



BETTER BUILDING

Certifying VET teachers as Energy Saving Advisers
A transfer system into three different European societies

Modular curriculum and teaching materials **– Italy**

Executive summary





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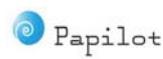
The project partnership:

- IAL Emilia Romagna, Bologna, Italy (Project promoter)
- BEST Institut für berufsbezogene Weiterbildung und Personaltraining GmbH, Vienna, Austria (Coordinator)
- Fundatia Romano-Germana CPPP, Timisoara, Romania
- GLOBALTraining and Consulting, Istanbul, Turkey
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Summary of the modular curriculum and teaching materials

The training curriculum is made up of 13 training modules. The hours length of every training module presented in the following table is an approximation of the real module duration and it is a sort of range between the lowest and the highest hours number required. This underlines that the didactic organization of each training part needs to be very flexible and adaptable.

	Training modules	Hours
1	Interactive effects between construction and environment	8
2	Legislation and regulations regarding old and new buildings	6
3	The energy balance of the buildings: habitability and thermic parameters	10
4	Heat insulation in buildings	40
5	Basic knowledge of conductivity in building components	20
6	Insulating materials regarding the thermo technical reconstruction of buildings	30
7	Condensation and humidity in buildings	8
8	The economic feasibility of additional heat insulation	18
9	The use of sustainable resource energies (RES) in construction	12
10	Recycling of construction waste following reconstruction measures	6
11	The market opportunities for an ecological buildings construction (ESCO, legge finanziaria, etc.) .	5
12	Communication	7
	Total	170



Training module 1

Interactive effects between construction and environment

<i>Aims</i>	<i>Topics of advanced training</i>
<p>The trainee is to understand the influence of fuel consumption on the environment and comes to know the possibilities users have to influence the energy consumption of buildings as well as the interactions between environmental protection and construction work.</p> <p>Thanks to the presentation and explanation of examples and good practices of bioenergetic and bioclimatic architecture.</p>	<p>1.1 Introduction to climatology and its relationship with construction</p> <p>1.2 Bioclimatic design and architecture</p> <p>1.3 Good practices of bioenergetic and bioclimatic architecture</p>

Training module 2

Legislation and regulations regarding old and new buildings

<i>Aims</i>	<i>Topics of advanced training</i>
<p>The trainee should get an overview of Italian legislation, standards and regulations of construction and building utilisation regarding energy consumption.</p> <p>The trainee is to know the new and specific national regulations and guidelines regarding energy consumption of buildings</p>	<p>2.1 Italian regulation for the energetic saving</p> <p>2.2 Order 22 January 2008, n°37</p>



Training module 3

The energy balance of the buildings: habitability and thermic parameters

<i>Aims</i>	<i>Topics of advanced training</i>
<p>The trainee will get general knowledge about the present energetic qualifications of a building, how to check the energetic and environmental impact of houses and take measure to improve the buildings energetic sustainability.</p> <p>The trainee will be able to know and understand the most important and climatic parameters useful to build or reconstruct energy efficient buildings.</p>	<p>3.1 Energetic Certification: a building check-up</p> <p>3.2 Useful climatic parameters in buildings</p>

Training module 4

Heat insulation in buildings

Materials technologies for the thermo technical reconstruction

<i>Aims</i>	<i>Topics of advanced training</i>
<p>Thank to technical schedules the trainee will know the different aspects and properties of many insulation materials used in construction and will be able to make comparisons between them in terms of heat insulation</p>	<p>4.1 Theory Schedule "heat insulation in buildings"</p> <p>And Energetic performances of building panels</p> <p>4.2 Actions of thermic improvements in construction</p>



<p>capacity and environmental impact.</p> <p>An improvement of the energetic performances of the existent building panels, their insulation efficiency, application fields and law regulations.</p> <p>Thanks to particular examples of applications for the trainee will be possible to understand the theory in a better and more successfully way</p>	<p>4.3 Examples of applications</p>
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Training module 5

