

SOCIOHISTORICAL EVOLUTION OF THE SPATIAL STRUCTURE OF RURAL HOUSING IN THE SUB-CARPATHIAN AREA OF ROMANIA

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Abstract:

The study embraces the sociohistorical evolution of the Sub-Carpathian area of Romania reflected through the rural homestead starting from the 1830s (the first modern systematization of Romanian villages) until present times.

An important socio-cultural and identity indicator can be identified within rural vernacular architecture due to its lack of an architect and its realization according to the owner's aesthetic individuality. Its reflection of the social status of the inhabitant; its protean nature, and being able to adapt rapidly to the historical-social context and mainly to the cultural development but to the needs of the owner, sometimes, makes it the creative source concerning parallel functional systems.

This research highlights elements which constitute strong social-cultural and identity indicators, how human behavior shifted, influencing the perception and creation of the built environment: housing position in relation to the road; house typologies; main façade position in relation to the road and the cardinal points; the structure of the foundation, walls, ceiling, roof; furniture. This approach has facilitated the relevance of a series of material utilization patterns that enhanced the creation of a value adding methodology of the local context and direct applicability of it in the case of three action scenarios.

These historical and social changes are significantly reflected in the inhabitant's behavior shaping the rural vernacular architecture of southern Romania, offering a large variety of information not only regarding the constructive capacity but also regarding a way of life that can set the basis for contemporary axioms regarding architecture and rural planning.

Key words: *sociohistorical context; rural vernacular architecture; material utilization patterns; value-adding scenarios.*

INTRODUCTION

RURAL VERNACULAR AS A CONTEMPORARY CHALLENGE

The specific local historical context, social behavior, building methods, materials and techniques used in each particular rural area turn vernacular architecture into an identity symbol (Rapoport 1990, Gronegger 2013) and rich ethnographic evidence concerning rural technologies and ways of life in the countryside (Jose 2010, Vellinga 2007, Pop 2009). The traditional village house is a true fabric of space links (Mitrache 2008) and the household, a place with meaning the user is attached to (Christiaanse 2017) and deploys its daily rural activities.

The way of living and social interaction that vernacular architecture generates is respectful to its natural surroundings and its inhabitants (Brinckerhoff 1984, Collins 2005, Bonenberg 2009) which create together a rich community with traditions and cultural values. These can be a clear resource for restoring local cultural identity (Fei 2010, Junjira 2021) the vernacular being another way of describing the rural (Donovan 2014). "The farmer has a unique sense of space and fits his house just after his material and spiritual needs. Peasants adapt their home to climate and local materials. Farmers have solved the problem of their architecture" (Cantacuzino 1977, Pănoiu 1977).

This subject has been in the center of the specialists' interest in the last 5-10 years: a growing concern towards the historical-socio-cultural context, environmental impact, sustainability, experiments with new prototypes and ways of living adjusted to the more complex and diverse needs of modern society (Touman 2005, Palestina-Gonzales 2021). The term vernacular architecture entered the Romanian specialized literature quite recently. It can be said that to a great extent, this subject was included into what is now called folk architecture. The first writings concerning this subject can be dated in the middle of the 20th century

(Pănoiu 1977, Curinschi 1981) in 1964, when the Moravian-born American architect Bernard Rudofsky publishes his statement book entitled *Architecture without Architects*. This meant not only the introduction of a new term, but also a new vision and understanding of particular, local indigenous architectural forms and their socio-cultural behavior: Vernacular architecture does not go through fashion cycles. It is nearly immutable, since it serves its purpose to perfection. As a rule, the origin of indigenous building forms and construction methods is lost in the distant past (Rudofsky 1964).

In an age of grand challenges (Vleuten 2020), linking developments in the historical present to visions of an unwanted future (Kalmbach 2020), the abandonment of vernacular building methods in the process of building production was first realized by using abundant concrete and reinforced concrete instead of stone, wood and earth, which were the vernacular structural materials (Nilhan 2007, Mikulcak 2015, Ranesi 2021). These are all signs of societal forces that determine contemporary challenges such as globalization (Venni 2014), industrial and post-industrial society and climate change (Khalaf 2021). Design strategies of architectural modernism - including the expansive use of glass, the open plan and façade, and the flexible roofline - determined by massive historical change (the two World Wars) - were seen as a means to construct with concerns over materials allocations, over energy-resource scarcity, and over the economic challenges to postwar growth. Adding growing consumerism and population, these all raise concerns about society's sustainability aspirations (Ramakhrisna 2020).

We should be aware that the behavior of any inhabitant in vernacular spirit sets an example of harmony between built and natural landscape (Manoj 2009, Oikonomou 2011) Therefore, the use of more sustainable construction materials and techniques represent a more sustainable development (Niroumand 2013), the re-interpretation of contextual values (Ozgur 2007, Pulhan 2006) and traditional building or furnishing concepts in a contemporary key can assure a condition of visual comfort regarding external/internal spaces (Ruggiero 2009) Transnational perspectives may help engage with such processes as globalization, urbanization (Gao 2021) regional integration, climate change (Khalaf 2021, Prandecki 2021), and industrialization (Misa 2005) In addition, a U-turn to the past may present the right recipe for making the past "usable" (Schipper 2020).

An important socio-cultural and identity indicator can be identified within rural vernacular architecture due to its lack of an architect and its realization according to the owner's aesthetic individuality. Its reflection of the social status of the inhabitant; its protean nature, and being able to adapt rapidly to the sociohistorical context and mainly to the cultural development but to the needs of the owner, sometimes, makes it the creative source concerning parallel functional systems.

