

# Sustainability in Vernacular Architecture

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*Abstract:* - Vernacular architecture is known as traditional or popular architecture. Now, when sustainability is on the first page of all world actions, it is important to see the local solutions and houses as resources ready to use. This paper is about some lessons of ecology to learn from vernacular architecture in Romania. We are speaking about concepts, resources, materials and building technologies. Traditional houses in Romania are offering also in our days to the owners, living in comfortable spaces, with natural ventilation and solar protection.

*Key-Words:* - vernacular architecture, ecological architecture, popular houses, traditional living

## 1 Current environmental issues

Always interrelation between the natural and built environment generated links based on "rules" that were self-imposed by their sense of action, leading to respect human civilization, to realize and even improve them. Type text or a website address or translate a document.

Admit it or not, raw material resources are limited and ever decreasing, and the population is multiplied in a disproportionate and chaotic way. We can not speak of solving the energy crisis and reasonable materials that on the horizon appear an other, much more dangerous, - lack of drinking water, affecting biodiversity and global atmosphere, life in general and ecological imbalances.

Shelter - whether it was represented by natural forms established (caves, grottoes), whether they were created speculating a pre-existing natural environment (rocky slopes with cleavages) underground shelters (huts of earth) or coverage / protection (tents, huts circular coverage wood), are all based on actual knowledge of the local natural environment and its characteristics speculation to satisfy the need for protection and safety of the individual or group. Also, are highlighted insulating properties of materials. The structure of the envelope construction is designed so as to ensure strength and stability and thickness of layers of different materials used eg: parcel - reed - pursue and achieve thermal comfort necessary to ensure function of living in accordance with the climatic conditions of the area. From these

observations it is noted that from the interacting between the natural environment and the "built" environment, the first kind of human intervention is the acquisition and improvement of the existing natural environment itself. The next step in the evolution of this phenomenon was generated by the need to improve these early forms of natural environment seemingly hostile initially, but turned with minimal interventions in humanized environment - eg: creating images of "everyday life" figures on cave walls of Altamira. With the improvement of forms of "domestication" of the natural environment, man was forced to acknowledge natural causal mechanisms, which lead to an unsuspecting failure or negative (eg: the observation of natural phenomena such as cyclical seasons, monsoon periods, ebb and flow of the ocean was evident the need of shelters completion with priority before the arrival of unfavorable moments). If we were to relate to the evolution of human civilization built environment, from the first phase, the whole history of urbanism and architecture come merely to list the new forms, becoming more sophisticated, obedience trial and use for man of the general environmental conditions. This map also shows, also tilt the balance towards dominance (sometimes even aggressive) human intervention on the natural environment. Awareness of this imbalance manifested often recoil movements of people who sought return to nature, or - at least - integration into the natural environment and giving absolute supremacy of the built environment.

The idea of using existing energy in various forms in nature, proved to be a success, based on innovative concepts that lead to change for the better the quality of life of communities, providing better working conditions and / or housing.

The use of "clean" and renewable energy is an older concept that was returned in the last time because of the real understanding of the current state of the planet and the dangers that we all are exposed , including the future generations that would naturally follow after us. Relevant examples for this observation is the vernacular architecture who by traditionalism and constant application of the principle of conservation and perpetuation of tradition, have provided models approach "tolerant" of build human interventions, in symbiotic and harmonious integration with the elements of natural environment.

## 2 Natural and built environment

However, when the gap between the natural and built environment was favorable for the built environment who become essentially "artificial" (especially towards the end of the XIX Century and during the XX Century, in the postwar period, the 60-70 years), people begun to realize the potential problem of the imminent danger of the irreversible destruction of some of the elements of the natural environment. Nature, considered as eternal and limitless permanent renewable for it self, but also as "universal trash" with green ecological cleanser capacities of the waste of human activities, reached in the position to be defended in much more strongly, requiring confrontation interests economic and business type, whether they are presented as positive factors of social and local material welfare. Not infrequently, ambitious investment programs which seems to be extremely efficient and positive, hide in their essence forms for less slow destruction of existing ecological system that would develop. Therefore there must be a multi-criteria analysis by a team of specialists from different fields, each in turn to succeed as close to really evaluate the impact on the ecosystem and prevent alteration or destruction.

## 3 Directions to work

One of the solutions or part of the solutions would be to create a network of competent specialists in architecture and urbanism, to throughout project

implementation and intervention, and not least the awareness and training of future architects as active "actors" of the development process. It aims to reinvigorate architectural intervention modality considering the demands and needs expressed mainly by civil society. All these activities, incorporates a pedagogical side and an extremely well built program based on real parameters .

