

## VERNACULAR HOUSING AND FURNISHING PATTERNS OF CERNATU VILLAGE, COVASNA COUNTY, ROMANIA

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### **Abstract:**

*This analysis is based on the investigation of specific structures used in traditional vernacular architecture and furniture by researching rural settlements specially chosen for this purpose on the following criteria: presence of specific structures in the construction and furniture, diversified utilisation patterns of wooden species, architectural and furniture joints.*

*The purpose of the research in the village of Cernatu, situated in the center of Covasna County, was to investigate and evaluate a series of rural landmarks that can provide the necessary data to draw conclusions regarding the forms of manifestation of specific vernacular architecture.*

*After a general research regarding vernacular housing typologies, three households were selected for detailed presentation in this article. The results of the on-site investigation are structured in special summarizing tables which contain drawings and photos realised on site. A short descriptive text which provides an overview of the current local context precedes the summarizing tables which contain detailed presentations of the three selected households.*

**Key words:** vernacular architecture and furniture; interior space; Cernatu village; on-site investigation.

### **INTRODUCTION**

Wood as a material is closely related to living. The tradition of wooden buildings, in spite its fragmented and discontinuous development has always managed to adapt itself to the modern context due to its important role in the (mostly rural) collective conception concerning life and living (Gronegger 2013, Jose 2010, Oikonomou 2011).

The natural environment is one of the shaping factors of traditional wooden architecture, through the orientation towards south of the main façade (the porch being oriented towards south), the general shape of the construction follows the lines of the landscape, taking over the organic curves of the land on which it is set on, becoming one with the natural context by establishing a new visual and spatial harmony (Mitrache 2008).

Regarding the repertoire of construction systems and materials, it can be stated that these reflect general principles on the effective use of local resources, and offer diverse expressions not only on a structural level, but also on a functional and aesthetic one (Mitrache 2008). These functional elements have been in an interdependent relationship with the structural ones, along with the change regarding the needs of residents, new solutions had to be found in order to satisfy the inhabitant's needs on both levels.

The selected area of Covasna County, Cernatu village, can provide a series of relevant conclusions regarding the stylistic, architectural and structural evolution overlapping with local tradition, geographical context, climate, thus shaping the traditional wooden vernacular house as we know it today.

### **OBJECTIVES AND METHOD**

The objective of this research is to address in a critical and synthetic manner forms and structural typologies of wooden vernacular construction and furniture of Covasna County in order to obtain results that will set the basis of the development process of an improvement methodology regarding traditional cultural and architectural values in the contemporary context.

The analysis is focused on the research regarding traditional wooden architecture of Cernatu village, Covasna County (Fig.1). There were taken into consideration a number of aspects: the household structure, the general volume and its subcomponents (walls, porch and roof), the interior space and wooden furniture of the house, the presence of timber as primary building and furnishing material.

The purpose of the research was to investigate and evaluate a series of rural landmarks that can provide the necessary data to draw conclusions regarding the forms of manifestation of specific contemporary vernacular architecture. The research was conducted on several levels (having a holistic

approach): a) investigations concerning the context and community structure (general data - geography, economy, utilities, population, surface and utilisation pattern of the built area, wooden species, household - architecture, structure and building materials, interior space composition and furnishing patterns).

After a general research regarding vernacular housing typologies, three households were selected the results of the on-site investigation being presented in summarizing tables below.