Basic knowledge of conductivity in building components

<i>Aims</i>	<i>Topics of advanced training</i>
<p>The trainee should be able to explain the basic principles of heat transmission and heat admission of building panels.</p> <p>The trainee is to understand the thermal balance and to conduct the calculation of thermal balance of a building.</p> <p>The trainee will have the possibility to check and improve the acquired knowledge with provided exercises and applications</p>	<p>5.1 Heat Transmission 5.2 Applications</p>



Training module 6

Insulating materials regarding the thermo technical reconstruction of buildings

<i>Aims</i>	<i>Topics of advanced training</i>
It will be possible for the trainee to improve the specific knowledge on insulating materials from a very technical point of view and to get more detailed information about the favourite insulating materials used in bioenergetic construction	6.1 The Insulating materials 6.2 Insulating materials for the bioenergetic construction

Training module 7

Condensation and humidity in buildings

<i>Aims</i>	<i>Topics of advanced training</i>
The trainee is to know the air humidity and building material humidity and identify the respective effects on buildings as well as the thermal pre-conditions of the buildings. The trainee is to know the causes of formation of condensate and recommend measures of prevention or solution for the resulting phenomena	7.1 The condensations phenomena inside the buildings 7.2 The technological solutions



Training module 8

The economic feasibility of additional heat insulation

<i>Aims</i>	<i>Topics of advanced training</i>
<p>From a very detailed and scientific way they will be introduced and explained the possibilities of saving money and energy by heat insulation actions.</p> <p>By calculating the trainee should be able to demonstrate certain advantages of a thermo technical reconstruction and a list of good examples and practices will sustain and make understand the theoretical concepts.</p>	<p>9.1 Good Reasons for heat insulation</p> <p>9.2 Good practices</p>

Training module 9

The use of sustainable resource energies in construction

<i>Aims</i>	<i>Topics of advanced training</i>
<p>The trainee will know the many different applications of sustainable resource in construction and the opportunities of energetic and economical saving.</p> <p>In particular it will be proposed an overview of the Italian situation about the theme of energetic efficiency and the use of sustainable resources in construction.</p>	<p>10.1 The energetic saving in construction</p> <p>10.2 Energetic efficiency and sustainable resources in construction: the Italian situation</p> <p>10.3 Even more ecological. An example of an eco-friendly house</p>



<p>In the end of the chapter it will be described a model of a most totally eco-friendly house in order to show a complete application of sustainable resource in building constructions.</p>	
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Training module 10

Recycling of construction waste following reconstruction measures

<i>Aims</i>	<i>Topics of advanced training</i>
<p>The trainee is to know the technical characteristics of insulating materials and their recycling possibilities.</p> <p>The trainee should have knowledge about the recycling of building waste originating from construction work.</p> <p>Description of some examples recyclable materials for buildings reconstruction.</p>	<p>11.1 Recycling of insulating materials used in buildings reconstruction</p> <p>11.2 – Some examples of eco-friendly materials for buildings reconstruction</p>

Training module 11

The market opportunities for an ecological buildings construction (ESCO, legge finanziaria, etc.)

<i>Aims</i>	<i>Topics of advanced training</i>
<p>The trainee should have knowledge about the Italian tax relieves for the energetic saving in buildings reconstruction, the kinds of actions and interventions</p>	<p>12.1 Tax relieves for the energetic saving</p> <p>12.2 Facilitated actions and interventions</p> <p>12.3 Kind of costs and related allowances</p> <p>12.4 News about tax relieves in construction according to the financial law</p>



<p>which can obtain fiscal helps and facilitations.</p> <p>All the new bodies and laws that can be an important support in terms of energetic saving in construction (low 2008, Esco...)</p>	<p>2008.</p> <p>12.5 The Esco</p>
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Training module 12

Communication

<i>Aims</i>	<i>Topics of advanced training</i>
<p>The trainee will know the most important theory about communication and communications channels and learn the rules of communication inside work teams and in their relationships.</p> <p>The trainee will be able to identify possible barriers in communication and find the right way to solve them with particular attention to his role of teacher.</p> <p>As potential teacher the trainee will get the basic rules and principles of the communication for teaching</p>	<p>13.1 Introduction: definition of communication</p> <p>13.2 Work teams and relationships</p> <p>13.3 the barriers in communication</p> <p>13.4 Communication for teaching</p>





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