

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 central region of Transylvania in 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 of 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 traditional Romanian wooden construction is a result of imagination, but also a direct reflection of the needs and the specific lifestyle of several generations (Cantacuzino 1977). 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.

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).

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.

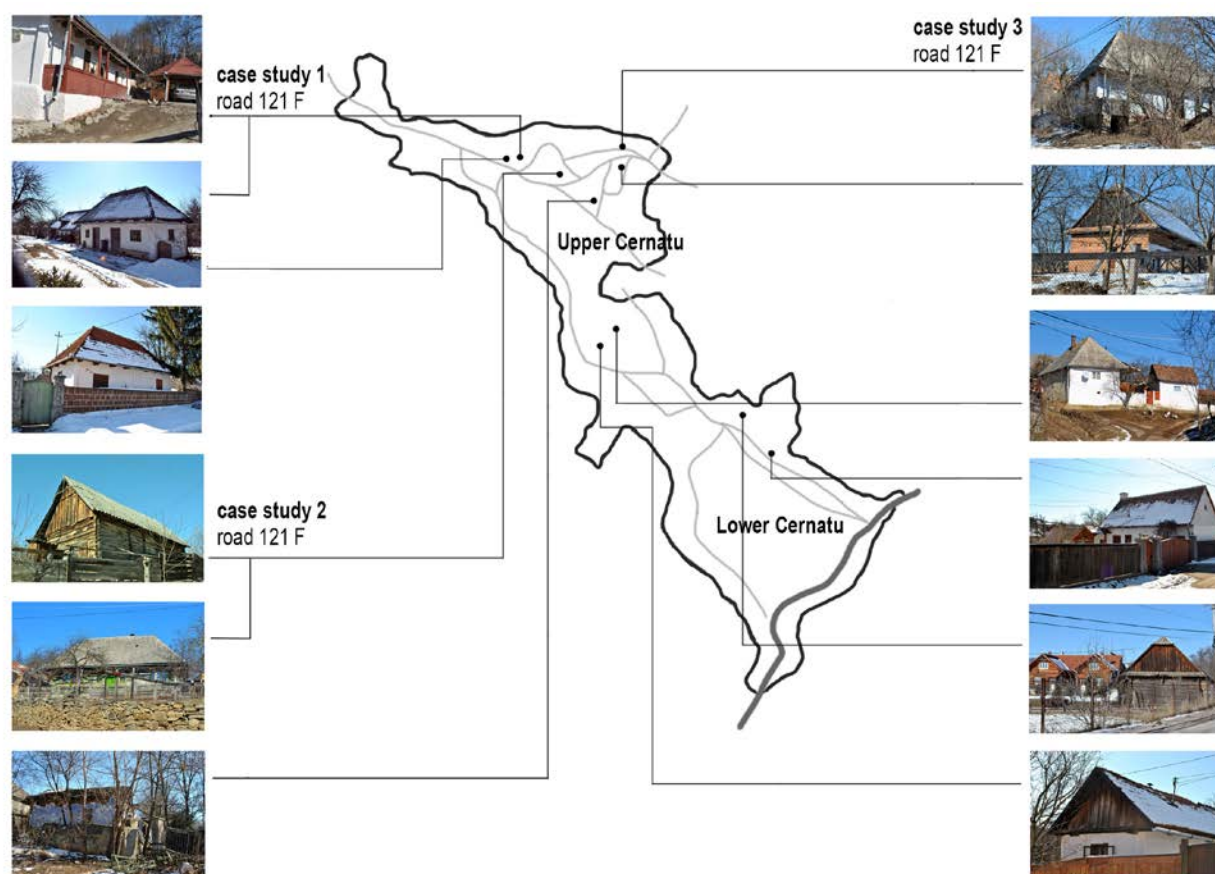


Fig. 1.

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

ANALYSIS OF LOCAL VERNACULAR ARCHITECTURE AND FURNITURE OF FUNDATA VILLAGE

Cernat village is located in the center of Covasna County, in the sub-Carpathian area of the Bodoc Mountains, west of the Târgu-Secuiesc basin and has around 4000 inhabitants. The village is crossed by the Cernat stream and is situated 28km from Sfântu-Gheorghe Municipality on DN11 national road (Braşov - Târgu-Secuiesc - Oneşti) linking two important areas of Romania: Transylvania and Moldavia.