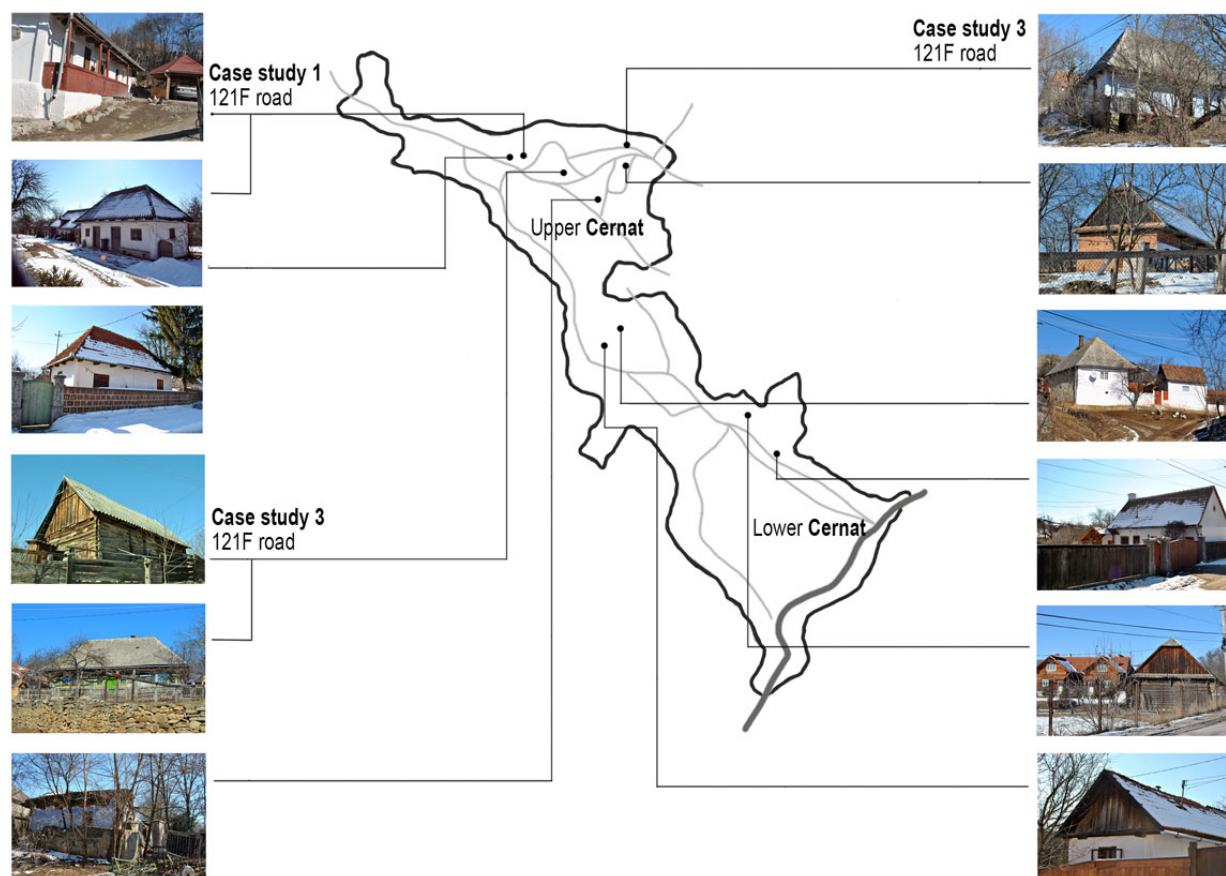


Fig. 1.

General plan of Cernatu village showing the location of the three case studies.

## ANALYSIS OF LOCAL VERNACULAR ARCHITECTURE AND FURNITURE OF CERNATU VILLAGE

Cernat is located in the center of Covasna County, in the sub-Carpathian area of Bodoc Mountains, in the western basin of Târgu-Secuiesc, small town which is at 28 km from Sfântu-Gheorghe on DN11 (Braşov - Târgu Secuiesc - Onesti). The studied village is crossed by the Cernat brook, occupies a 12900 ha surface and has over 4000 inhabitants.

The first historical testimony dates from 1332. On the right bank of the Cernat valley a stone carved foundation of a XI – XII century-old settlement was discovered. In the place called "The Holy Garden" were found the traces of a XIII<sup>th</sup> century Romanesque church. On the height of "Ika Citadel" there are the remains of a fortress with stone walls connected with earth, with an oval floor plan shape and towers, dating from the sec. XIII - XIV.

### The household: architecture, structure, materials, space utilisation patterns

The first aspect that can be remarked compared to other research areas (Sibiu, Argeş or Braşov Counties) is the scale of the plot and the position of the house which is not oriented towards the street and is protected and not close to it. The house is positioned at the base of the slope, not too steep usually.

Regarding the structure of the traditional local house oak is the most frequent choice (*Quercus robur*) in the manufacture of the sill beams and posts (Bartha & Cionca 2014). Over time, fir (*Abies Alba*) replaced oak, due to the decreased geographical spread of the species. This type of round fir log structure is very common in the studied area and has a number of typologies: round horizontal beams – log construction, post-and-truss construction, and mixed structures (Fig.2, Fig.3). The wall structure of vernacular housing is typically made of logs (fir, oak) with dimensions ranging between 120-150mm for the width and 200-300mm

for the height. These horizontal elements have special joints at the corner intersections, dovetail or lap joints being used (Bartha 2014).

