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Vernacular and Technology. InBetween.

Mihaela Hărmănescu*, Cristina Enache

"Ion Mincu" University of Architecture and Urbanism, Academiei 18-20 Street, Bucharest, Romania

Abstract

The challenges of 21st century are related to the community's ability to succeed a sustainable management of the landscape's resources, in a world where tradition's nostalgia and the patrimonialization are interpreted and re-used in relation with globalization and consuming. In a time of dramatic changes on the social scale and technology, sustainability means more than preserving traditions in places where the vernacular knowledge are important resources to recovery the local identity. It requires a reformulation of their use, a suitable dynamic adaptation of the contemporary world, merging with the technology integration into the landscape. This paper proposes introspection on the integration of indigenous values identified in the current technology development through the transfer of information on landscape. A smart landscape is an adaptable landscape. Adaptability is derived from the proposed uses of technologies in a sustainable vision, in a balanced use of local resources and evolutionary protection of the heritage. The resource, local heritage and technology need to be reconsidered in a relationship with a return to the primary motivation - their coexistence in the landscape, which can be seen as information's primary database that spawned the first technological elements - clay, metal tools and first building blocks. In a cyclical evolution, the technology returns in the 21st century landscape in the form of information and its impact and consequences oscillates between transformation and conservation nostalgia. In this context the dialogue between vernacular and technology gains materiality, redefining old taboo-dispute between tradition and contemporaneousness. The paper aims towards to highlighting the concept of "vernacular" and "technology" and to underline how can their relation be reinterpreting in a sustainable and resilient vision, in a way that respond to the landscape continuous changes.

* Corresponding author., Tel.: +40213077180.
E-mail address: mihaela.harmanescu@uauim.ro (M. Hărmănescu); cristina.enache@uauim (C. Enache)

1. Introduction

1.1. Vernacular and Technology in Landscape – the importance of the subject in the context of the globalization and environmental issues.

The study aims to analyze the relationship between the tradition and the technological evolution, using the landscape as background – regarded as life framework of the society, as resource for its construction and as future economical development. Identifying the various contexts derives from both features belonging to the natural – relief, climate, geographical area, and also from specific local resources which determine particular approaches and solutions. Being in the theoretical phase, the paper outlines the general framework, delineating the theoretical concepts and preparing the methodological basis for further investigations.

In the European Landscape Convention, one of the four measures which should be undertaken at national level by each country is "the legal recognition of landscape constituting an essential component of the setting for people's lives, reflecting the diversity of their common cultural and natural heritage and as the foundation of their identity" [1]

The sustainability occurs as an important element in the study due to the issues involved – related to the intimate relation with the nature, to the identification in the tradition of several solutions which can be technological developed in a resilient vision, seen in the context of currently existing discussion on international level.

The relation between technology and landscape must be considered bidirectional: technology - landscape. The technology – result of society's evolution, aiming to satisfy its needs and to increase the comfort and the living conditions – changes the landscape. The landscape also often proves to be the necessary framework for the development of certain technological processes; it can determine changes in the technology evolution (the ecology and the environmental economics have determined revising / reducing / elimination of the polluting technology.

The technology is basically a result of the human need for adaptation and surviving; the relation technology – landscape can be seen as an effect of territory dwelling by the society. The first landscape was the untouched nature landscape, where the man had to survive. The first settlements were looking into the nature those elements that provide the necessary of human existence.

The morphology and evolution of the landscape describe the relationship between society and place, the way the man dwells the space. The link between a community and landscape is expressed through individuals' activities and the territorial behavior, in relation with two major issues – firstly, the type of economy and how the natural resources are exploited, and second – the type of the settlement and the manner the houses are build, from which derives both the population structure and the functional and aesthetical features of the buildings – the architectural style. The agrarian and industrial societies gave rise to specific landscapes, seen as a synthesis not only of the social or economic nature of its inhabitants, but also of historical and cultural foundations. Thus, a strong connections was established between the landscape perception and several concepts associated with the idea of place – identity, vernacular or local character.

1.2. Methodology

The subject of this research starts from several issues of the landscape sustainability – understanding the landscape as human's life framework, as natural and cultural resource.
The present paper tries to delineate the study area and the methodological approach. The objectives of the future research aim to outline a continuous study structure in order to define the relationship between vernacular and technology, in the large context of the landscape sustainability:
- Defining the concepts - "vernacular", "technology", "tradition" – in a theoretical approach
- Identifying the characteristics and particularities of different contexts – depending on natural conditions (relief, climate, geographical area)
- Outlining the general / particular situations – in relation with the history of the society and with the local cultural landscape
- Identifying the main issues on various scales – from global to local, aiming to generate general and particular solutions, using old and new technologies

- Reinterpreting the tradition in a sustainable and resilient vision

The study methodology gradually builds the proposed issue. Thus, the necessity of the subject is argued in the current context of natural landscape deterioration and of urban expansion, which lead to serious environmental problems and to loss of local identity.