The main objective of the present research was to investigate the historical and social changes reflected in the evolution of the rural household starting with the beginning of the 19th century until present times. This research highlights strong social-cultural and identity indicators, how human behavior shifted, influencing the perception and creation of the built environment: housing position in relation to the road; house typologies; main façade position in relation to the road and the cardinal points; the structure of the foundation, walls, ceiling, roof; furniture. This approach has facilitated the relevance of a series of material utilization patterns that enhanced the creation of a value adding methodology of the local context and direct applicability of it in the case of three action scenarios. These scenarios can help the development of future built environment on a small (punctual interventions such as single-family housing) or large scale (residential areas) and guide the implicated parties (architects, urban developers, beneficiaries, end-users, inhabitants) in a coherent manner and with respect towards the local context and socio-cultural, economic and urban indicators. A clear, systematic methodology was proposed, one that can be easily assimilated and followed by targets that are not specialized in the subject of built environment, materials and spatial development.

Due to a dynamic historical evolution, the traditional household, from the South Carpathian area of Romania, has witnessed many changes over time. Current form and structure have their origins in the early 19th century when a new organization of villages was ordered by "aligning the constructions". This meant placing the houses on a predefined place by the local and central authorities.

Before aligning the households in the area, these were scattered and dispersed through meadows and forests, away from one another. Testimonies to this day are the toponyms, which have their origin and reflect the property owner's name: Galatia Clearing, Zafii, Hoaga Năndrășoii, Pătru's Peak and Pană's Peak, Mălăiște, Hogioaia, Prunii Uții etc.

In addition, in the last quarter of the 18th century and in the first decades of the 19th century, there were frequent relocations of villages, usually over short distances and at relatively short intervals. These relocations were determined by the introduction into the agricultural circuit of new plots of arable land [simultaneously](#) with the abandonment of old unproductive land; wars; tax claims imposed by the ruler; pestilence (Hitchins 1996, Hitchins 1994).

From a structural point of view, this type of household was different from the one currently known. The historical context and its stability was reflected through a striking difference which is due to the lack of fences imposed, on the one hand, by the fact that the households do not require defense; in a clearing only one

family placed its household and all its space was for their disposal and delineation was done naturally. On the other hand, there were periods when fencing taxes were applied (Xenopol 1896).

On the 20th of June, 1834, the village jury of Stroești - Argeș confirmed the receipt of a commandment to build the house counsel "after the form that we have, also for the other villagers to align their houses; after the command, we will truthfully follow" (Leonăchescu 1971). It seems that this "truthfully follow" has a relative content and residents resisted the aligning of the houses, forwarding complaints to local and central authorities. Also there was applied a continuous pressure on the villagers in the aim of achieving this systematization of villages (Olărescu 2012 b).

Gradually the resistance of residents against the alignment was defeated on September 6, 1837 for the Plasa Arges (territorial and administrative subunit of the county), a list of all houses was established "that were aligned, measured from this territorial unit" (Leonăchescu 2000). This list shows that a total of 258 houses were moved from 24 villages. Comparing the Census from 1838 (Olărescu 2021 a) for the village of Stroesti and Costești - Vâlsan (Ungureni and Pământenii) resulted that 22% and 15% of households were displaced due to the introduction of the alignment.

The displacement of the household brutally intervened in the human's way of life, determining one to sought ways of defense: by building fences to protect its property and privacy; building the household in the most remote area far from the road, as a reminiscent of the need for protection and isolation of the inhabitants. The aligning of villages represented a first step in systematizing the rural areas but did not solve the problems of the inhabitants, especially of those who depended on large landowners (Olărescu 2021 a).

Meanwhile, conditions and social relations have changed (land reform - Rural Act of 1864, gaining independence - in 1877, the establishment of the kingdom) in the period 1887-1888, the General Direction of Health Services conducted a national analysis that found that "our villager's house ... from a hygienic point of view leaves much to be desired." Therefore, the "Rules for aligning villages and construction of farmhouses – their hygiene and sanitation" were established. This regulation was accompanied by two model-plans concerning the construction of the house.

Regulation and related plans were approved in final form on September 6th 1888 and then lithographed "in a sufficient number and on the expense of the ministry, to be distributed to all municipalities in the country." On March 1st, 1889 these were sent to the prefects with a circular which stated their immediate application. According to this regulation there were allowed three types of house constructions depending on the area: "in the plain, brick constructions and fence plastered with lime were allowed; in the hilly area, brick, wooden beams and fence plastered with lime were admitted; in the mountainous Rustic brick or stone and fence plastered with lime" (Fig.1).

Although some measures were not applied fairly, in time it came to structuring the household after the classical scheme: the main house, small house (for servants and / or elderly people) and summer kitchen in the first court; haystack, winery, henhouse in the second yard (backyard-cattle enclosure); manure storage and the toilet in the garden. These functional models persisted and improved continuously.

In the first half of the 20th century the systematization of villages was based on the concept of Dimitrie Gusti and the school established by him. This included investigating the life and organization of rural society through modern techniques, applied by specialists in various fields, achieving a general radiography of the situation and proposing appropriate solutions thereof. This culminated in the systematic design and construction of model-villages (Eliade 2008).

Rules for aligning villages and construction of farmhouses – their hygiene and sanitation, 1888

- a) House should have windows facing south, east or west;
- b) The main/side facade should be facing the street, not the back of the house;
- c) A distance of at least 4 m should be preserved from the road ditches;
- d) The width of the street should remain 10 meters respecting art. 7 of road law;
- e) There should be plastered on the outside, plastering with earth not being allowed outside/inside/room floor;
- f) The height of the house will be after the owner's will; but the rooms will have a height of at least three meters;
- g) Every room will have two windows of 1 m high, 20 centimeters wide by 80 centimeters; with mobile windows sash;
- h) The room shall be paved with planks or well-burnt brick, with stoves having doors inside and chimney that emerges above the ridge of the house with at least 30 cm;
- i) The house will contain at least two rooms: one on the right and one on the left, a room in the middle, for the kitchen; the pantry will not be inside. One room and kitchen will be permitted only for families consisting of one man and a woman;
- j) The room space will be at least 20 square meters; the porch no less than 2 m wide;
- k) The materials used for the roof of the house will be iron, tiles, shingles or cane, cobs not being allowed.