The first documentary attestation dates from 1332. On the right bank of the Cernatu valley, traces belonging to a rural settlement from the XIIIth century were discovered. In the place called the "Holy Garden" also, traces of a Romanesque church from the 13th century were discovered. On the hill sloping across the village there are the remains of a fortress ("Ika Fortress") with stone walls, oval shape and towers, dating from the 13-14th century.

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 position of the house and barns, which are oriented towards the yard and facing each other. The house is positioned at the base of the plot, close to the street, the plot being most of the time planted and full of vegetation, ending in the western limit with a generous garden area.

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 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.4). 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).

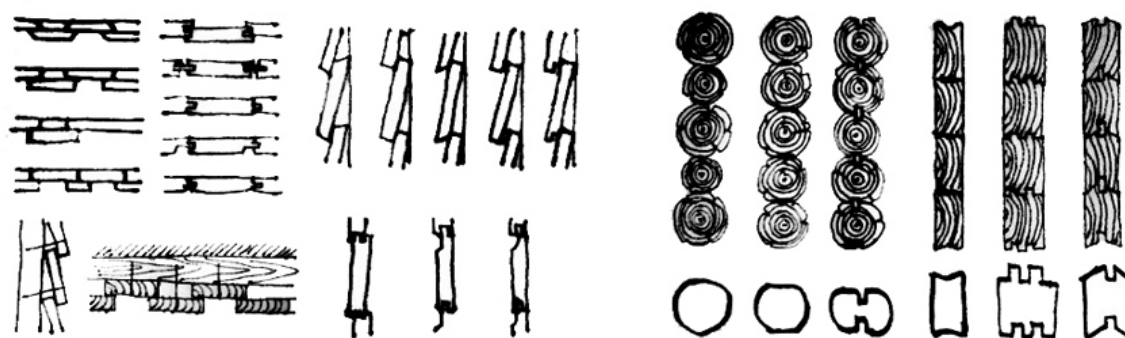


Fig. 2.

Specific vernacular wood connections regarding the façade, wall structure – log construction
Protection of the façade against weather (tongue and groove joint)
Log joints (shaped, notched, tabled, dovetailed pectination).

The house is built overlooking the street, 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 due to the harsh winter climate and 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). The plot, which is mainly cultivated, is facing south and has plenty of sunlight.

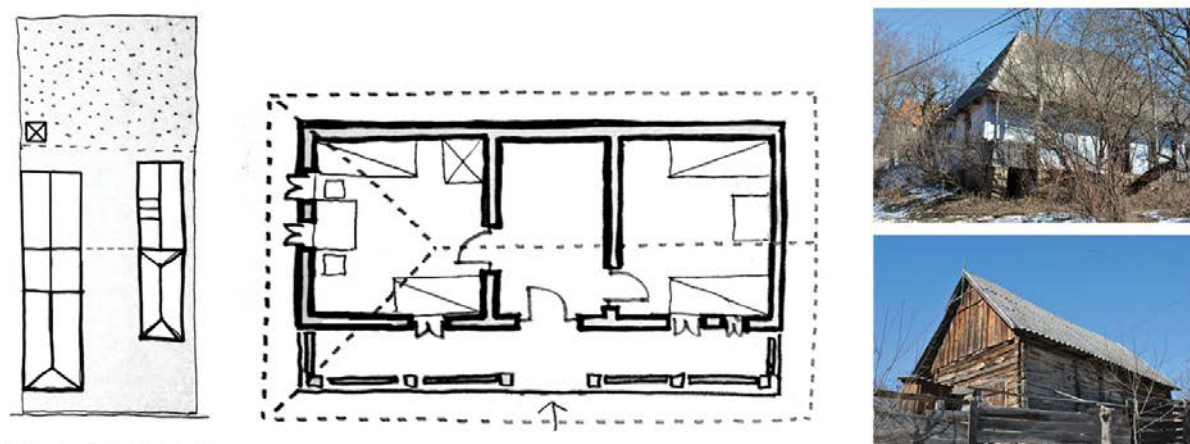


Fig. 3.