The study initiated by this research wants to answer several questions that follow some key issues:

- Outlining the "rupture" between the two concepts – vernacular and technology – characteristic of the last two centuries (starting with the industrial and urban revolution)
- Identifying the original relationship between nature, technology and culture
- Identifying solutions that have been already implemented and overlapping with particular or general situations
- Formulating new possible solutions involving sustainable technologies, in order to support and revitalize the cultural heritage

2. About Vernacular. About Technology.

2.1. Vernacular

Etymology, vernacular 'comes from the Latin "vernaculus" and means native, indigenous, and "verna" means "slave house", reminding of what is indigenous, what is not for sale, but for home use, therefore, what is "indigenous" has no market value. [2] Since 1800s, vernacular starts to be the subject of several disciplines and was brought to a high degree of theory, evolving from the simple aesthetic meaning to the technical and contextual aspects. Vernacular identifies architecture like a social representation linked to cultural values and belief system. All forms of vernacular knowledge are built to meet specific needs, livelihoods and cultures they produce and are linked directly to the environment, available resources, using local technologies. By extension, this definition confirms vernacular knowledge and technologies integration into the landscape, attributing it to a territory and / or a group of people who live there.

2.2. Technology

The technology begins to develop in Paleolithic along with the achievement of first tools and first settlements. The term is closely linked with the idea of processing / modeling of natural resources. The etymological meaning, derived from the Greek, is "dissertation on an art", or "discourse of an art" (from tekhne = art / craft + logos=word). The existing (various) definitions consider that technology is a knowledge system and an application (a process) of this knowledge.

The first technologies developed depend directly on the landscape existing resources and represent the human ability to adapt in the effort of survival and integration in nature. Metal processing technologies (for weapons, tools, and constructive elements), building technologies, transport and agricultural technologies have evolved over time from the condition of survival to the domination of nature by transforming it. Mankind has experienced throughout history three major technological revolutions that have significant implications on human life – the Agricultural Revolution, the Industrial Revolution and the Information and Communication Technology Revolution.

2.3. Tradition and Sustainability

Tradition have an ancient history, from the earliest human settlements, by knowing the ancient dwelling [3] [4], through the existence of vernacular architecture [5] [6] and various construction techniques [7]. To know the tradition means to and to identify the potential of the vernacular knowledge, through proper application of its value criteria and taking into account the structural foundation elements of the local culture. Vernacular knowledge known as local, indigenous or traditional knowledge according different strategic documents in *the fields of spatial planning; sustainability and heritage,* is a key of climatic changes and must have a role in the climate discourse.

"Traditional knowledge refers to the knowledge, innovations and practices of indigenous and local communities around the world. Developed from experience gained over the centuries and adapted to the local culture and environment, traditional knowledge is transmitted orally from generation to generation. It tends to be collectively

owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices, including the development of plant species and animal breeds." [8] Thereby, the local culture, which in the current changes offers the possibility or the need for a new society model, is one of the main values in the continuity of the territorial sustainable development.

Sustainability is a very complex body of knowledge and and, like liveability, is about the interdependent spheres of the economy, the environment and social well-being [9]. The difference between liveability and sustainable is that the concept of sustainability involves a longer-term perspective.

Following the Brundtland Report, which exanimate the issues at the international scale, the Earth Summit (Rio de Janeiro 1992) accelerated the process of awakening the world to the urgency of sustainable development and secured the beginnings of a process of cooperation on development and environmental issues and local culture. Among the historical documents signed at Rio was Agenda 21 through which countries committed themselves to promoting sustainability through a great variety of means, including education, the most important resource for the human society to achieve a responsible attitude against pressing environmental challenges.

Also the European Conferences of Ministers Responsible for CEMAT territorial planning, that took place over the years in Lisbon (2001), Dresden (2002), Ljubljana (2003), Yerevan (2004), Moscow (2005), Bratislava (2006), Andorra (2007), St. Petersburg (2008), Kiev (2009), Moscow (2010) the territorial dimension of sustainable development was promoted and also was brought into discussion the recognition of local knowledge. [10]

3. Knowledge transmission

3.1. Peculiarity and specificity

Vernacular knowledge is use to describe structure that people whose design decisions are influenced by traditions in their culture [11]. The past offer growth recourses for the future through the knowledge gained. In this case, the future should recognize the past value offering identity of those who use and transmit knowledge. To ignore the past, the vernacular knowledge of a place means to waste resources knowledge of a place. The unicity of a technology solution is the innovation of knowledge transmission of the local available materials and the constraints of the site, climate, and environment. The transmission to offer a rich repertoire of knowledge not only in the field of design, innovations, and sustainable techniques but also in other theoretical fields. [12] To not value the knowledge inherited means to not respect the most important characteristic of a local culture: peculiarity and specificity.