Fig. 1.

Rules for aligning villages and construction of farmhouses, their hygiene and sanitation, 1888.

The Romanian rural world was marked at the end of World War II by a large and painful campaign of social engineering: the collectivization of agriculture. The stated aim of this campaign was to modernize Romanian agriculture to ensure higher efficiency and a higher standard of living. The real goal was the introduction of socialist structures and control, directly by the communist party of the peasantry (about 75% of the population). The transformation strategy of the communist authorities of the rural population was based on the division of social solidarity and the breaking of peasant communities by introducing the principle of class struggle (Tismăneanu 2007, Giurescu 2010).

The preamble of collectivization was the introduction of forced and unavoidable food and feed collection, as laid down by the state according to social inclusion and paid underpriced, compared to the free market (5% of the free market price for potatoes and 6.6% for beans in 1950) during 1945-1949. The collectivization process took place from 1949 to 1962 being divided into several stages each with its specific character (Tismăneanu 2007, Giurescu 2010).

The issue of rural systematization was approached in the National Conference on 6th- 8th of December 1967 and developed within the Xth edition of the PCR Congress in 1969. The National Conference in July 19th – 21st, 1972 resumes this problem with the assumption of achieving 300-350 sq. after the systematization of villages. The Plenary of the PCR Central Committee on 25th – 26th of March "1974, analyzed the systematization law of territory and localities adopted by the Grand National Assembly the same year on October 29th. This predicted the construction of civic centers – placed in the center of each administrative village unit; established building perimeters of villages with development perspectives and demolished constructions outside of this perimeter; the disappearance of small villages, which involved the relocation of their residents in the preserved villages (Lascu 1983). The law prohibited the construction or repair of buildings in areas doomed to be demolished. A project of radical transformation of a large part of the country required a long period of training and resource mobilization. The earthquake on March 4th, 1977 served as a catalyst for this project, becoming the subject of repeated interventions on the behalf of the Romanian Communist Party (PCR) leadership (Tismăneanu 2007, Giurescu 2010).

In 1986, the Organizational Department report of PCR shows regarding the "systematization of localities based on standard dimensioning of land within the building perimeters" in which it was expected that of the 13 123 existing villages shall be maintained only 9192, the 3931 remaining being "proposed for decommissioning and removal in other localities with higher prospects of social - economic development". This measure affected all counties, but in a different manner: the most affected were: Alba with 264 villages proposed for demolition, than Arges with 252, Bacau with 237, Valcea with 222 and Prahova with 206; the lesser affected were Maramures with 15 villages, Braila with 19, Brasov, Bistrita - Nasaud with 20, Covasna with 23, Satu Mare and Sibiu with 25. This systematization sought to reduce the inhabitable perimeters of existing villages from 625 258 to 285 839 hectares occupied, thus recovering for agriculture 339 419 hectares of land. All villages were affected, while remaining outside the newly proposed inhabitable perimeters, 1,863,417 households having to be "displaced" (Tismăneanu 2007, Giurescu 2010).

The fall of the communist system, in December 1989, led to the non-fulfillment of this plan to demolish the Romanian villages and to a greater freedom in terms of the built environment. On the other hand, the migration of labor from Romania to the West has been a factor of progress and cultural interference - even internationalization - in terms of the built environment.

RESULTS

Based on documentation on site, the research highlighted elements, which constitute social-cultural and identity indicators. The most important outcome is the determination of a strong link between how human behavior influenced the perception and creation of the rural built environment. This shift in time of the human behavior can be translated into spatial and building mechanisms such as housing position in relation to the road; house typologies; main façade position in relation to the road and the cardinal points; the structure of the foundation, walls, ceiling, roof; furniture.

The placement of components in the household is based on functional units. The site selection for the house and its orientation regarding the main directions and cardinal axes north-south and east-west and facing south, denotes the spiritual archaic relationship after which the dwelling is considered *imago mundi* and brings functional benefits (the house benefits of light and solar radiation energy in any season). This orientation was maintained even until the 1950s, the 50-80s have sought a compromised solution, the need of the house's main facade facing the street but in the same time being oriented to south. In the 1990s and beyond, the orientation of the main façade was exclusively towards the street, compromising natural solar lighting.



Fig. 2.
House position in relation to the main road, typology and structure.

The positioning of the home in the space of the household denotes a collective mental development. In the first phase, after the alignment of constructions, the house sat in the furthest area of the plot and the main road, as reminiscent of the need for isolation and protection of residents from danger. In the 30s of the 20th century, houses were set close to the road, as result of the disappearance of the need for isolation-protection, the increasing population density and the need of displaying their economic status (Fig. 2).

The situation was maintained after 1945, when the authority, without regard to the will of the owner, predetermined the position of the houses in the households. This stage lasted until the late 1990's, with a peak in the '70s. Currently the trend is placing the house further from the main access of the plot, as a defense against the intrusion of public space into the private one.

Regarding the structure and composition of houses until the 1930s, classic types of structure prevailed, developed, the porch and turret occupying a large proportion. In this period, buildings are distinguished by narrow and high windows separated by narrow wall portions. The material for the wall structure mostly consists of solid wood plastered with mortar and for the foundations river stone was used. The roof is usually hipped and covered with wooden shingles (Fig. 2).