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

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.3).

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 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).

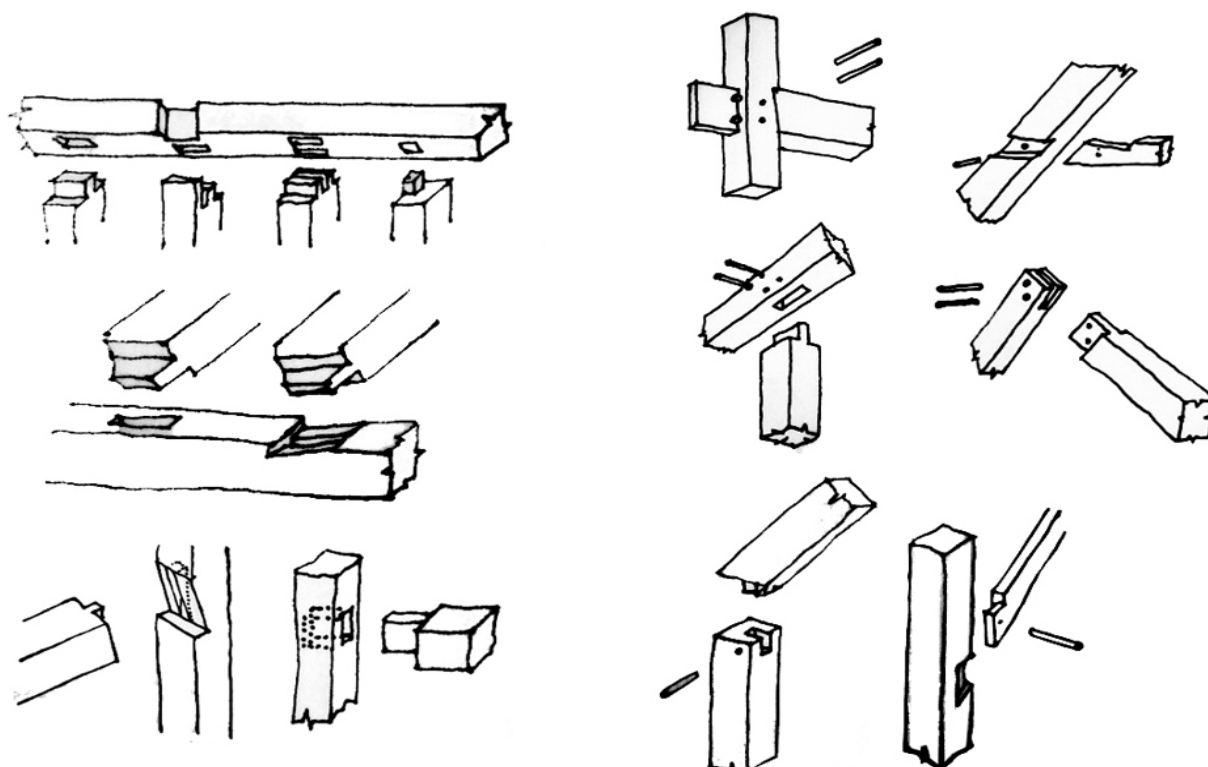


Fig. 4.

***Specific vernacular wood connections of the house structure – post and truss construction
Halved and notched joints (left) and step joints (right).***

The main volume of the housing unit is continued with a series of annexes, these being directly added to the back but also another series of barns and staples were added to the household in a parallel display towards the housing unit. Each of these annexes has the following roles: to store hay, animals or tools.

The extension of the house contains the following annexes: a storage room (approx. 2x4m), it is placed on the opposite side of the house, parallel to the longitudinal porch axis. 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.

The household: interior space composition, furnishing patterns

Traditional joints group multiple geometric configurations, depending on the desired specific and aesthetic impact (Zwerger 2000). Regarding the Romanian territory, wooden constructions have known a long tradition and spread throughout the country. These homes were built in the form of a partially underground housing unit with the wall structure made of logs and plastered with clay (Curinschi 1981, Pănoiu 1977).

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).

