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LESSONS FROM PASSIVE SYSTEMS OF VERNACULAR ARCHITECTURE FOR CONTEMPORARY CONSTRUCTION

Tijana Žišić¹, Marija Milenković

University of Belgrade – Faculty of Architecture, Belgrade, Serbia

¹ tijana.zisic@arh.bg.ac.rs

ABSTRACT

Vernacular architecture (in Serbia) is characterized by a lack of technology, and therefore demands for the use of passive systems that would improve the comfort of the users of the space. The strategies on the basis of which the objects were designed, built and improved were based on several bases: geographical characteristics, the influence of the sun and wind, orientation, the function of the object, the geometry of the form in relation to the local materials and the possibility of execution - that is, the construction technologies available in a given place in the observed time. With reference to the date criteria, it is clear that the strategies directly depend on the construction location.

With industrialization come new materials - such as glass, concrete and steel. They affect different ways of execution and design, but they also bring with them higher energy consumption and requirements regarding construction technology.

The lack of non-renewable resources, the economic crisis and global warming forced us to take a step back and think about passive systems that would enable the most sustainable possible behavior of buildings in modern architecture with innovative technology, help preserve the environment, use renewable energy sources, and reduce consumption. and the financial dependence of facilities, a lower rate of embedded carbon.

This research deals with the review of literature on the subject of vernacular architecture, the knowledge that can be extracted from it and passive systems in construction - in order to establish the basic points of energy saving (maintenance) and passive systems (principles) on the basis of which it is possible to further learn from the historical scope. architecture and construction for a green future.

INTRODUCTION

In recent years, LCA (Life cycle analysis) and the concept of energy efficiency have become a dominant topic in debates about architecture and construction. In this regard, Europe sets agendas aimed at promoting the efficient use of natural resources — in many cases with reserves for only a few tens of years — and consequently adopting solutions to their main cause of depletion, the construction industry (Bellanger & Lallement, 2008). In recent decades, this problem has been shaped by the pressure caused by the exponential growth of the world's population and the consequent need to build buildings and other infrastructure.

In order to complete the above-mentioned goals - it is necessary to examine innovative ways of construction. Nevertheless, it is relevant to think about the future of construction and on the basis that its past, according to some authors, was more sustainable - and carries with it lessons for the future.

Based on the repetition and improvement of solutions over generations, vernacular architecture is a reflection of a time when people knew how to cope with the scarce resources that were available. Based on available technologies and local materials, these buildings become elements that characterize places, assimilating the "context of people and places" (Ribeiro, 2008).

In the era of globalization - which began with the industrial revolution and intensified with the modern movement - which contributes to the homogenization of cultures, and therefore their ways of building, vernacular architecture is even more cited as a key element for continuing the discussion on cultural identity and on the benefits of returning to the construction specific to the geographical location. This approach would contribute to the reduction of waste and energy consumption by using traditional techniques and local materials, developed to adapt to the specific territory and climate.

This paper aims to show that vernacular architecture can contribute to improving energy efficiency in construction. Strategies used to mitigate climate effects usually have a low-tech profile (passive operation) and are less dependent on non-renewable energy, making them suitable for application today.

HISTORICAL REVIEW - CONTEXT

In the past, due to the lack of technology capable of maximizing comfort, buildings were constructed using passive strategies. These simple and smart strategies are based only on available endogenous resources and several criteria such as: geographical characteristics; insolation; orientation; geometry; form; material, among other things. Criteria of this type have been present since man decided to build shelters to protect himself from the natural environment. Although he did not master the concept of heat energy, or he did not know the laws of thermodynamics, man had an idea of the relationship between climate, form, building material and physical well-being through his senses and empirically.

It took many generations for people, from different cultures, to empirically arrive at the creation of form and the process of construction. These approaches have their own styles and characteristics and are perfectly related to different types of climates and geographical features. Some examples are those shown in illustration 1: (a) Iran's wind towers are an example of a passive cooling system in which the trapped wind is cooled by contact with the tower walls and porous vases, or small fountains, containing water, and then the wind is distributed among several departments of the building, removing existing heat loads; (b) typical wooden houses from the Nordic countries, where forests are abundant, so this material has been used for thousands of years to help protect against summer heat and insulate against winter cold; (c) yurts, portable houses from Central Asia and Mongolia, are made of a wooden frame covered with waterproof fabric and have a high resistance to polar winter, strong winds and the heat of the plains.