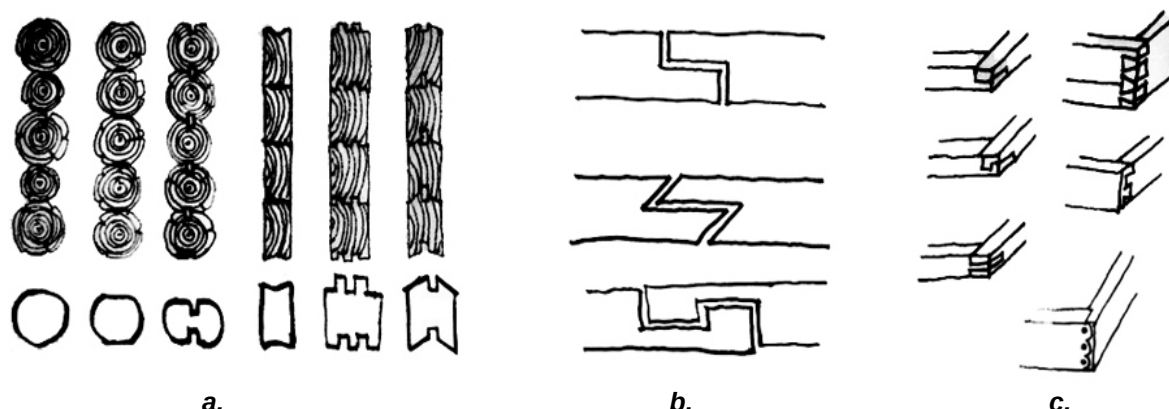


Fig. 2.

**Specific vernacular wood connections regarding the façade, wall structure – log construction: a-Log joints: shaped, notched, tabled, dovetailed pectination; b-Halved and lapped joints; c-Angle joints.**

The main structural and compositional components of the traditional housing unit are the following: the *foundation* - foundation pits are 60-80cm deep, usually made of the best stone mountain, *grounds or sill beams* - are usually made from hardwoods like oak (*Quercus robur*) and are arranged along the axes of the foundation walls; *beams* - are etched and arranged similar to the ground's longitudinal axis position, are made of oak (*Quercus robur*), fir (*Abies alba*) (Păcală 1915); *secondary beams* (smaller but more robust beams that are arranged between the yokes made of oak trunks); *rafter* (usually sectioned at the bottom to support on eaves and on the upper side to rest on the ridge and are made of fir); *collars* (horizontal elements connecting the rafters and are made usually of fir) to the *ridge purlin* (it is the top beam of the roof where the rafters meet and are made of fir or oak); *gable* (the triangular closing of the attic is covered with a number of wooden boards); *clapboard* (oak, willow, poplar and conifers) (Lăzărescu 2010, Zwerger 2000).

The house is built overlooking the yard, facing usually south. It is raised from the ground with approx. 2-3m and the access to the porch is via stone or wooden steps. Such a transit area offered by the space of the porch has emerged first of all due to the harsh winter climate and also as a necessity in order to extend the activities of the inhabitants and obtain in the same time supplementary storage space. In time, the porch has acquired a meaning not only on a functional and aesthetic level, but also on a social one (becoming a place for family gathering).

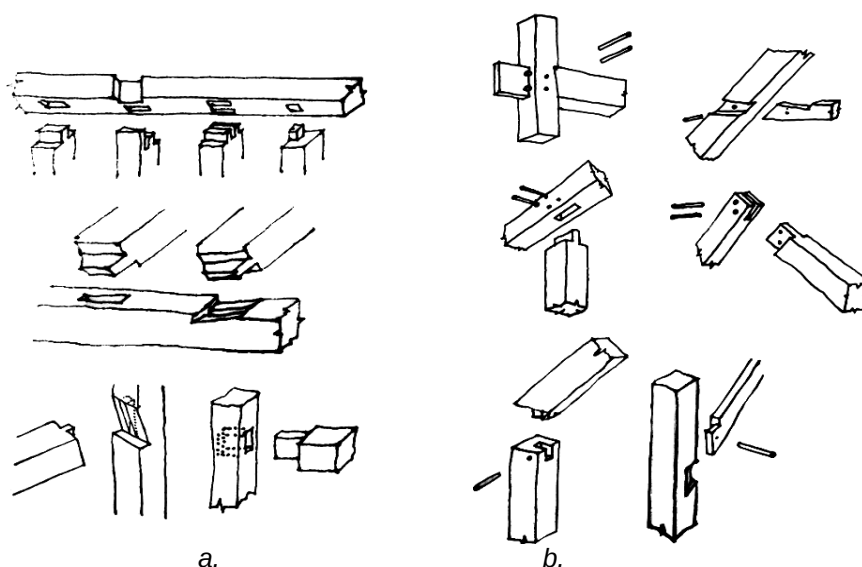


Fig. 3.

**Specific vernacular wood connections of the house structure – post and truss construction: a-Halved and notched joints; b-Stepped joints.**

The plot, which is mainly cultivated, is facing south and has plenty of sunlight. The main volume of the housing unit is continued with a series of annexes, these being directly added to the back of the ground floor. Each of these annexes has the following roles: to store hay, animals or tools.

The general volume of the house is opaque, with small openings (due to the fact that low temperatures are present 6 months of the year), the porch being the only element of the main façade which can change its status: becoming open in the summer (for outdoor activities) and closed in the winter (mainly for storage and also protection from cold weather and snow) (Fig.4).