Among the objectives are:

- Introduction of new levels of competence in the field of architecture and urbanism appropriate decision makers in the humanitarian and development area.
- Sharing "know-how" and experience among professional builders
- Reconsideration and tie clear difference between "urgent" and "development"
- Renewal of professional practice - in terms of teaching - to support initiatives and innovative projects
- Identifying and strengthening existing competencies in southern countries and promote their entry into the existing international network
- Promoting a rapprochement between states for a development based on partnership, mutual aid with the active participation of the direct beneficiaries.

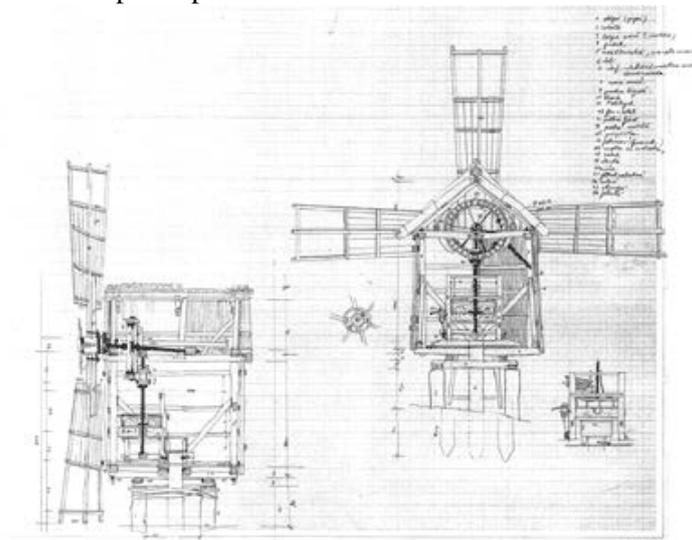


Fig.1 – Wind mill  
Enisala, Tulcea county, Romania

The vector education is widely recognized as the most effective available to human society to meet the challenges of the future, because progress depends increasingly of the research capability, innovation and adaptation to the new requirements of present and future generations. Access to education is a sine qua non condition for an active participation and creative people, primarily youth, the economic, social and cultural life at all levels of society.

Of course, education is not entirely the solution of the contemporary issues facing humanity, but in this area should strive to create new relations between members of society and to form and cultivate responsibility and respect for the work and nature protection.

The areas of intervention are mainly:

- Architecture - Research and development of technical solutions using local resources, materials, renewable energy
- urban and rural development - feasibility studies, diagnostics - multi-criteria analysis, implementation of housing projects taking into account the social, educational and cultural implications.
- Humanitarian - advice and expertise of NGOs for programs of reconstruction, rehabilitation and prevention of major risks
- Heritage and Tourism Fair - compile and develop strategies for the enhancement of the built heritage for the benefit of all mankind and tourism fair
- New information and communication technologies - to create a platform to highlight the role that plays the latest technologies in communication and information architecture.

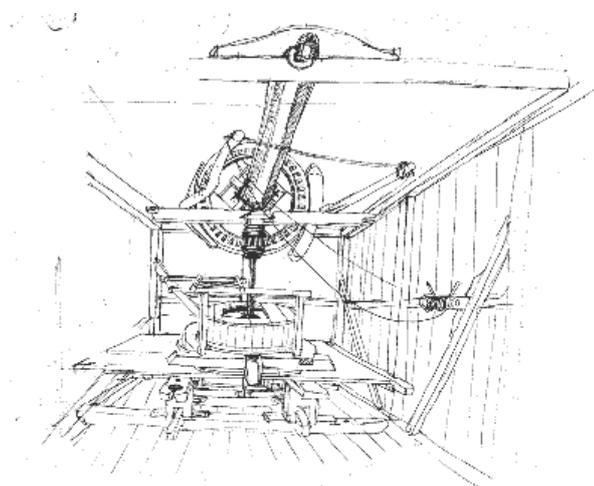


Fig.2 – Water mill  
Borlova, Caras Severin county, Romania

#### 4 Case study: Romania –short considerations

In the geographic area where Romania is, and as current EU member, is critical to assimilate and to "take advantage" (in a positive way) the experience of Western Europe countries, carrying on a continuous and sustained conservation and halting the factors that lead to damage and destruction. No need to spare no effort to design and implement

a realistic program to protect the environment, while it continually degrades due to development work of humanity.