In the late 1930s a transition to a more comprehensive housing scheme occurred, which abandons the classical structure by introducing a kitchen and a "back" entry. In addition, the dimension of the porch is reduced, whilst maintaining the shape and proportion of the windows. Also in this period, we can witness a transition towards brick as a construction material for the walls. This sets the basis for the structuring of the early 1950s -70s specific homes.

The 50s – 70s specific house has a stone foundation plastered with mortar, brick walls, hipped roof, with roof shingles - initially, then asbestos cement tiles, placed above the shingle structure. Regarding the composition, it was possible to observe an increase of the residential area, structures with three rooms being predominant, one used as a kitchen, a dormitory and a guest room and a pantry converted later (itself or through additions) in a bathroom. The open space of the front and back porch is reduced in proportion or even closed frequently.

In the 1980s, under the threat of general systematization of villages, demolishing or displacing of rural housing, especially in areas where collectivization has not occurred, the development of specific house typology was not possible although the previous model was somewhat outdated. This consideration combined with shortages of food, construction material and energy lead to sporadic constructions, which repeat and improve the old models or set new directions.

In the 1990s characterized by transition and freedom a more specific type of housing developed, with ground and first floor / attic. The composition of the ground floor comprises an open porch, central hall, bedroom, kitchen and bathroom and access ladder to the upper level. The floor or attic contains two or three bedrooms located on both sides of a hallway and a balcony or a terrace. The predominant materials are reinforced concrete in combination with river stones for the foundation; bricks, concrete blocks, autoclaved concrete, alternating frequently; concrete ceiling and wooden roof structure and tile covering, asbestos cement board.

Around 2000, a new specific typology appeared, the building area was enlarged, somewhat increased out of scale. The composition of the house becomes more complex, containing a basement, ground floor and even an attic. On the ground floor the kitchen, bathroom, living room are placed and the first floor contains bedrooms and a bathroom. The porch and / or balcony are open and their proportion compared to the whole house is reduced. Currently, modern materials are used, which are fashionable and the trend is set by contemporary constructive solutions, or perhaps by the working system of specialized companies.

The material utilization patterns (Fig. 3) reflect and reveal the long-term utilization of natural, traditional and local materials such as river stone, wood (wall structure, roof and covering), brick. Significant shifts in the utilization patterns were determined by the implosion of new construction materials at a different moment in time for each construction component.

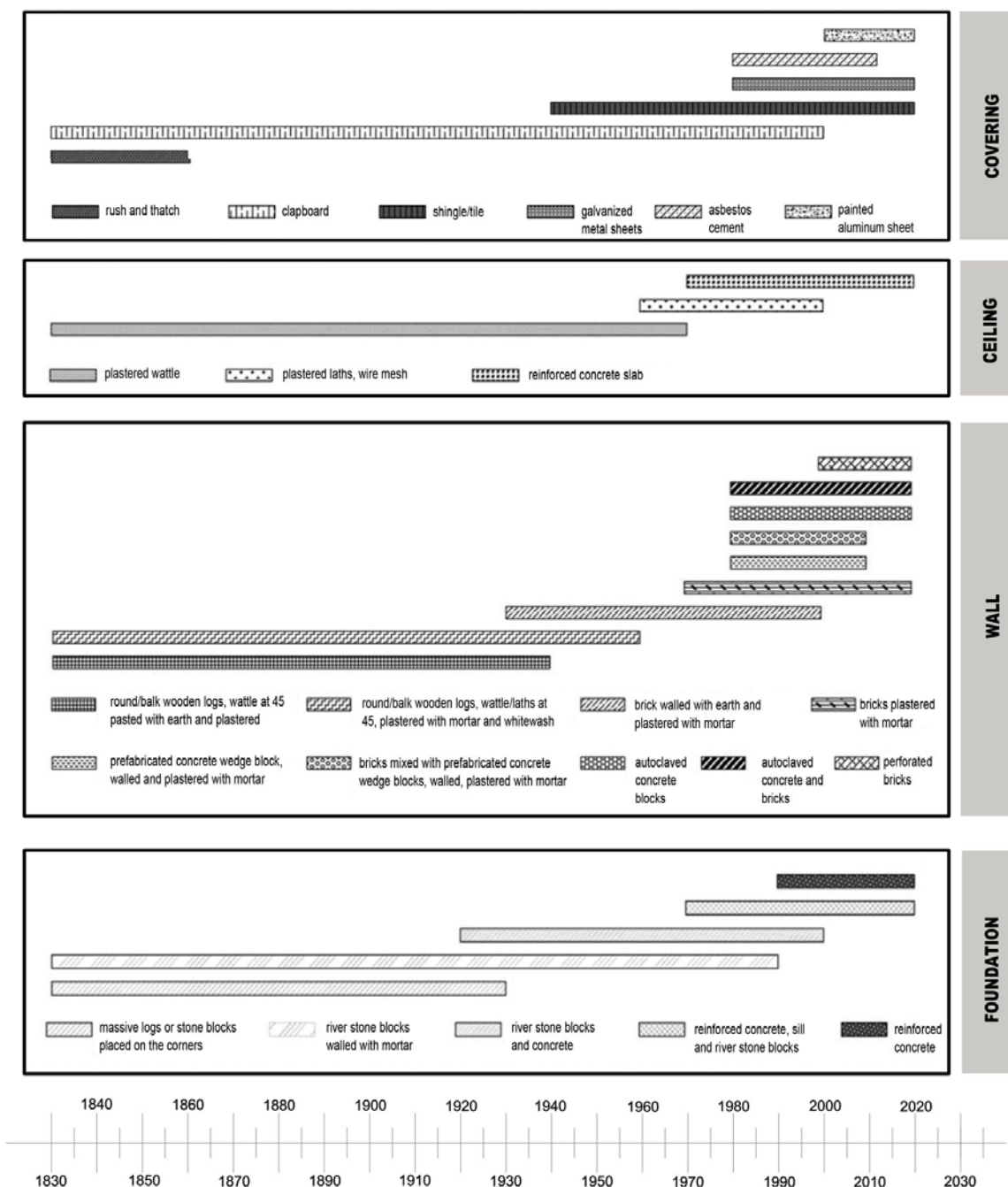


Fig. 3.
The material utilization patterns in house construction in the past 200 years.