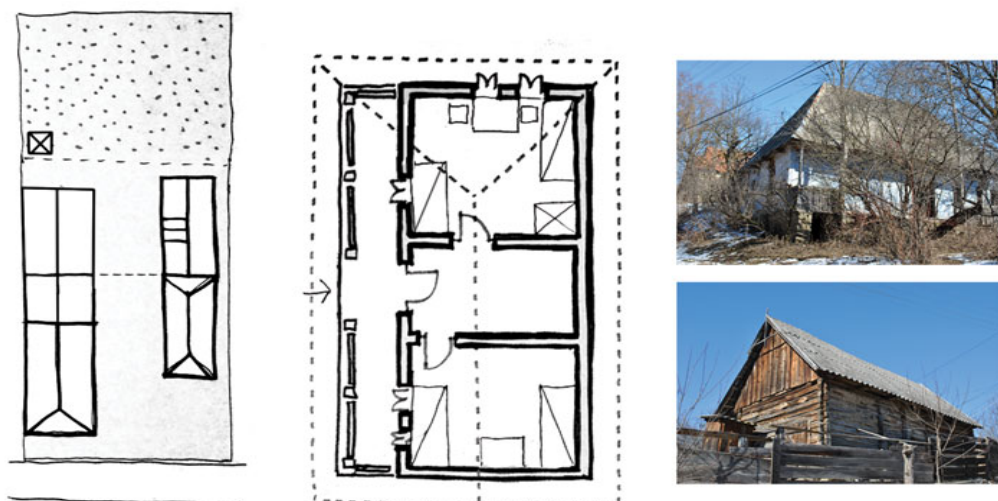


Fig. 4.

*Specific vernacular household, spatial and functional pattern of the house, main façade.*

A two-room dwelling and an entrance hall, an open courtyard on the southern façade, walls made of horizontal beams of resinous wood with ground bonding are the main characteristic elements of the traditional wooden house in this area. The household is composed of the house, the summer kitchen in the first yard; the hare house, the hatchery and the poultry house in the second yard; the dung store and the sanitary group in the garden.

The interior space is simple, the oven being placed in the center of the house, in the entrance hall, thus providing warmth to both rooms. Access is only possible through the courtyard. The kitchen can also function as an independent unit having its own access on the side facade of the house.

Hay is stacked in the gable of the barn roof structure and can be approached through a dormer, on the ground floor animal, tool and food storage spaces being found.

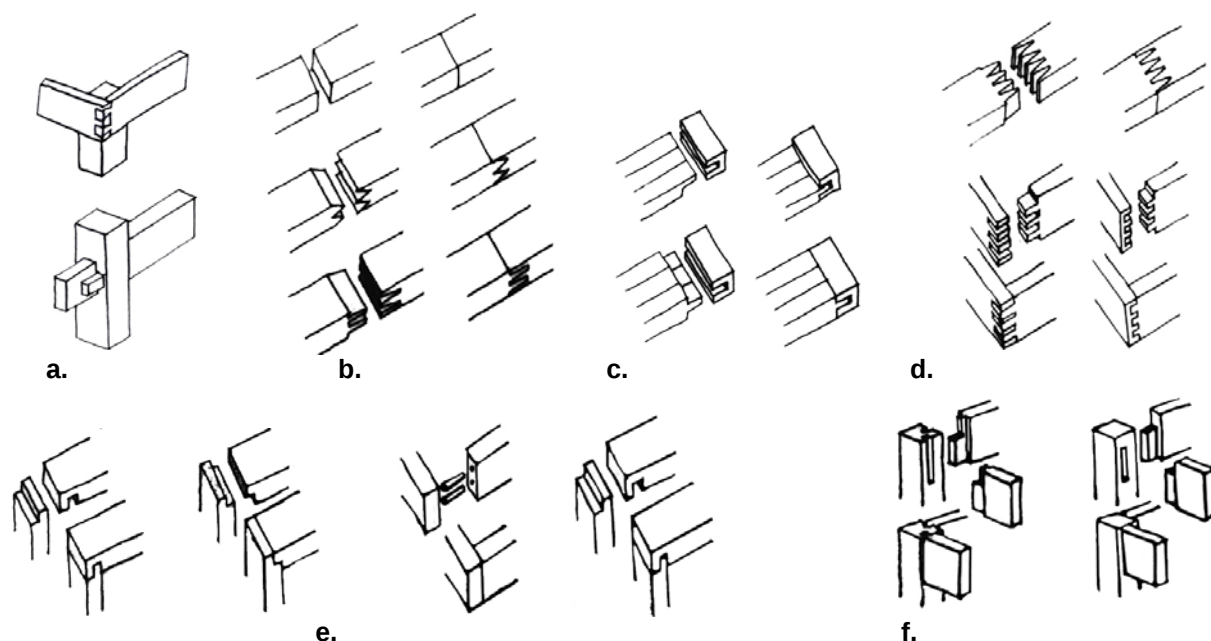
Gates and fences in the research area are of modest size their components being the following: wooden pillar with carvings which start ½ m from ground level.