Photo 1. (a) Wind tower, Iran (Gryffindor, 2008); (b) Norwegian Traditional House (PhotoXpress, 2011); (c) Mongolian Yurt (Adagio, 2007) [apply style: strand-references]

Inherent building skills were passed down within communities until the Industrial Revolution, and the great changes that followed - interrupted this evolutionary line of folk knowledge.

In the second half of the 18th century, the industrial revolution marks the beginning of a new era, with profound changes at all levels. Increasing technological progress has begun to disrupt tradition. The rural population, seeking a better life in the urban areas, began an exodus to the cities to become a workforce in the new industries. The desertification of villages led to the disappearance of knowledge and experience that had been accumulated for thousands of years. At the same time, factories proliferated and the need to accommodate a new workforce began. Workers' settlements grew in proportion to the factories and are characterized by miserable and inhuman living conditions. Apart from the high density of buildings in the settlements, these houses had almost no light or ventilation - for this reason it is often called the dark period in the history of human habitation (Goitia, 1996).

Industrialization brought new materials and technological developments such as glass, cement and steel. The increasing use of new industrial and standardized materials homogenized different approaches to construction - as well as ways of living - until then depending on the materials available at the locations. In the twentieth century, the roots with the folk past were definitely severed. At the beginning of the century, transparency, light, air and sun became the flags of the modern movement. Artists and architects promoted glass structures as ideal hygienic models in contrast to the dirty cities of the Industrial Revolution. The global proliferation of these thoughts, revolutionary and necessary, slowly began to be assimilated by different cultures. The powerful images of architecture assumed to be universal - applicable to any geography - and some mistakes in imitating architectural models began to disrupt the most traditional cultures, often the poorest, which saw in them a reflection of a better life. The inadequacy of these models in contexts different from those originally thought, led to the distortion and oblivion of the vernacular design and construction process.

Modern architecture, based on industrialized materials with low thermal resistance, especially for large glass surfaces, was very sensitive to external temperature fluctuations. Therefore, in order to provide comfort conditions indoors, natural ventilation was highly dependent. However, in 1926, the discovery of Freon and other refrigeration technologies led to the belief that thermal comfort inside buildings could be achieved solely by mechanical means. The architecture of the 20th century managed to make the interior of buildings comfortable, regardless of how unfavorable the conditions of the external environment and the construction technologies used were.

In 1973, the energy crisis showed the dependence on fossil fuels and the limitation of resources. A year earlier, the Club of Rome had published its first report entitled *The Limits to Growth* (Meadows, DL et al, 1972), gathering warnings about the need for reflection. This report was the basis for the development of the so-called "green building" concept. His topics were about the return to traditional ways of building, the use of natural materials, renewable energy and solar energy. However, the discovery of new oil wells in the following years clouded the crisis and the will to implement these ideas.

At the beginning of the second decade of the 21st century, the implementation of measures to reduce CO2 emissions and recreate sustainable architecture is urgent. At a time when society is faced with the urgent need to reduce energy costs in buildings, we should look back to strategies used in earlier times, where energy was not readily available and machines did not exist, where builders had to learn and experiment with other systems. which optimize indoor comfort.

THE CONTRIBUTION OF VERNACULAR ARCHITECTURE TO THE REDUCTION OF ENERGY USE

Vernacular architecture is characterized by the fact that it is a direct product of man's relationship with the environment, satisfying the basic need for shelter and seeking harmony with nature. These implications are reflected in regional differences in the use of local materials and techniques, the adaptation of buildings to the specific climate, family structure and its economic activity and behavior in the community. The form of the objects was obtained based on multiple constraints and guided by the optimization of the scarce resources that people had. Nothing was wasted, neglected or ignored because the communities had the empirical idea that their well-being essentially depended on balance with the environment. For these reasons, the knowledge inherent in this type of architecture should be the basis for sustainable development.

