

# LESO-PB

**A new Online Course in Building Physics and  
Sustainable Development (Software)**

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**CISBAT 2001**

***3 - 4 octobre 2001***

# **A NEW ONLINE COURSE IN BUILDING PHYSICS AND SUSTAINABLE DEVELOPMENT (SOFTWARE)**

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## **ABSTRACT**

This pre-sessional catch-up module is offered by the European Master in Architecture and Sustainable Development. It will be delivered online and is designed for individual work. Its main challenge is to provide learners of very different levels of knowledge in building physics with a tool that allows them to refresh, practice or study almost from scratch a strongly technical content. It can be accessed with Internet Explorer or Netscape via the Master's website.

## **INTRODUCTION**

The aim of the European Master in Architecture and Sustainable Development is an in-depth exploration of sustainable theories and practice in architecture, climate, energy, environment and urbanism.

The Master is organised for building professionals by a group of six higher education institutions from France, Switzerland, Belgium, Italy, Spain and Canada and is based on a two-year partially residential program. Past experiences have shown that the level of theoretical knowledge and practice in the field of sustainable development was very different from one participant to the other. As such a variety of backgrounds had consequences on the ability of some students to successfully follow the postgraduate program, it was decided to offer a pre-sessional catch-up module. This module will be delivered online using WebCT and is designed for individual work. Its main challenge is to provide learners of very different levels of knowledge in building physics with a tool that allows them to refresh, practice or study almost from scratch a strongly technical content.

## **INDIVIDUAL LEARNING**

Learners with recent knowledge in physics will be presented with a 5/10-hour quiz that allows the teachers to evaluate areas which should be further explored. Students established in professional life for long are offered a 40-hour theoretical tour. And architects from schools without a strong option in this discipline will have the possibility of studying from a printed manual in conjunction with the online component. The course will also work as a link with and between the students of the Master's previous editions.

The catch-up module is designed for distance learning only. No support will be available, since candidates will use this tool before formal acceptance in the program. It is not compulsory, though strongly recommended to anyone willing to enrol for the Master. The progression and result of the applicants' work will be taken into account during the enrolment procedure, and would be used as a criterion to evaluate borderline cases.

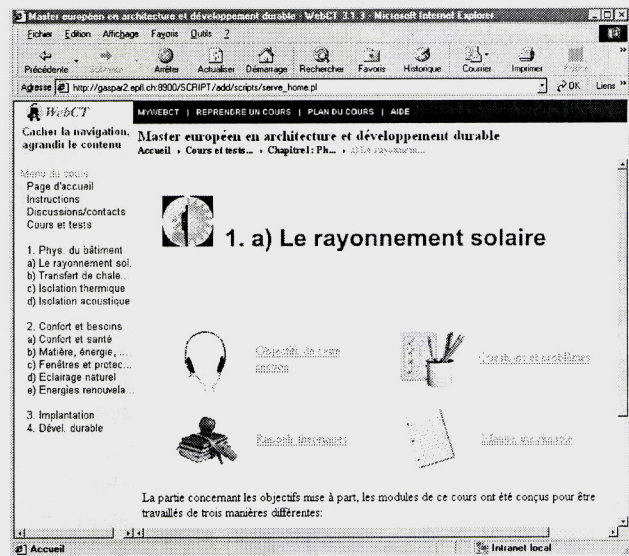
The learning material is organised in four chapters, which the online students can study according to their needs. Each chapter is composed of several sections accessible either directly from the navigation bar or through the content pages.

## CONSISTENCY AND INTERACTIVITY

The course is based on the idea that students who already have the required knowledge should not be kept reading online unnecessarily, whereas candidates who need explanations should not be allowed to skip them. Therefore, the core of each section is a quiz, composed of questions and problems to solve. In case of need, theoretical reminders and references can be accessed straight from the question, but the bulk of the material is given in the form of detailed feedback to the student's answers.

All 14 sections are provided with the same learning tools:.

1. **A brief audio-visual introduction**, with the voice of the teacher summarising the main points of the section and relating them to building professional practice,
2. **An 8 to 10-question quiz**, the main learning tool,
3. **A set of theoretical reminders**, also accessible from the quiz,
4. **A printable handbook**, to allow those with no previous knowledge to study offline before completing the module.



## FEEDBACK AND VISUAL ENHANCEMENTS

Well designed quizzes ensure that the student's attention is not lost on the way. In the case of this course, the aim is not to pass an exam but to study through the questions and their feedback. Special attention has been given to the format of the questions, which varies as much as possible with the tested type of reasoning.

Multiple choice and matching questions that point up typical errors are mixed with short answer questions that ask for calculation. Sometimes, the student is also asked to print out the wording of a problem, to draw the solution on paper and then to enter the result into WebCT. Feedback provides a powerful means to guide students through learning. A carefully-worded question or problem gives the teacher the chance to point out the more foreseeable errors of understanding and to explain at which point of the reasoning they occurred.

According to the motto “show rather than tell”, the option for this course was to limit online reading as much as possible. Since it is designed as a tool for the refreshment of previous knowledge rather than for initial study, an effort was made towards visual attractiveness and clarity. As often as possible, but within the limits of time allocated to this project, small size images and simple animations have been used to enhance interactivity.

This course will be available online from December 2001.

URL: <http://madd.epfl.ch> (follow link “Cours en ligne”)