#### **The household: interior space composition, furnishing patterns**

Regarding the Romanian territory, wooden constructions have known a long tradition and spread throughout the country. Archaeological research testifies to the existence of the first houses in the year 5800 BC (Curinschi 1981, Pănoiu 1977). The first designs were realised without the use of any „artificial” tools, a large sector which might be regarded as an example of this is wattlework where pieces of wood are simply gathered and not at all processed.

The interior space of the vernacular house (which is also characteristic for this region) is organized according to four compositional principles or centers: heating and cooking area, sleeping area, sitting area (long benches), storage areas (in chests, cabinets, cupboards).

Characteristic and most common vernacular wooden furniture items are: beds, tables (low, high), cabinet-table, chairs, benches, chests (Capesius 1974).



**Fig. 5.**

***Specific vernacular wooden connections for furniture, Cernatu village, Covasna County: a- Angle joints (bed); b-lapped joints; c-tongue and groove joints (chests); d-finger joints (table); e-joints employing pegs; f-parallel tenon joints (high chair).***

These objects were assembled at the beginning using simple joints: tongue and groove joints, halved and lapped joints, notched and edge to edge joints – represented in Figure 5 above - without using adhesives. With the diversification of specialized tools concerning wood processing (profiled planers, saws, chisels) complex assembly methods replaced the simple ones: tenon, step, angle joints, also joints employing pegs – seen also in Figure 5.

In the case of the analysed area the specific furniture items are the following: beds, low tables (round with three legs) tall tables, cupboard table, carved chairs, low round chairs (with simple joints), dish shelves, wooden cases and chests. These objects were realized in the first phase, by simple, fixed assembly methods, the most common joints being the notch, lapped and butt joints (Cismaru 2003). The next phase meant using specialized tools and led to the emergence of more complex joints like the tenon joints, finger joints, dovetail joints, or joints which employed wooden pegs (Olărescu 2012).

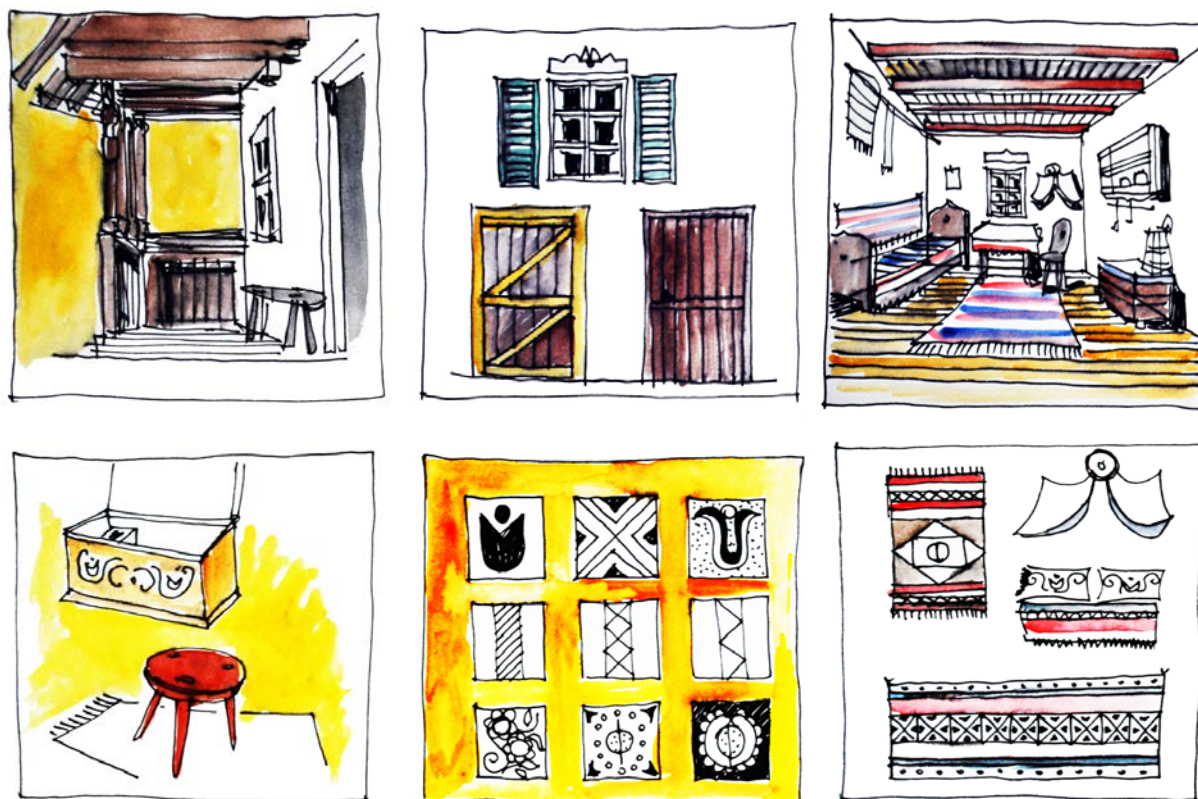


Fig. 6.