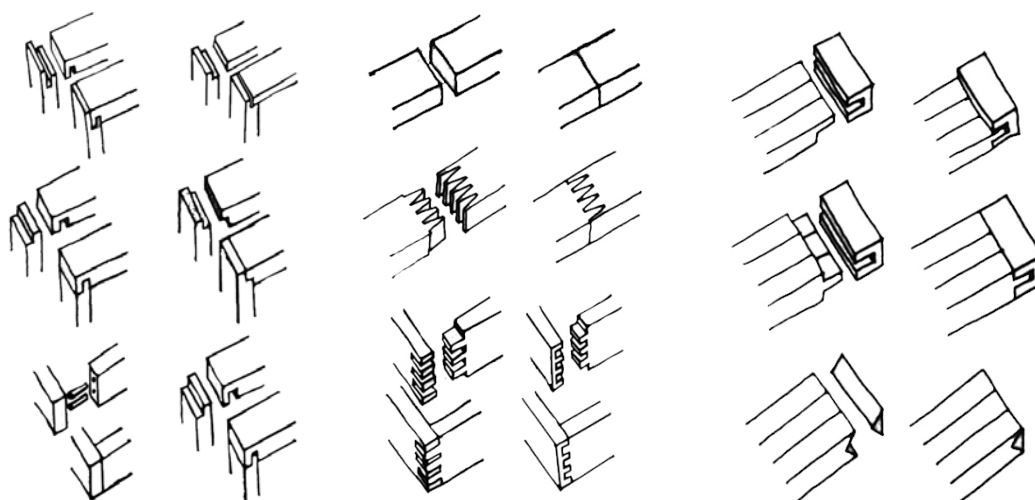


Fig. 5.
Specific vernacular wooden connections for furniture, Cernatu village, Covasna County
Tongue and groove joints, finger joints, joints employing pegs.

These objects were assembled at the beginning using simple joints: tongue and groove joints, halved and lapped joints, and notched joints – some of them represented in Fig. 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 Fig. 5 (Cismaru 2003).

In the case of the analyzed 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 (Olărescu 2012).

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, 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 and storage space (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. 6, 7, 8) 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, with cellar

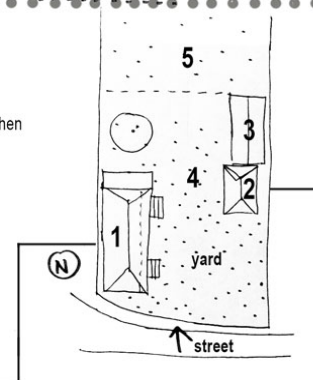
- **owner:** business man from Braşov

- the construction is in a visible state of degradation, it has not been renovated in the last 30 years
- the intention of the owner is to transform the construction into a vacation home.

- **year of construction:** beginning of the 20th century

- **utilities:** electricity

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



main facade, view from the street



facade facing the street

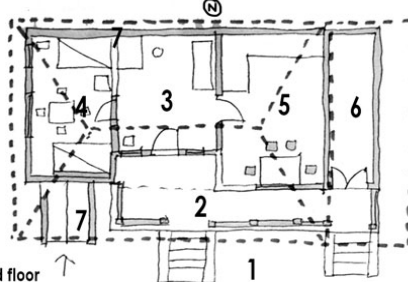


south facade

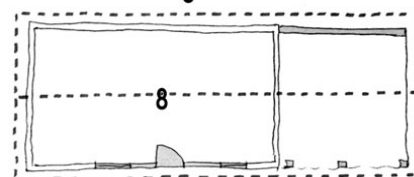


view of the household

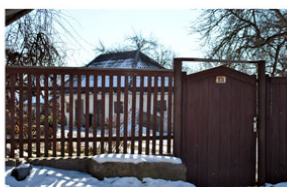
- 1 yard
- 2 open porch
- 3 entrance hall
- 4 guest room
- 5 bedroom
- 6 storage room
- 7 cellar access
- 8 barn



