

**TITLE:**  
**BIO-ECOLOGICAL EDUCATION**  
**First V. Deruto, Second A. Bertirotti and Third M. Moschi**

**1: IRSA-Istituto Ricerche Scienze dell’Abitare (Institute of Research Science of Living )**  
**e-mail: [progettocasabioecologica@gmail.com](mailto:progettocasabioecologica@gmail.com)**  
**web: <http://www.progettocasabioecologica.it/Home.html>**

**2: Department of Architecture and Design (DAD)**  
**Polytechnic School University of Genoa - Italy**  
**e-mail: [alessandro.bertirotti@edu.unige.it](mailto:alessandro.bertirotti@edu.unige.it) web: <http://www.bertirotti.info>**

**3: ANTIAL - Associazione Nazionale Tecnologi, Ingegneri, Architetti del Legno**  
**email:[mario.moschi@gmail.com](mailto:mario.moschi@gmail.com) web: <https://www.federlegnoarredo.it/it/associazioni/antial>**

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## **1. Introduction**

Understanding that climate change also depends on our daily choices is fundamental; correcting our habits, even slightly, can be decisive.

From food to construction, everything passes through industry, but, even before that, through market research. The market responds to our requests, not our real needs: proper bio-ecological education can contribute to a lower impact on the environment.

In this process it’s important to grasp terms such as: **sustainable development, renewable energy, biocompatible materials, conscious use of resources.**

The **MaVE-Material Value Exposure research** (which was included in the “CORE-WOOD” project for the competitive repositioning of the wood supply chain: for woodcomfort, livability and multifunctionality of wooden structures, that has been developed in collaboration with the TESAF Department of the University of Padua, Italy) focused on an underestimated aspect: the biophysical interaction with materials present in the built environment.

## **2. Background, History, Review-of Literature, or Methodology**

The MaVE research is innovative and there are only publications from the research team.

Have been investigated emotional psychological aspects and biophysical reactions, demonstrating that the materials have a real interaction with us, and that building materials are responsible for the perception of comfort and well-being within the built spaces.

The MaVE research protocol was developed by IRSA (Research Institute of Living Sciences), and it was conducted over a decade, improving over time, on the basis of results of experiential and information tests conducted on a sample of about a thousand subjects, analyzed in the various stages of data collection.

These tests were conducted in specially designed structures; in the last phase of the research, the

biophysical reactions, of the tested subjects, were monitored instrumentally in two built environments: one in masonry and one in wood.

The results, analyzed on a statistical basis, have shown that building materials with natural components, produce an improving biophysical response, compared to those derived from petrochemical synthesis, which increases in the case of a wooden environment.

The construction of building with natural raw materials, would substantially decrease the production of CO<sub>2</sub> and it would significantly increase the perception of well-being within the built spaces, resulting in an improvement in the immune response.

The research also served to develop an educational system, based on the experiential transmission information: the subject becomes aware of their own psychological and biophysical reactions, towards the environment understanding the importance of their choices.

This teaching program, may be proposed both in schools and in other locations, in order to raise awareness of the use of environmentally ethical solutions also in the construction field.

Our existence is necessarily expressed in an eco-systemic key, and for this reason it becomes important to educate from the young student to families.

A redefinition of the outdated differentiation between *private space and public space* is necessary, because, from an anthropological perspective, we are the environment.

The didactic methodology proposed, also makes use in the traditions of the ancient Italian Renaissance workshops, within which the relationship translated into an apprenticeship.

We believe that pragmatic teaching is important, connected with educational experimentation as it occurred in the workshops, between teacher and pupil.

This would stimulate a new demand for the bio-ecological market, with the production of eco-sustainable materials, objects, artefacts; the greater supply would also lead to a relative decrease in costs.

### **3. Results and Findings**

Climate change also depends on our lifestyle habits, the lockdown showed how the environment had an immediate benefit from the absence of production activities, but at the same time highlighted the serious shortcomings of most of the building stock.

Living in a wooden house, from supply chain FSC (Forest Stewardship Council) o PEFC (Programme for Endorsement of Forest Certification schemes), in the absence of glues and synthetic finishes means: forest maintenance and greening; greater hydrogeological stability; reduction of synthesis production processes and consequent decrease of CO<sub>2</sub>; reduction of the production of non-environmentally friendly waste; advantage of the development of local economies; energy and health saving.

From the Second World War market economies have developed by changing environmental scenarios, especially agro-forestry ones. The progressive lack of interest in wood as a building material, has led to the formation of extensive coppice woods that today appear aged. The conversion into high-trunk forests often does not allow the supply of the necessary assortments of materials for the construction of wooden buildings.

In Italy wood technology institutes of the National Italian Council and Universities have

collaborated with foreign engineering or research institutes, such as the NIED (The National Research Institute for Earth Science and Disaster) in Japan, or the TUDelft in the Netherlands, as part of the SOFIE project.

These collaborations opened of new chapters dedicated to the: regulations, production of bibliography, scientific and popular; recovery of the processing chains of construction wood; foundation of carpentry schools.

MaVE also led to elaboration of the EVA–Eco Valutazione Ambientale (Eco Environmental Assessment) protocol, a guideline for buildings that respect the environment and well-being; it will constitute a certification of both the design and construction process.

#### **4. Discussions and Conclusions**

Educating for awareness is the fastest way to influence climate change, and the Anthropology of Mind can help in this process. This discipline allows us to observe the relationship existing between the bio-evolutionary dimension of our species, with its universal and general characteristics, and the cultural declination that this dimension assumes in every regions of the world.

One of the problems arising from globalization, especially in the new post Covid-19 era, it's taking an individual responsibility towards the environment. The pragmatic teaching proposed, could be the starting point to stimulate the constant and continuous assumption of ecological responsibility, and developing a better participation in the life of the planet.

As human beings, we are much more similar than our claim to originality, and the relationship we live with the uterus that contains us, the cosmos, is seamless.

The aim of bio-ecological education is to bring reflection on issues that are often underestimated, but which greatly affect the real sustainability of our actions.

**Earth is our common home.**

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