

# SYSTEMATIC TYPOLOGIES OF NEOLITHIC CONSTRUCTIONS IN THE ROMANIAN BANAT, BASED ON A NEW METHOD OF ARCHITECTURAL RECASTING

Popovici-Donici Mihai-Corneliu

Arch. Drd., Politehnica University Timișoara, Romania, mihai.donici@gmail.com

## Abstract

In the history of art and architecture, the Neolithic Era is brushed over due to a lack of data and systematic studies thereof. Yet the Neolithic Era brought several major changes in the history of humanity, these transformations being reflected in the housing paradigm, which goes through a spectacular metamorphosis. The transition from the status of nomad hunter-gatherer to that of sedentary animal breeder / farmer generated the appearance of stable settlements and the evolution from free-shape structures to rectangular planes. Changes in trade generated counting and recording systems, which led to a new fundamental change: the transition from pre-history to history, due to the recording of information. After approximately 3 million years of slow evolution, in just 1000 years, after the last ice age, the history of humanity starts moving at a significantly greater pace. In order to study these changes as manifested in architecture, we started from the premise that, due to the insufficiency and inconsistency of the data found, the current method of architectural recasting is based on an approximate transmission of the archeological data regarding locations and traces of structures, to sketchers of uncertain qualification, who draw up axonometric projections or decomposed perspectives with unclear size references. We understand the need to facilitate spatial perception, but scientific rigor requires a systematic approach. Thus, we started the study by drawing up a new method of architectural recasting, in two stages:

- 1- Systematic data recording by means of 6 sheets with data on geography, climate, technology, economy, society, culture.
- 2- Interdisciplinary analysis of data in a team comprised of archaeologist, architect, structure engineer; establishment of a stable structural system and geometrically correct representation of the architectural volume by means of a set of drawings that cover all planes, characteristic sections and facades on a scale of 1:50, and an axonometric projection of 1:100.

The method was tested by analytic application on a Neolithic structure, by publication in specialized magazines and presentation during international conferences, and was completed subsequent to a consistent feedback of the academic community interested in the subject, by the addition of a textual description datasheet to the graphic language that is specific to architecture. With this method, sets of 3 architectural recasts from the Vinča Neolithic culture and the local cultures in the Romanian Banat were systematically drawn up, which allowed for the establishment of local typologies. This paper **establishes the first regional typologies** by starting with a set of 3 local typologies from the same culture - the Uivar, Parța

and Foeni sites. We found the transition from an architectural form of parallelepipedic mono-block with a two-escarpment roof for the Uivar-Parța sites, to a mono-block with a portico on the short side in the case of Foeni, which foreshadows the megaron plane.

**Keywords:** architecture, archaeology, Neolithic, Vinča culture, recasting, typology.

## 1. INTRODUCTION

In order to structure the information on the history of architecture, we created an original method of architectural recasting, in two stages:

- 1- Data sheets synthetizing data on geography, climate, technology, economics, society and culture.
- 2- Boards that determine geometrically the architectural volume, representing: all the planes, characteristic sections, facades, axonometric projection of 1:50, 1:100, textual description sheets.

By drawing up sets of at least 3 recastings on a historic site, important local typology conclusions can be reached.

By generalizing the study on culturally and temporally coherent areas, local typologies can be synthesized, which can be included in the history of architecture.

We applied this architectural recasting method for the Vinča and associated cultures in the current area of the Romanian Banat, the Uivar, Parța and Foeni sites, obtaining local and regional typologies for a period of time comprised between 5200 – 4600 BCE.

## 2. THE VINČA CULTURE. LATE VINČA

The northern area of the Vinča Culture--thus named after a town in Serbia where important research has been conducted and discoveries have been made--overlaps the historical Banat, on the plain situated at the confluence between Timis and Danube, as Neolithic migration often followed the course of a river.



Fig. 2.1. Situation of the Vinča Culture in the Balkans, according to "Civilizație și cultură" (Meridiane 1991 Publishing), Maria Gimbutas, p.15.

A separation from the Early Vinča was necessary, as changes occur now that generate new civilizations. There are also numerous migrations with a strong impact. These changes were discussed by Gh. Lazarovici in 1994, and he used the term "the Vinča C site", marking three groups of elements.