*Specific vernacular interior, furniture and ornaments, Cernatu village, Covasna County.*

The interior space is composed of three main areas: the porch, the living area and the storage area. All these spaces are organized according to the longitudinal compositional axis of the house as follows: the porch facing the street, the entrance hall and two rooms (guest and living room) placed in the core, and finally, facing the courtyard, in the back of the house, the kitchen (the stove is placed here along with cooking utensils) and storage space. Regarding the interior a series of aesthetic and qualitative differences can be observed between the two main rooms of the house (living room – multifunctional space and guest room) (Bartha 2017). The living area was furnished as follows: two wooden beds (set against the walls), a wardrobe, a low table (if any); in the guest room high table, chairs, benches, beds, chests and textile ornaments were placed.

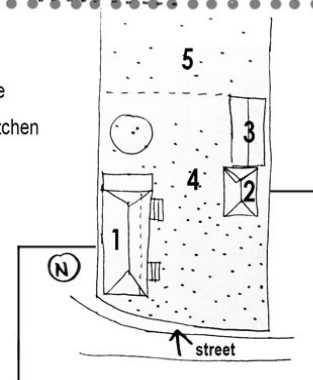
#### Case studies: presentation of the three selected households from Cernatu village

The summarizing tables below collect and reflect in a synthetic manner the results of the on-site investigation of three households (Fig.7, 8, 9) chosen for presentation due to their relevance in offering insight regarding vernacular architecture and furniture of Cernatu village. The investigation focused on two main aspects: exterior– household, construction typologies/details; interior– furniture, space utilization patterns.

## Household 1- House with low foundation and cellar

- **owner:** business man from Braşov
- the construction is in a visible state of degradation
- the owner's intention consists of transforming the house into a vacation home.
- **year of construction:** beginning of the XXth century
- **utilities:** electricity

- 1 main house
- 2 summer kitchen
- 3 barn
- 4 yard
- 5 garden



secondary facade facing the street



south facade facing the yard

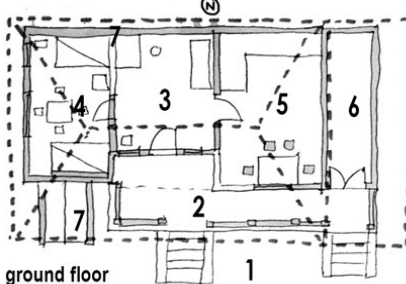


view of the south facade

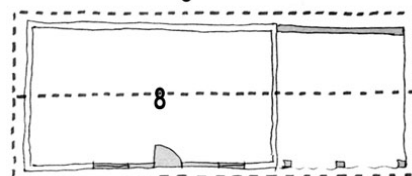


view of the household

- 1 yard
- 2 open porch
- 3 entrance hall
- 4 guest room
- 5 bedroom
- 6 storage room
- 7 access to the cellar
- 8 barn



ground floor



ground floor of the storage and barn annex



fence and entrance gate



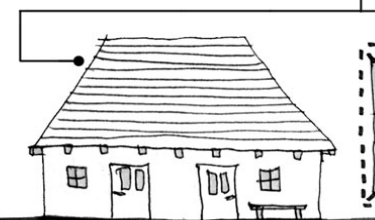
view towards the barn



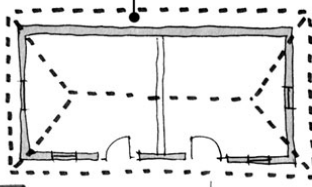
summer kitchen



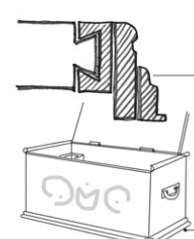
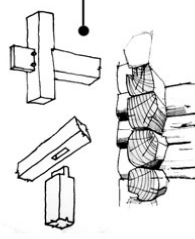
view of the garden



the facade of the summer kitchen is facing the yard - logg structure with earth plaster



the barn structure - wooden connection detail between post, beam and log



tongue and groove joint (chest placed in the guest room)