With regard to furniture, the evolution is dynamic; starting from a simple, locally made handcrafted furniture item to an industrially produced multifunctional semi-fabricated object that fulfills the contemporary end-users needs.

Until the Second World War, furniture was simple, obtained by carpentry methods. There were relatively few pieces of furniture, made locally, by handcraft techniques with main functional typologies such as storage, dining, seating, and sleeping.

For storage (food, clothes, documents, valuables etc.) almost exclusively a chest, which, depending on use, could be the wooden chest, which is simple, made of beech wood (the most widespread species in the studied area). The processing involved obtaining semi-finished products by splitting the beech trunks with a chip axe and then processing the final shape and dimensions by using a simple tool (special knife, chisels, ashes etc.) (Capesius 1974). The assemblies, without adhesive, are in tongue and groove,

processed with the simple tools and the ornamentation by incision, different on the constituent elements (legs, front boards, cover) but somewhat symmetrical (Zwenger 2000).

The wooden chest appears constructively in the form of a box, made of joined panels, at the corners, in straight finger joint or dovetail. The body of the box has a border at the bottom, and the lid has a symmetrical border. The panels were simply finished with varnish, wax or oil or were decorated with the flader technique (emphasizes the pattern of the wood grain) or painted.

For dining, round, low tables with three perforated legs were used commonly and frequently until the '90s. They had the advantage that after serving the meal, they were easily cleaned and hung on the wall. High tables, with a frame and quadrilateral connections, with connections and perforated crossbeams, with a drawer, were usually placed in the good room (the guest room of a rural house, facing the street), between the windows. Used for housework or for displaying functions, these tables had relatively small dimensions (max. 1200x800mm). The cupboard table, obtained by techniques and with ornamentation similar to a seal, were frequently used for food storage and as a support for various dishes (Capesius 1974).

A visible evolution can be identified also regarding seating starting from three-legged low chairs with hollow seats, to high chairs, stool or with backrest, made of solid wood, with ties and sleepers and with perforated, sculpted and turned decorative elements.

The bed was simple, the mattress was made of fog, corn leaves, rags and very rarely wool and the mattress support was made of removable boards placed next to each other.

The tall wardrobe for clothes, very rarely used even in the homes of the wealthy, was made of solid wood of precious species (cherry, walnut, maple).

Since the mid-50s, the furniture diversified, introducing high wardrobes for clothes, made of solid wood of common species such as spruce (*Picea abies L.*) but veneered with precious veneer such as cherry (*Prunus avium L.*) walnut (*Juglans regia L.*), maple (*Acer platanoides L.*). The beds are generally with mattress (spring mattress, common body with the bed frame) and studio. The crates reduce their area of functions, fulfilling a strictly functional role such as the corn box or the dowry chest (ceremonial). High tables are gaining ground, diversifying the field of use as well as the dimensional range. At this stage, the mixture between local and industrial production appears, having the major proportion the first.

The '60s are characterized by the appearance of cabinets (wardrobes) made of wood-based products (initially lumber-core plywood then chipboard) veneered as well as the diversification of bed types most often combined with storage units made of products based on veneered wood. Also during this period, armchairs appear as living and resting furniture or even for sleeping.

The major change of the '70s is the appearance of sideboards (kitchen cabinets) made of semi-finished products based on melamine wood, and the early appearance of other pieces and components of melamine furniture (chairs and stools) as well as the trend of arranging rooms with standard furniture (kitchen, living room).

The '80s bring with them the intense desire to decorate the rooms with standard furniture: kitchen, bedroom, living room, but the shortage on the internal market of Romania leads to great difficulties in purchasing these objects. As a compromise solution, local artisans are used to make such objects.

In the '90s, with the market economy and trade liberalization, the wishes of the previous decade are fulfilled and the house is functionally furnished involving classic typologies, such as kitchens, bedrooms, living rooms. The producers being almost exclusively industrial, the materials in general use at that time were wood-based panels (especially veneered and melamine chipboard), mechanically carved and perforated sconces, and solid wood only for the resistance frames of tables and chairs.

The beginning of the 2000s comes with a major change, namely the introduction in the domestic circuit of industrial furniture made of plastic, metal, alloys and custom-made furniture mostly made of melamine chipboard, multi-color, with contrasting hardware. The current trend is to combine commercial furniture with locally made furniture, mostly solid wood, and relatively often with known author design.

After a holistic research focusing on both architecture (spatial structure of the rural house) and furniture (utilization patterns and relevant furniture items of the rural house) in their traditional vernacular manifestations, a series of significant characteristics were identified on several levels: space typology, general shape, orientation, material utilization, structural solutions, and furniture joints. All these elements set the basis for a methodology, which aims at value-adding scenarios connected with sociohistorical changes reflected in the local rural vernacular architecture and furniture of sub-Carpathian area of Romania.

A value-adding methodology of local elements was proposed, comprising six stages grouped into two cycles. First, with theoretical and decisional stages such as consultation of existing databases, decision making, drawing guidelines; the second cycle comprises the practical steps such as selecting the sustainable direction, functional and stylistic interpretation of the elements according to the aims assumed, direct value-adding through exterior and interior architecture projects.