ground floor



barn and animal shelter



access into the household



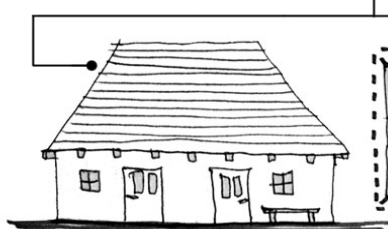
view of the barn



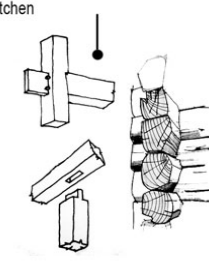
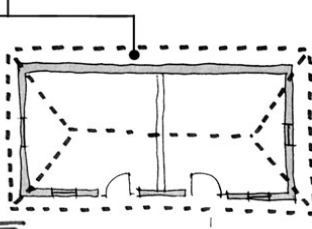
summer kitchen



view of the garden



south facing facade of the summer kitchen
logg structure with earth plaster



detail of post-beam connection
barn structure



detail of a wooden chest
tongue and groove joints

Exterior

Household, house, barn, construction typologies & details

Household

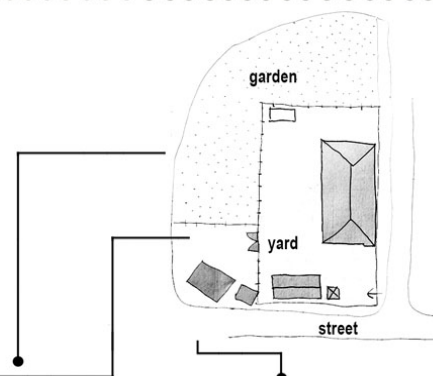
Details, space utilisation patterns

Fig. 6.

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

Household - 2 - House with low foundation, with cellar

- **owner:** Mrs. Maria (born in 1938)
- the household is in a good condition
- it has a single owner and inhabitant
- Mrs. Maria manages with vegetables and fruits from her own garden, she has 8 chicken and a pig.
- once a week her children bring her supply from Sfântu Gheorghe (nearby town)
- **year of construction:** beginning of the 20th century (modifications in the 1970's)
- **utilities:** electricity



main facade facing the street



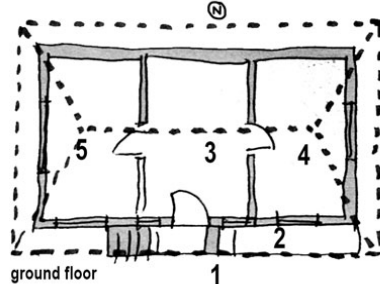
the yard, view towards the barn



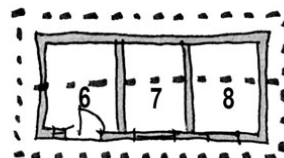
open porch transformed into a closed one



- 1 yard
- 2 porch
- 3 entrance hall
- 4 guest room
- 5 bedroom
- 6 tool barn
- 7 animal shelter - pigs
- 8 hen house



ground floor



ground floor of the barn - hen house, pig shelter



view of the household



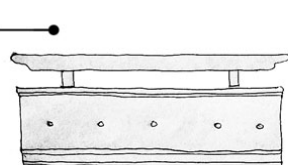
barn - animal shelter, tool storage



access to the tool storage



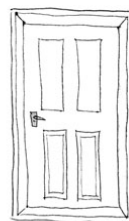
hen house and pig shelter



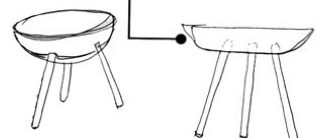
detail of a painted wooden hanger from the guest room



south facade of the barn



detail of wooden door summer kitchen



detail of wooden round low chair from the entrance hall

Exterior

Household, house, barn, construction typologies & details

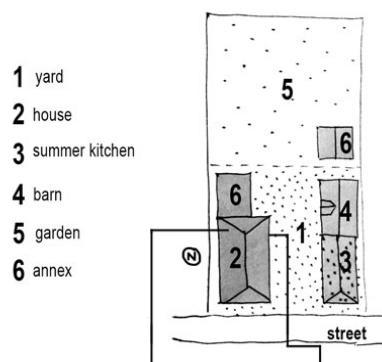
Household

Details, space utilisation patterns

Fig. 7.
Summarizing table with results from the on-site investigation of household 2.