### Exterior

Household, house, barn, construction typologies

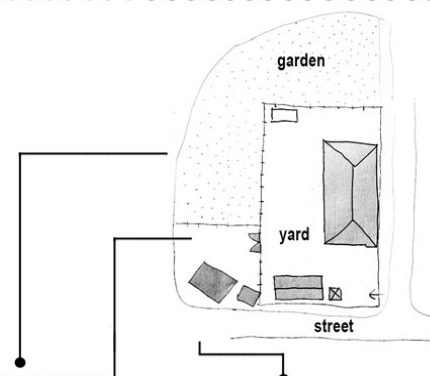
### Household

Details, space utilisation patterns

**Fig. 7.**  
**Summarizing table with results from the on-site investigation of household 1.**

## Household 2- House with low foundation and cellar

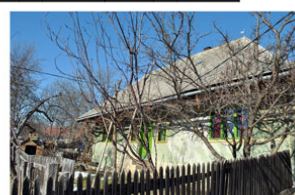
- owner: Mrs. Maria (born in 1938)
- the construction is in a good condition
- it has a single inhabitant, retired
- Mrs. Maria manages with the fruit and vegetables that she herself cultivates in the garden, she also has 8 chicken and a pig.
- once a week she is visited by her children who bring her supplies.
- year of construction: beginning of the XXth century
- utilities: electricity



main facade facing the street



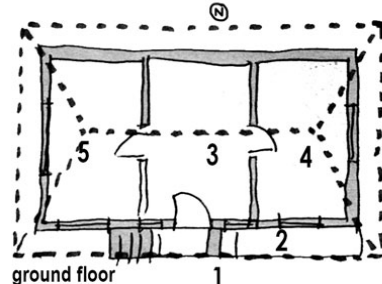
yard, view towards the barn



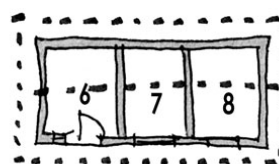
view of the porch which was enclosed during the 70's



- 1 yard
- 2 porch
- 3 entrance hall
- 4 guest room
- 5 bedroom
- 6 storage shed
- 7 pig pen
- 8 hen house



ground floor



ground floor of the annexes  
barn, animal shelter (pig pen & pen house)



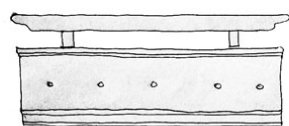
view of the household



view of the annex: barn, hay stacking in the attic



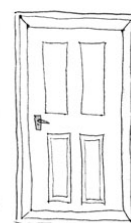
hen house and pig pen



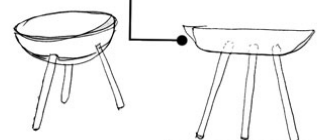
detail of a painted wooden hanger  
(placed in the guest room)



south facade



detail of the acces  
into the summer kitchen



three legged wooden low chair  
placed in the entrance hall

### Exterior

Household, house, barn, construction typologies

### Household

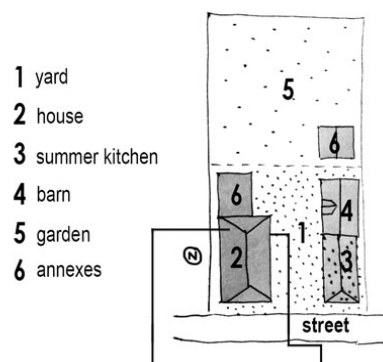
Details, space utilisation patterns

Fig. 8.

Summarizing table with results from the on-site investigation of household 2.

### Household 3- House with high foundation and cellar

- **owner:** abandoned house
- the construction is in a visible state of degradation
- the interior is also visibly damaged, the space has been abandoned for a long time. (this is also available for the annexes)
- **year of construction:** beginning of the XXth century
- **utilities:** none



view of the house from street level



view of the main facade

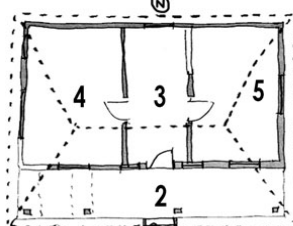


porch, south facade



entrance

- 1 yard
- 2 open porch
- 3 entrance hall
- 4 guest room
- 5 bedroom



ground floor



facade facing the yard, facing south



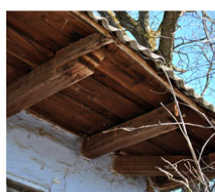
view of the yard



view of the annexes



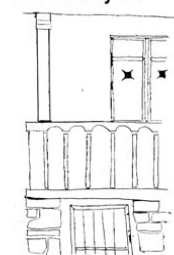
wall structure



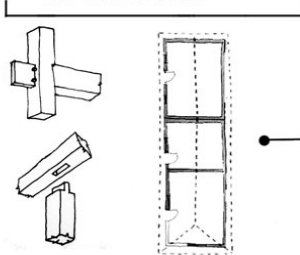
roof detail



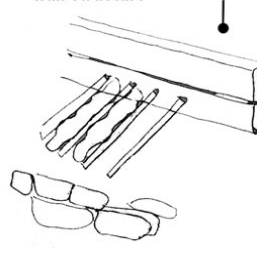
eave structure  
wooden connection between  
rafter & beam



porch detail  
foundation, cellar entrance



barn/shed ground plan  
stepped joints between pillar & beam



wall structure  
logs, rulers at 45 degrees, soil plaster

#### Exterior

Household, house, barn, construction typologies

#### Household

Details, space utilisation patterns

Fig. 9.