CYCLE I - THEORETICAL AND DECISIONAL STAGES

Consultation of existing databases starts from analyzing the local rural architecture and interior space structure and typology (furnishing patterns). This phase begins with a holistic review of the status of the built environment, spatial structure, volumetric composition, materials, façade, and solutions of technical and constructive connections between different structural elements, characteristic joints, ornamental characteristics and details. In addition, the constructions techniques of local artisans, craftsman and/or companies/urban developers can be relevant in obtaining a result that gets homogeneously integrated into the local built environment.

Making decisions regarding the final purpose enhances a clear strategic choice that visualizes the concept of the intervention and if it focuses on spatial, structural or volumetric reorganization with the aim to enhance a coherent architectural input that satisfies contemporary needs but also harmoniously integrates into the local rural context.

Selecting the strong directions of action regarding the existing geographic and climatic context taking into account a number of the constants on site such as typology of rural settlement (the village plan, valley, cultural, ethnic, economic, social, historical context, etc.). These main directions of action rely also on the components and the operation of the household, comfort needs volumetric and specific form of dwelling, construction materials and their characteristics and local availability, orientation position and facades. These are only a series of the axioms that have to be considered regardless of the scale and typology of the future intervention. These guidelines are available and function efficiently in the case of any contemporary intervention in the built environment (rural or urban, large or small).

CYCLE II - PRACTICAL STAGES

Detection of the sustainable direction through selecting from multiple possible feasible options as required setting basis for the identification of the optimal measure considering the possibilities and the desired result.

Functional and stylistic interpretation of architectural elements means assuming and highlighting the characteristic elements of local rural vernacular architecture and furniture on a holistic level: volumetric orientation, scale, proportion, structure, materials, and characteristic local structural features for walls, roof or concerning furniture items.

Direct value adding by approaching the process on multiple levels starting from architectural projects or functional architectural conversion to projects of organization, reorganization of inner and outer space (decorative and functional) and landscape design.

This methodology can be applied in three action and intervention scenarios. The scenarios were established in accordance with the relationship *man - place - culture of construction - culture of housing* and are based on the following fundamental elements: the choice of place; positioning the construction within the property; house project; house construction and interior design. Even though the three scenarios coexist in the present, scenario 1 which is the classic type, the one that is the main subject of the research (S1) has been in phase out for the last 20 years in Romania, scenario 2 (S2) being a feasible replacement for future interventions. Regarding scenario 3 (S3), it is winning ground rapidly, becoming as viable as scenario 2, many of the urban developments in the last 5-10 years being promoted by real estate developers.

	Scenario 1	Scenario 2	Scenario 3
Choice of place	The householder owns or buys the place.	The householder owns or buys, through real estate agents, the place.	The real estate developer chooses and buys the place, taking into account the development index of the respective area, utilities and surroundings.
House position on the property	The owner decides the location of the house within the property in relation to the cardinal points and the access areas to the property. Usually, the positioning of the other household annexes as well as the garden and the neighborhoods are also taken into account.	The owner decides in consultation with the authorities, the position of the house in relation with the access to the property and neighborhoods.	The real estate developer chooses the position of the house by consulting with local authorities, depending on neighborhoods, access and utility network.
House project	The owner establishes a sketch by measurements and then addresses the architect to draw up the technical project and obtain the construction permit.	The owner establishes a list of requirements and addresses the architect for the elaboration of the project - he presents several alternatives and by mutual agreement, they establish the final proposal, for which the technical project necessary to obtain the construction authorization is drawn up.	The real estate developer together with the architect develops the technical project of the construction and obtains the construction authorization.
House construction	The owner selects the construction materials (local ones are preferred); ensures their supply; deals with local craftsmen - usually on specializations (masonry, carpentry, plasters) and phases of construction (excavations, foundation; walls; roof; roofing; plasters; installations); participates, together with the other family members, in the construction works; provides food for builders.	The owner hires a construction company, negotiating the price of the construction in two variants: "structural level" or "turnkey delivery". In both variants, the contract stipulates the type of construction materials and certain quality conditions upon delivery. The builder provides the choice of materials, supply and food for the workers.	The real estate developer negotiates the construction contract, specifying the terms and conditions of delivery. The constructor chooses the materials based on those specified in the contract, makes the supply, and ensures the food for the workers.
Interior design	The owner together with the family members make choices regarding the interior design: furniture, household appliances, carpets etc. Usually, the functionality of the home is ensured initially, and then the solution of other issues such as arrangement and interior design are solved.	The owner makes the interior design or contracts a specialized company. In both cases, the final decision rests with the owner.	The developer hires a company specialized in interior design and offers the buyer a standard, minimal, arrangement.

Fig. 4.

Value-adding action and intervention scenarios linked to the historical context and social behavior of the inhabitant.

If S1 relies on the input of the owner (who is not a specialist) in a significant proportion who is collaborating with a local artisan, meaning that the majority of decisions are made in a closed circuit without the consultation of authorities or architects. The flow of S2 relies on the input of specialists in the project of the house, the decisions being made mainly by the architect and constructor (which in this case is a specialized company not a group of artisans) in consultation of local building rules. The owner is left in the background with punctual interventions regarding only the choice of place for the future construction. In the case of S3, the owner shifts all his attributes to specialists: real estate developer, architect, constructor, interior designer.

DISCUSSION

The aim of the research is to illustrate a historical socio-cultural evolution seen through the filter and changes of the rural built environment and its inhabitants. This dynamic process starting from the beginning of the 19th century until present times is closely linked to the way of life and the way people created their built environment adapted to their needs. The historical context (the two World Wars) remains an important factor that launched specific social behaviors that in this case can be translated into architectural interventions or space creation (open or isolated from the exterior, depending on the need of protection the inhabitant in a certain period of history).

The rural house position in relation to the street, house typology, the main façade position in relation to the cardinal points and the street, the structure, materials and techniques used for building the foundation, walls, ceiling and roof, create strong socio-cultural and identity indicators generating the following holistic discussions described below.