This relationship between the built and the natural environment has long been embodied in the Roman mythological concept of Genius Loci, which associates with each location a deity responsible for its destiny. Therefore, the choice of place for the implantation of a building or a city would be conditioned by the characteristics and temperament of that deity (Cerqueira, 2005). This concept was also highlighted by Vitruvius 2000 years ago. More pragmatically, he discussed the importance of choosing a site for construction, through the analysis of animal livers and plants from those sites, thus identifying, among other things, the quality of water and pasture and the type of soil (Vitruvio, 2006).

The importance of these generated forms for sustainable architecture is described in a diagram created by Stefan Behling, of Foster + Partners, together with Arup Engineering Consultants. This diagram shows two triangles that question the future of additive systems (adding layers, adding cost, adding sophistication) that support sustainability (Illustration 2). As an alternative to this system, the diagram presents a taxonomy of sustainability based on active systems, passive systems and architectural form – with an inversion of their importance. In the inverted triangle, primacy is restored to the architectural form, a change supported by architects and all those who defend the history of architectural typologies as elements that provide lessons of sustainability through specific conditions of evolution. However, it seems appropriate to add a new triangle to the diagram representing the past. This triangle consists of only two systems: architectural form and passive systems. This new triangle is of great importance in determining the definition of the future.

The definition of the future should seek the integration of tradition and modernity, thus establishing a hybrid system that combines intelligent materials with traditional materials and enables the exploration of new aesthetic and functional concepts. Ignoring all the knowledge and technological potential that exists today would be a mistake, when the criteria for high-performance buildings need to be achieved.

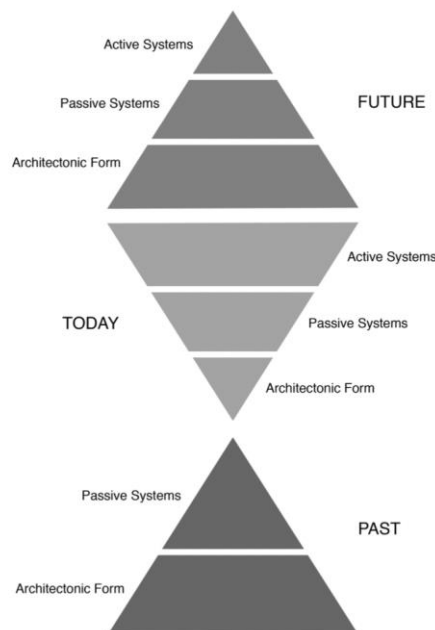


Photo 2. Behling's diagram - triangles of the present, past and future (Abalos, 2009)

Vernacular architecture, due to its multitude of types, contains a wealth of different strategies for mitigating the effects of climate. Some of these strategies relate to the discussion of energy efficiency in buildings using passive design strategies, such as:

- Adequate urban planning - the positioning of construction sites and the organization of settlements are a reflection of the various orographic, climatic, economic and social influences that residents should try to take advantage of.

An example is the city of Yazd. The streets of Yazd have an angle of 45° (NE-SW) to protect people from the warm northwesterly winds, sand and dust storms. Likewise, urban blocks are designed and built facing the same direction or at an angle of 90° to this axis (Behranfar and Nurmohammadzad, 2011). Street settlements created at this angle allow to take advantage of the wind. On streets that take advantage of the breeze, hot summer air provides a more comfortable condition when replaced by cool air (Photo 3).



Photo 3. Yazd, Iran (World Heritage Journeys)

- Promotion of natural ventilation – the aim is to encourage air circulation in the building to ensure health protection and thermal comfort, especially useful for night cooling in warm climates, without compromising security from intrusion.

However, in areas with harsh winters, the intention is to reduce heat losses through ventilation, which explains the absence of chimneys in houses built in those areas.