Summarizing table with results from the on-site investigation of household 3.

## CONCLUSIONS AND DISCUSSIONS

In terms of the use of building materials (in the three cases studied, but also on a regional level), a diversification can be observed after 1989, this process being presented in a synthesized manner as follows: until the 1930s the wall structure consisted of solid wooden logs plastered with earth or mortar and stone foundation; between the 1950's - 70's brick started to be utilised as a construction materials for walls, after the 90's reinforced concrete in combination with other materials being the main choice regarding utilisation patterns.

The traditional household has seen many changes over time. The current form and structure have their origins in the early 19<sup>th</sup> century when the rural built environment suffered massive systematization on a national level. (Olărescu 2012, Bartha 2014).

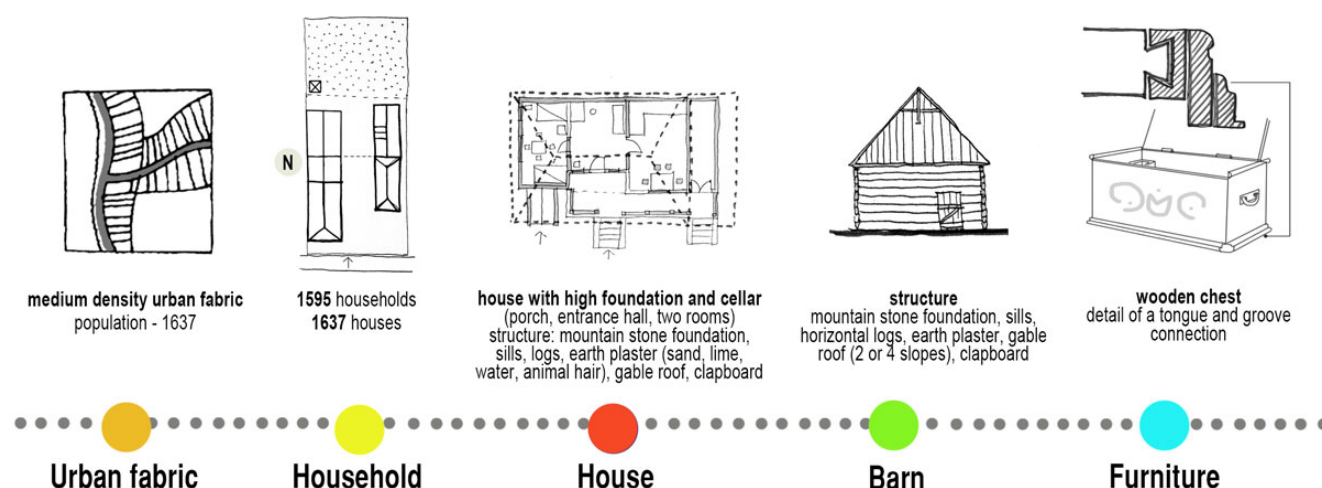


Fig. 10.

**Summarizing table containing general data and conclusions regarding the specific local household and furniture of Cernatu village.**

In time the household was structured according to the local climatic and geographical context, thus the household organisation and functional pattern being synthetised as follows: the main house (in most cases with a closed porch oriented towards the street), small storage area attached directly to the volume of the house, the kitchen (as a complementary space also attached directly to the main living areas of the house); a barn construction with haystack on the level of the gable roof, stable on the ground floor (including the swinery, henhouse); also in some cases a separate staple for cattle and sheep; manure storage and the toilet in the garden (Fig. 10). These functional models persisted and improved continuously being adapted to new requirements regarding comfort.

Regarding the wooden furniture, the range of utilized wood species was limited at first to the following: beech (*Fagus sylvatica*) and oak (*Quercus robur*). In the investigated households no furniture items dating from this period (16<sup>th</sup> century) were found. After the diversification of wood processing tools the number of species has grown including spruce (*Picea abies*), fir (*Abies alba*), sycamore (*Acer pseudoplatanus*), elm (*Ulmus glabra*), plum (*Prunus domestica*), cherry (*Prunus avium*), walnut (*Juglans regia*). In the case of the three households (case study 1, 2 and 3) we can observe the presence of vernacular wooden furniture dating from the 18<sup>th</sup> and 19<sup>th</sup> century: a chest employing tongue and groove connections, also a high table and a series of benches (utilising tenon joints) and also three legged low chairs with tenon joints or ones employing wooden nails or pegs.

The organic composition of the household is subject to an evolution dictated by the changing needs of contemporary society, thus the vernacular house has to embody a set of valuable assets that can provide inspiration and coherent guideline for contemporary creative thinking and building, which can set the base for qualitative furniture projects in neo-vernacular spirit.

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