We could start with something simple and clear - reforestation program of the land that have been mutilated and exploited for economic unreasonable purposes. This could be particularly attractive for authorities and the population, explaining through various forms of mass information that respecting nature and planting trees do nothing but to protect us and the generations to come. Activity awareness, starting with those in kindergartens, schools, universities and ending even with the older ones who have the power to get involved, to be made after a concrete, targeted and to have a repetitive nature, cyclic, so allow printing these positive ideas in the ego of everyone. Creating in each individual consciousness that everything around us like the natural environment, must be protected, preserved and perpetuated for future generations, is a course of action that will have long-term expected results and that will certainly generate new concepts and opportunities for concrete and effective action. We should mention that in ecology, current curricula do not meet the essential requirement of this activity to orient education towards sustainable development. Nature study, conducted in a traditionally way, now, requires association with the social sciences to highlight the possibility of knowledge and identify interdependencies between ecological processes and mechanisms of the market economy and fair and realistic assessment of the impact of the economy on the environment.

#### 5 Ecological Architecture – basic concepts

The interest and the enormous stakes they represent for the environmental issues, the preservation and continuation of life on earth, led to the birth of the guiding concepts that underlie most contemporary approaches. For the ecological architecture, sustainable development is the basic concept. Sustainable development is defined as development that meets the needs of present generations without compromising the ability of future generations to meet their own needs. Another way of definition is that economic and social development model that ensures meeting the needs of the present without compromising the ability of future generations to meet their own requirements; the basic idea is that each generation does not destroy or deplete existing natural

resources , thus making possible the development of the next generation without suffering harm ; This concept is responsive to the needs of the present , but takes into account the long term , ecosystem , allowing access to resources, but not accepting to generate any imbalance or environmental destruction .

Foreshadowing of the new type of economic development of mankind has polarized around defining the concept of sustainable development and find concrete and effective ways for the implementation of all of its dimensions, which became the focus of the debate on economic growth and environmental issues.

"Sustainable development is understood as a new kind of growth, radically opposed to the current standard, which dominated the economy of the nineteenth century and twentieth century, circumscribed 'use of natural resources of the planet, the conventional energy forms and the unconventional , while protecting and preserving the environment in the same time."

The success of sustainable development can be achieved only through coordination of the two major stakeholders - economically and ecologically. Of course mankind's aspirations to develop continually must be coordinated with the possibilities of protecting and preserving the environment.

Specialists worldwide attention was drawn to phenomena and processes whose scale has increased lately and whose negative affect and concern authorities and the entire population of the globe. Reviewing the most important of these is a clear fact that people are solely responsible and able to act only conducive to maintaining and enhancing the quality of life on earth.

Among such processes and concerns should be mentioned :

- persistent poverty in most countries
- unemployment stressed
- uncontrolled urbanization , unplanned
- economic crises
- continuing environmental degradation
- increased ecological imbalances
- reluctance of citizens to public institutions because they affect the quality of life of the entire population of the globe.

Of all the debates , research and confrontations that took place , it was emphasized that sustainable development is governed by clear principles to be

followed to streamline performances and achieve the goal :

I - predicting long-term development as a complex process

II - continuous surveillance activity to ensure equity and fairness between countries and between generations

III - analysis of sustainable development as a system

IV - the inter- conditionings of environment - economy and society.

" A community must be supported from below by current and future residents . Some places , by combining specific physical characteristics , cultures and spiritual , inspiring people to care for their community. These are the places where sustainability has the best chance of living and keeping " .

## 6 Conclusion

- people must be in the center of all development initiatives ;
- seeking solutions to the problems to be through a holistic approach , drawing on science and technology;
- encouraging human communities to recognize their cultural, moral and spiritual values;
- capacity of communities to self-determination through respect for their own development ;
- national sovereignty means ensuring human security and environmental quality ;
- gender equality ;
- peace, order and national unity ;
- social justice , equity space , ensuring equitable distribution of resources and providing equal opportunities for all members of the society ;
- democratic participation in decision making;
- institutional consensus that provide the convergence of interests of different groups;
- sustainable economic development based on equity between communities , ages, social classes , ethnic groups, geographic areas , etc. generations ;
- distribution of human population so as not to exceed the carrying capacity of the environment;
- ecological health by recognizing and protecting nature as a common heritage for future generations;
- equity between biogeographical zones in natural resource management ;
- global cooperation of the nations on Earth .

The concept of sustainable development defined as a process of change in which the exploitation of resources , direction of investments , technology

development, change development strategies of the institutions, complement each other and increase the potential both now and in the future, to meet human needs and aspirations , aiming producing an effect as small or no effect on nature.

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