Placing the house in relation with the street denotes the human need of exposure or protection. Currently, the settlement of the house as far away from the road as possible, shows the tendency and need of isolation of the modern man from public space, which is gaining ground compared to the private space, a protection against pollution. In times of peace and socio-cultural and economic progress, the houses had open porches, both on the ground/first floor; the proportion of the porches' surface area was significant in relation to the building. In troubled times, physical or ideological repression limited people and determined them to close the porch area, seeking solace inside the house.

The dynamics of the typological structuring of housing can be observed in the studied period, also an accelerated pace in terms of freedom of choice and the transition to a stable democracy compared to the "rigid" ideological statement of 50-70s period.

The boom in house construction after 1989, based on a new structural scheme (ground and first floor/attic, with central hall, bathroom downstairs, bedrooms upstairs/attic) denotes the ideological resistance of the population who waited for an appropriate moment to put their plans into effect, on the one hand and on the other hand, for the shift of the centralized planning phase in accordance with the needs/requirements/cultural development of the rural population.

In the period of 2000, due to contacts with Western Europe as well as temporary or permanent migration of Romanians to these countries (especially after joining the EU) the cultural paradigm has changed and larger housing began to appear, with an updated structural scheme according to existent ones in Western Europe. In their construction new materials and techniques are used, common on a European level (promoted by major suppliers of building materials and systems), to the detriment of traditional materials and techniques. Thus, a gradual leveling of specific regional/national characteristics is taking place in the context of the current European Union.

Regarding furniture, from a simple geometry and assembly, a diversification of shapes, materials and connections happened due to the large variety of tools and materials that became available after the Second World War. The 60's are characterized by the introduction of wood-based panels and veneers, ten years after the sideboards being one of the most utilized solutions. In the '90s, with the market economy and trade liberalization, producers being almost exclusively industrial and the materials being wood-based panels (especially veneered and melamine chipboard), these were mechanically carved and perforated, solid wood being used only for structural purpose. The beginning of the 2000s comes with a major change, introducing a large variety of materials such as plastic, metal and alloys, the current trend being eclectic, combining locally made furniture (mostly from solid wood) with commercial one.

The proposed methodology sets as its main purpose the multiple value adding processes, these being closely linked to the historical-social-cultural context, thus shaping the built environment based on strong elements (geography, climate, history, culture, ethnicity, tradition etc.). The intervention scenarios are a practical reflection of the methodology, three specific action plans that guide the contemporary inhabitant and the way it relates to the building process. These three scenarios are distinguished by the social behavior of the inhabitant, depending on the type of its involvement in every step, starting from the choice of place, house position, project and construction.

CONCLUSION

The study embraces the historical and social evolution of the Sub-Carpathian area of Romania reflected through the rural homestead starting from the 30s in the 19th century until present times. These historical and social changes are significantly reflected in the inhabitant's behavior shaping the rural vernacular architecture of southern Romania, offering a large variety of information not only regarding the constructive capacity but also regarding a way of life.

Based on these discussions regarding the evolution of architecture and furniture, a six-staged value-adding methodology was proposed, containing theoretical and practical steps, which are applied in three action and intervention scenarios. The scenarios were established in accordance with the relationship *man - place - culture of construction - culture of housing* and are based on the following fundamental elements: the choice of place; positioning the construction within the property; house project; house construction and interior design. These, offer an intervention pattern in the rural built and inhabited space in a way to enhance local spirit and offer a sustainable approach that can become a tool for cultural valorization and sustainable development of the local community and its identity.

REFERENCES

- Brinckerhoff JJ (1984) *Discovering the Vernacular Landscape*. Yale University Press, New Haven and London.
- Bonenberg T (2009) Romanian rural architecture – diversity of homesteads. *Architecture, Civil Engineering, Environment - Journal of the Silesian University of Technology* 4, pp. 11-18.
- Cantacuzino GM (1977) *Sources and Halts (in Romanian)*. Eminescu Literature Edition, Bucharest.
- Capesius R (1974) *Traditional Romanian Furniture*, Dacia Publishing House, Cluj-Napoca.
- Christiaanse S, Haartsen T (2017) The influence of symbolic and emotional meanings of rural facilities on reactions to closure: The case of the village supermarket. *Journal of Rural Studies*, 54:326-336.
- Collins E (2005) *Invitation to Vernacular Architecture: A Guide to the Study of Ordinary Buildings and Landscapes*. Univ. Tennessee Press.
- Curinschi V (1981) *The history of architecture in Romania*. Technical Literature Publishing House, Bucharest.
- Donovan K (2014) Architecture and rural planning: Claiming the vernacular. *Land Use Policy*, 41:334-343.
- Eliade M (2008) *Master Manole. Ethnology and Mythology Studies. Anthology*. Eikon Literature Edition, Cluj-Napoca.
- Fei C (2010) Traditional architectural forms in market oriented Chinese cities: Place for localities or symbol of culture. *Habitat International*, 35:410-418.
- Gao Y, Li H, Song Y (2021) Interaction Relationship between Urbanization and Land Use Multifunctionality: Evidence from Han River Basin, China. *Land*, 10:938.
- Giurescu D Ștefănescu C (2010) *Romania and Communism. An illustrated History*. Corint Literature Edition, Bucharest.
- Gronegge T, Perger J, Caminada G (2013) *Beyond modernisms – A manifesto for dealing with rural culture of building, cultural landscape, crafts, identity and diversity*. Research manuscript, New Design University, Sankt Pölten, Austria.
- Hitchins K (1996) *Rumania 1866 - 1947*. Oxford University Press, Oxford.
- Hitchins K (1994) *The Romanians, 1774 – 1866*. Oxford University Press, Oxford.
- Jose MF (2010) Methodological bases for documenting and reusing vernacular farm architecture. *Journal of Cultural Heritage*, Volume 11:119-129.
- Junjira N (2012) *Cultural Landscape, Urban Settlement and Dweller's Perception: A Case Study of a Vernacular Village in Northern Thailand*. *Procedia – Social and Behavioral Sciences*, 42:153-158.
- Kalmbach K, Marklund M, Aberg A (2020) Crises and Technological Futures: Experiences, Emotion, and Action. *History and Technology*, 61:272-281.
- Khalaf RW (2021) World Heritage on the Move: Abandoning the Assessment of Authenticity to Meet the Challenges of the Twenty-First Century. *Heritage*, 4:371-386.