Household - 3 - House with high foundation, with cellar

- **owner:** abandoned household
- the construction is in a visible state of degradation
- the interior space is also in this state, no interventions were made at least in the last 15 years.
- this state of degradation is available also for the household annexes.
- **year of construction:** beginning of the 20th century
- **utilities:** none



view of the house from the street



street view



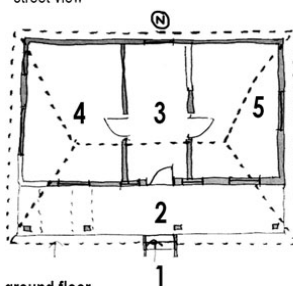
porch, south facing facade towards the yard



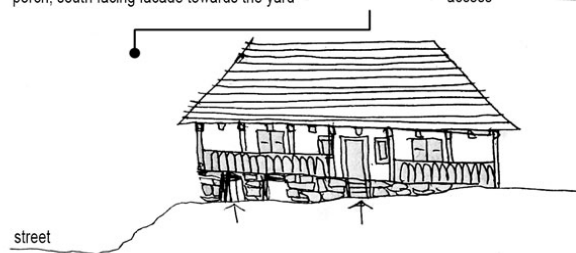
access



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



ground floor



facade oriented towards the yard - facing south



view of the barn



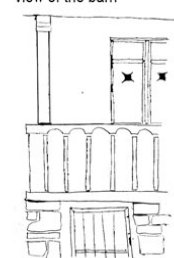
view of the animal shelter



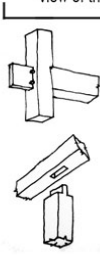
wall structure detail



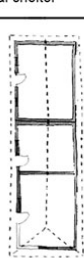
detail of the wooden eave



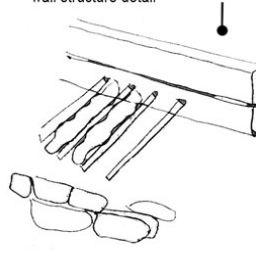
detail of the porch - stone foundation, wooden railing, pillars



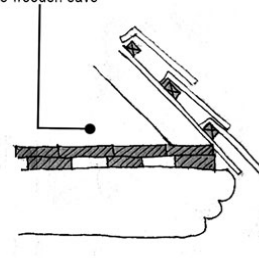
pillar-beam connections



ground floor of the barn



wall structure logs, wattle, earth



detail of the wooden eave connection between rafter & beam

Exterior

Household, house, barn, construction typologies & details

Household

Details, space utilisation patterns

Fig. 8.

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; after the 1950'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 19th century when the rural built environment suffered massive systematization on a national level. (Olărescu 2012, Bartha 2014, 2018).

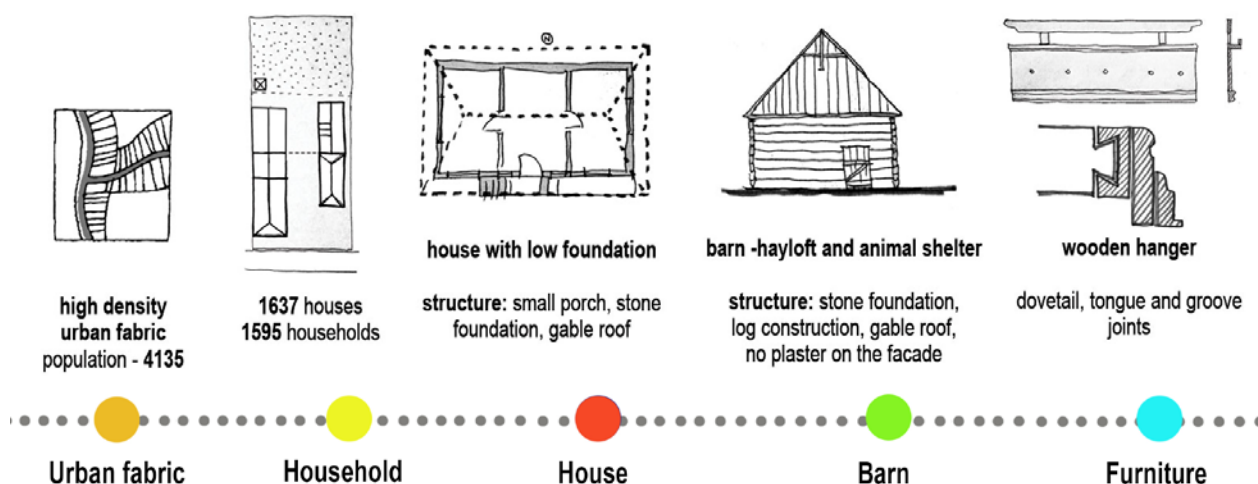


Fig. 9.

