive indoor climate, the comfort and safety by modern piping systems, the sustainable energy use of buildings and the intelligent building management. The workshops at the Clima 2007 are organised by REHVA.

Topic

e-EPBD: A web based learning tool for the Energy Performance Buildings Directive

Chairpersons

D. Kolokotsa, F. Allard

Objective

The objective of the workshop is to present to the interested parties the results of the EEBD project in the development of a web based vocational training tool for the EPBD

Who should participate in this workshop

Scientists and Consultants, Owners and managers, Builders and Manufacturers, Governmental officials

Preliminary programme

The programme will be available on the official site of Clima 2007 (http://www.clima2007.org)

EEBD Partnership

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Official web site of the project: http://www.eebd.org
Web address of Form A module of the tool: http://tool.eebd.org
Web address of Form B module of the tool: http://training.eebd.org