3.2. Genius loci, character, meaning, architecture

The nature and the life quietly support the elements of a whole that, from ancient times, has been recognized as genius loci. The place, therefore, is a concrete manifestation of the living world, and the architecture is the art of the place [13].

There is no architectural or urban form that can be dissociated from the place to which it belongs. From small settlements in which disposal on the site reflect the relationship between the anthropogenic frame and the nature in which has appeared, and up to the insertions in the urban tissue, in which the context generates the attitude, the place expresses its particularities or its generalities in the conception of the object itself. Not only the functionality, the area needs, the aesthetic trends of the moment, but also the geography, the geology, the climate, the society, the history, the culture and the local identity prints the place character and its expression into the urban space and into the object of architecture.

Different places have different characters and identities - concept called genius loci. This character becomes sometimes to determine the basic properties of the image of the environment - generating the feeling of belonging to that place. As Norberg Schulz said, genius loci proved often to be so strong, that it dominates any political, social or cultural changes [14]. The human being needs an urban landscape that would facilitate the need to create images of places with particular character, directions to lead somewhere, points to take form of distinct and memorable places. The image is based on simple topological relations, but they vary according to individual position in the social structure.

It is well known and debated the origin of the concept of genius loci. The roman term is actually the equivalent of the greek term daimon - guardian spirit, which is believed to accompany people and places from birth to death, and determines their characters or the essence of the place. This concept describes what a thing "wants to be", and demonstrates the importance that man has developed in understanding his relationship with nature, recognizing the different character of the places.

The term is often used to refer to the amount of visual components and characteristics of a certain place, the complex combination of qualities which give uniqueness, including the physical and non-physical aspects that belong to the society, to the local communities, to the physical context and time - and that are in a permanent relationship of interdependence. From this point of view, the character of an area involves two dimensions: a physical dimension, dependent on the place and of the environment characteristics, and a cultural dimension, belonging to the community, to the activities, behavioral typologies and different ideologies. Architecture in general represents one of the most important components of the place character - and can be defined as a particularity element belonging to the local built environment typology, promoting a unique identity inherited from the surrounding environment, expressing the social - cultural and economic features of the community as well as its customs and traditions. The architectural character represents the relation between the culture of a community and its built environment, and has several levels of expression:

• national character - the character of the built environment of a nation, related to its social, cultural and economical values
• regional character – reflects the specificity of certain regions, and which developed itself due to the interactions between the built environment and the geographical area, in the context of the social, cultural, natural and climatic conditions
• local character – identifying typologies of built or natural shapes in a certain location. Such items compose an expressive system of specific identification of a place, being the result of the interaction between the local community and the natural environment.

The physical character of the places can be decomposed in three elements:
• the architectural character – the architectural language, its items and its formal and volumetrical features
• the built landscape character – the morphology of the context, its elements and its components: images, tissue, spaces, zoning, structures, materials.
• The contextual character: natural / anthropogenic – focusing on the natural context items (geographical position, environment, soil, topography, plants, activities, use, interaction with the nature)

3.3. Identity value

The concept of genius loci involves multiple components - including topography, geographical context, social - historical context, economical context - issues which, spatially combined, creates an information agglomeration with influences and consequences on the space, resulting a series of particular landscapes. Following this idea, Tadao Ando feels "the necessity of discovering the architecture which the site itself is seeking", because "the presence of architecture – regardless of its self-contained character – inevitably creates a new landscape" [15]. He proposes that architecture "becomes a place where people and nature confront each other under a sustained sense of tension". He believes that "it is this feeling of tension that will awaken the spiritual sensibilities latent in contemporary humanity" [16]. The interpretation that he gives to the concept of genius loci is complex, overlapping different theories and personal experiences: a genius locus is a plurality of places that exists simultaneously on several levels, being related to the movement in space, and not the creation of the space itself.

The process of building the anthropogenic environment involves translating the nature's features through visualization, completion and symbolization. Creating the place should begin from the concretization of the meanings of the nature, of the landscape: the buildings must relate to the landscape as an extension of the interior space. The anthropogenic space should comprise the temporal elements, like succession and change. Time can be represented using spatial properties like the rhythm and direction, but in the same time must be represented through an architecture that provides stability and identity. The change that occurs over time should continue to recognize

the genius loci and the local qualities, allowing existing spaces to be interpreted in new ways. The style could be considered a timeless response of the place that successfully solves the formal problems and the changes during the history – constituting an element of local identity of the community.

4. Landscape, site and technology resource

4.1. Landscape – memory and time perception

The landscape contains information - about the history, culture, tradition, but also tendencies – at potential level – as element in the territorial system. The landscape is source of information, and in the same time – a receiver, absorbing information and transforming itself. Enache&Căplescu say that there are two major types of information in the landscape: the natural environment information (primary, latent) and human environment information (anthropogenic) [17]. The way that society interprets the information is materialized in the built environment. Therefore, the landscape is an adaptive and interactive system, acting collaboratively to the environmental influences.