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 small or closed porch oriented towards the yard, perpendicular to 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. 9). 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*). 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*), pear (*Pyrus communis*), 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 18th and 19th century (no presence of furniture dating from earlier times): a table with a drawer employing a dovetail connection, also a high table with tongue and groove connections and a series of chests (utilizing tenon joints), three legged low chairs with tenon joints or ones employing wooden nails or pegs, painted wooden hangers.

The vernacular house embodies a set of valuable assets that can provide inspiration for contemporary projects that aim to reinterpret key cultural components as local identity, spirit and tradition.

REFERENCES

- Bartha B (2018) Vernacular Housing and Furnishing Patterns of Fundata Village, Brasov County, Romania, PRO LIGNO, Vol. 14(4):101-110.
- Bartha B, Olărescu A (2017) Guide for Value-Adding Contemporary Architecture and Furniture Design in Contemporary Spirit, PRO LIGNO, Vol. 13(4):471-481.
- Bartha B (2014) Wood Utilization Patterns Concerning Vernacular Architecture and Furniture in Vâlcea, Sibiu and Buzău Counties, PRO LIGNO, Vol. 10(1):38-46.

- Bartha B (2014) [Traditional Structures Regarding Wooden Vernacular Architecture and Furniture in Sibiu, Vâlcea and Buzău](#) Counties – Romania, Bulletin of the Transilvania University of Brasov • vol. 7 (56) no. 2 – 2014 series II - Forestry • Wood Industry • Agricultural Food Engineering, ISSN 2065-2135 (print), ISSN: 2065-2143 (CD-ROM)
- Bartha B, Cionca M (2014) Vernacular Architecture and Furniture of Vâlcea and Sibiu County, Romania in a European Context, PRO LIGNO, Vol. 10(4):53-62.
- Cantacuzino GM (1977) Fountain and Halt (in Romanian), Eminescu Publishing House, Bucharest.
- Capesius R (1974) Traditional Romanian Furniture (in Romanian), Dacia Publishing House, Cluj-Napoca.
- Cismaru M (2003) Wooden Structures for Furniture (in Romanian), *Transilvania* University Publishing House, Braşov.
- Curinschi V (1981) The History of Architecture in Romania (in Romanian), Technical Publishing House.
- Filipovici J (1965) Study of Wood, Volume 1+2 (in Romanian), Didactic Publishing House, Bucharest.
- Gronegger 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 Polten, Austria.
- Jose M (2010) Methodological Bases for Documenting and Reusing Vernacular Farm Architecture, Journal of Cultural Heritage, Vol. 11, Issue 2, p. 119-129, ISSN: 1296-2074.
- Lăzărescu C (2010) Wooden Structures, Volume IV (in Romanian), Transilvania University Publishing House, Braşov.
- Mitrache G (2008) Tradition and Modernism in Romanian Architecture (in Romanian), Ion Mincu University Publishing House, Bucharest.
- Oikonomou A (2011) Architectural Structure and Environmental Performance of the Traditional Buildings in Florina, NW Greece, Building and Environment, Vol. 46, Issue 3, p.669-689, ISSN: 0360-1323.
- Olărescu A (2012) The Tradition of Built Rural Landscape, Arges and Muscel, (Romanian) *Transilvania* University Publishing House, Brasov.
- Păcală V (1915) The Monograph of Rasinari Village (in Romanian), Archdiocesan Print shop, Sibiu.
- Pănoiu A (1977) Wood Architecture (in Romanian), Technical Publishing House, Bucharest.
- Zwenger K (2000) Wood and Wood Joints, Birkhauser, Basel.