- Lascu N (1983) *Aesthetic Thinking in Romanian Architecture*, Meridiane Press, Bucharest.
- Leonăchescu – Năndrașu N (1973) *Stroești – Argeș. Documents and Records*, Vol. I Litera Edition, Craiova.
- Leonăchescu–Năndrașu N (2000) *Stroești – Argeș. Documents and Records*, Vol. III. Nicolae Bălcescu Literature Edition, Bucharest.
- Manoj K, Sadhan M (2009) *Bioclimatism and vernacular architecture of northeast India*. *Building and Environment*, 44:878-888.
- Mikulcak F (2015) *Applying a capitals approach to understand rural development traps: A case study from post-socialist Romania*. *Land Use Policy*, 43:248-258.
- Misa T, Schot H (2005) "Inventing Europe: Technology and Hidden Integration of Europe, History and Technology", 21:1-20.
- Mitrache G (2008) *Tradition and Modernism in Romanian Architecture*. Ion Mincu University Edition, Bucharest.
- Nilhan V (2007) *Eastern Black Sea Region – A sample of modular design in the vernacular architecture*, *Building and Environment*, 42:2746-02761.
- Niroumand H (2013) *A guideline for assessing of critical parameters on Earth architecture and Earth buildings as a sustainable architecture in various countries*. *Renewable and Sustainable Energy Reviews*, 28:130-165.
- Oikonomou A (2011) *Architectural structure and environmental performance of the traditional buildings in Florina, NW Greece*. *Building and Environment*, 46:669-689.
- Olărescu A (2012b) *The tradition of built rural landscape, Arges and Muscel*, *Transilvania University Edition*, Brasov.
- Olărescu A (2012a) *The Evolution of the Rural Household of Vâlsan Valley, Argeș County*. *NOEMA Journal*, Romanian Academy, Romanian Committee of History and Philosophy of Science and Technology, Vol. XI, Mega Literature Edition, Cluj – Napoca, pp. 331-341.
- Palestina-González MI, Carranza-Cerda I, López-Reyes L, Torres E, Silva-Gómez SE (2021) *Sustainability Assessment of Traditional Agroecosystems in the High Region of Yaonáhuac, Puebla, Mexico*. *Environments*, 8, 40.
- Pănoiu A (1977) *Wood Architecture*, Technical Publishing House, Bucharest.
- Pop V (2009) *On the Influence of Cultured Architecture on Vernacular One*. Conference series on theoretical and practical issues of built heritage conservation –Tușnad, pp. 53-63.
- Prandecki K, Wrzaszcz W, Zieliński M (2021) *Environmental and Climate Challenges to Agriculture in Poland in the Context of Objectives Adopted in the European Green Deal Strategy*. *Sustainability*, 13, 10318.
- Pulhan H (2006) *The Traditional Urban House in Cyprus as Material Expression of Cultural Transformation*. *Journal of Design History*, 19(2):105-119.
- Ramakrishna S, Ngowi A, Jager H (2020) *Emerging industrial revolution: symbiosis of industry 4.0 and circular economy: the role of universities*. *Science, Technology and Society*, 25:505-525.
- Ranesi A, Faria P, Veiga M (2021) *Traditional and Modern Plasters for Built Heritage: Suitability and Contribution for Passive Relative Humidity Regulation*. *Heritage*, 4:2337-2355.
- Rapoport A (1990) *The Meaning of the Built Environment*, University of Arizona Press Edition, Tucson.
- Rudofsky B (1964) *Architecture without Architects*. Published by the Museum of Modern Art New York, Doubleday and Company Inc., Garden City, New York.
- Ruggiero F (2009) *Re-interpretation of traditional architecture for visual comfort*, *Building and Environment*, 44:1886-1891.
- Schipper F, Emanuel M, Oldenziel R (2020) *Sustainable Urban Mobility in the Present, Past, and Future*, *History and Technology*, 61:307-317.
- Tismăneanu V, Dobrinu D, Vasile C (2007) *The Presidential Committee of the Romanian Communist Dictatorial Analysis: Final Report*, Humanitas Literature Edition, Bucharest.

Touman I (2005) Tradition, climate: As the neglected concepts in architecture. *Building and Environment*, 40:1076-1084.

Ozgur D (2007) Learning from traditional built environment of Cyprus: Re-interpretation of the contextual values. *Building and Environment*, 42:3384-3392.

Venni KV (2014) Changing social relations between science and society: contemporary challenges. *Science, Technology and Society*, 19:133-159.

Vellinga M, Oliver P (2007) *Atlas of Vernacular Architecture of the World*, Routledge Chapman & Hall, Abingdon, Oxon, England.

Vleuten E (2020) History and Technology in an Age of Grand Challenges: Raising Questions. *History and Technology*, 61:260-271.

Xenopol AD (1896) *The History of Romanians in Dacia Traiana*, Vol. XI, Organic Order 1828 – 1848. Frații Șaraga Literature Edition, Iași, pp. 95.

Zwenger K (2000) *Wood and Wood Joints*, Birkhäuser, Basel.