As Enache&Crăciun say - the landscape is perceived and understood from the point of view of the relationship between the man (society) and the space observed. The way in which the human intervenes into the landscape depends primarily on the technical facilities that it holds, or has held at one time. The landscape has transformed from the unspoilt nature in which the man sheltered in caves, along with the discovery of the firsts building techniques, and continued progressively throughout history.[18]

4.2. Continuity and creativity

The landscape is a place of conflicts, the place of perpetual compromise [19] and its evolution, under the increasing human pressure conditions, cannot be only supported by individually approaches, but an integrate analysis. As a result of these settings, the value of landscape is directed towards sustainability, focused on diversity, the expression of the ecological, cultural, economic, political and social peculiarities of the local systems and its global processes.

The actions most dynamic, which driving forward the transformation of a landscape, are those in the area of social life that describing the mechanisms of the landscape development and provides conditions for its modeling.

As in any human intervention must know the tolerance limits of the landscape in question as structural and functional changes (balance positive and negative consequences) that will result from the proposed action and that this action, scientific methodology of knowledge of the territory can help diagnose the landscape sustainable development (structural and formal expression).

Social and economic characteristics, the environment give rise to community activities, offering local resources and materials and differentiate types of construction (from living up to the production) through constructive systems, and how to use the functions, local culture built. At this level, not the administrative or political boundaries are defined vernacular architecture, but natural support and the life in a space that meets the needs of that community. [5] Each of the factors mentioned below constitute relations which can be interpreted in various ways. Local climatic characteristics and functions are constantly determinants in basic characteristics relations of vernacular knowledge. The relationship between culture and architecture emphasize the complexity of the interrelations between the characters construction of buildings and socio-economic [20] context and over time, widespread distribution building techniques is directly linked with migration and colonization, the history of humanity [7]

The landscape has a living continuity with the interference of cultures and civilizations that are also present in relation to the differences from territory, and varied relief and climate which demanded various types of local specific vernacular knowledge. The relation between ethnographic and geographic setting of vernacular knowledge mapping the landscapes and confirms this continuity and adaptability of living in adequate condition along history.

4.3. Smart landscape

The technology, retrieved initially into knowledge vernacular, is directly linked to traditional culture, a concept that refers to the inheritance of a cultural heritage and its transmission from generation to generation, being the subject of the evolutionary process of progress and development (with direct reference to the idea of 'new', the development of new values). The international literature is defined under the name "local culture" and describes a number of parameters wording, especially local knowledge.

Local knowledge means methods and selected and established experiences of local communities in a progressive understanding. What distinguishes cultures between them is the character to be transmitted by word of mouth and developed over generations' accumulated practice, common social values and landscapes smart recovery.

A smart landscape brings a sustainable answer to the anthropogenic demands. The way that the nature and the human intervention interact, has experienced various hypostases throughout history. The actual context requires solutions which integrate in a sustainable and resilient approach, but in the same time belonging to the 21st century. The natural – anthropogenic dialogue should become a technological adaptation of the traditional solutions, following a rational and non-invasive use of the natural resources, in the idea of integrating in landscape.

Ironically, in an apocalyptical (possible) vision, we return to the need of survival, derived from the necessity of protecting and preserving the landscape (taking into account the environmental, cultural and economical issues) – landscape which represent in fact the mankind living environment.

5. Conclusion. Cultures of connectivity

This paper is an open paper and a reflection of a relation vernacular – technology and its influence on the landscape, in a world with rapid and continuous changes. The paper is an interdisciplinary approach and a theoretical start for future researches and can serve to different fields: from geography, architecture, urban planning, rural development, economic, anthropologies, ethnographies, etc. and is scope is underline the importance of landscape and how this can have a sustainable development.

In contemporary practice, vernacular is not appreciated enough [21] while the landscape is facing serious challenges in terms of environmental impact and management of natural resources. The knowledge of build traditional culture are technological principles established over time through a continuous process.

Vernacular knowledge offers different characteristics and forms that are based on local conditions of climate, materials and live cultures. In consequence, the role of vernacular in the process of cultural memory, connecting different spaces and time, is to mediate new technological innovations development throughout history new connectivity. The main quality of vernacular knowlegde, due the intuitive methods based on the historical experience is the prouve of a good behavior able to provide life safety using only local materials [22]. To respect the tradition knowledge must be protected nature from destructive result of a chaotic growing development [23]

Anyone can participate spontaneously on the landscape construction [24] and there are characteristics that could be developed, copy, others impossible to be re-adapt, but the most important is to provide solutions in developing strategies of resilience landscape.

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