- To reduce solar gains in summer - in the southern regions, in order to minimize heat gains, several strategies were adopted, such as: reducing the dimensions of the openings; use of a strong thermal inertia system of the building; and using light colors to reflect excessive solar radiation. Vegetation is also often used to control solar gains and, in many cases, deciduous plants are used to act as a thermal protector of facades and create a cooling effect through evapotranspiration (Fernandes & Silva, 2007).

- To capture solar gains in winter - balconies are oriented between south and west. This quadrant is the one that receives the greatest number of sunny hours with more intense radiation during the winter. Also, one should take into account the geographical position, as well as the wind direction for the observed area.

- Thatched roofs, due to their insulating properties, are a strategy commonly used in areas with cold winters. Also relevant is the principle of low ceilings, which enables rapid heating, cooling and ventilation of the indoor air.

- The principle of commonality - common corridors, corridors, public spaces with different functions, a common fire of the settlement... encourages the saving of resources and the availability of basic conditions for life and comfort to all users with lower energy consumption.

CONCLUSION

Vernacular architecture is a paradigm of the close connection between climatic conditions, modeled pragmatically by the scarcity of resources. The passive environmental adaptation strategies present in such constructions and perfected over generations are particularly relevant to the challenges that modern construction is now facing. The application of these lessons is relevant when it is known that new buildings have high energy consumption and the need to reduce. In this sense, this paper holistically evaluates this architectural manifestation, in the light of current knowledge, with the aim of finding a scientific justification for its knowledge in order to verify and improve its application in the future.

By learning from the past, the future can harness the potential of existing technology and improve it to change the current energy paradigm. Through the optimization of these strategies, it will be possible to meet the desired standards of comfort while reducing energy consumption.

In the current context, the study of vernacular architecture is a necessity, as confirmed by several scientific publications. This type of architecture is a model of wisdom in using natural resources and adapting the building to the surrounding natural environment and therefore can be a contribution to the sustainability of buildings. New techniques are needed, but we must also keep the old ones, consolidating the knowledge that the inhabitants have accumulated for centuries, in order to better adapt to the climatic conditions, the environment and the way of life.

LITERATURE

1. Bellanger, B.; Lallement, L. (2008). Une Terre pourtant pleine de ressources. *Science & Vie – Hors Série*, n.o 243, p. 35-54, Juin
2. Ribeiro, V. (coord. geral) (2008). *Materiais, sistemas e técnicas de construção tradicional: Contributo para o estudo da arquitectura vernácula da região oriental da serra do Caldeirão*. Edições Afrontamento e CCDR Algarve.
3. Goitia, F. C. (1996). *Breve História do Urbanismo*; Lisboa: Editorial Presença, 4.o Edição.
4. Meadows, D. H.; Meadows, D. L.; Randers, J. (1972). *The Limits to Growth: a report for the Club of Rome's project on the predicament of mankind*. New York: Universe Books.
5. Cerqueira, J. (2005). O Estilo Internacional Versus Arquitectura Vernácula: O Conceito de Genius Loci. *Idearte – Revista de Teorias e Ciências da Arte – Ano I, N.o 2 (Abr/Jun – 2005)*, p. 41-52.
6. Vitruvius (2006). *Tratado de Arquitectura*. Lisboa: IST Press, Instituto Superior Técnico.
7. Behranfar, M., & Nurmohammad-zad, H. (2011). Morphology of Traditional Texture of Yazd City. No. 6; *Nofasname of Tehran Art University, Tehran, Iran*, 71–86.
8. Fernandes, J.; Silva, J. (2007). Arrefecimento passivo na arquitectura tradicional de Évora. Coimbra: Congresso Construção 2007 - 3.o Congresso Nacional, Universidade de Coimbra.
9. Janetius, Prof. (2020). Vernacular Architecture.
10. Cojocar, Alexandra & Isopescu, Dorina Nicolina. (2021). Passive strategies of vernacular architecture for energy efficiency in *Publicat de Universitatea Tehnică „Gheorghe Asachi”* Volume 67.
11. Namicev, Petar & Vuksanovic-Macura, Zlata & Petrevska, Biljana. (2018). Vernacular architecture in Macedonia and Serbia: a comparative study.

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