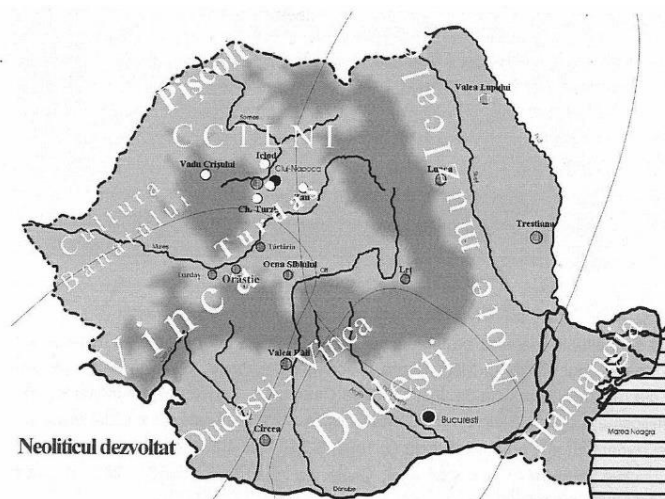


Fig. 2.2 The distribution of Middle Neolithic in Romania, in "Arhitectura neoliticului și epocii cuprului din România", C.M. Lazarovici, G. Lazarovici, p. 119

For the current region of the Romanian Banat, studies have been carried out under the coordination of Florin Drașovean in Foeni--1991-2013, Hodoni--1985-1991 and Uivar, together with Wolfram Schier, in 1999-2009--as per the data provided by FI. Drașovean. For Uivar, carbon dating was carried out, which resulted in an age of 6800 years. For Foeni, the certified period is 6700 years ago.

The research carried out on compact settlements revealed that they were placed in areas not affected by floods, yet in the proximity of lakes or rivers, as well as forests--the size of which we cannot know for those times. The research is, clearly, only partial--some areas are still being researched, the analysis of well-documented cases allowing for the understanding of the evolution of the Late Neolithic and Eneolithic.

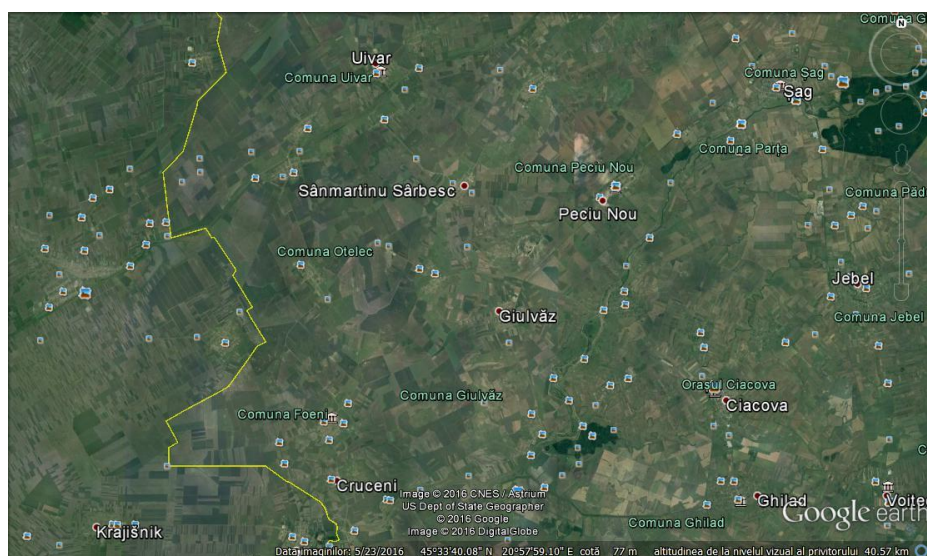


Fig. 2.3. Location map for the Uivar- Foeni – Parța triangle, source: <https://www.google.com/earth/>

### Uivar

The current town is located in the region of the Timiș-Bega rivers, the Neolithic settlements being situated on alluvial sediments or other higher areas around the water. An area of over 11 ha has been researched by aerial photography, geomagnetic exploration, over 8 surveys and 3 areas, totaling 1300 square meters (Schier, Drașovean apud. "Arhitectura neoliticului și epocii cuprului din România. Neoliticul", C.M. Lazarovici, G.Lazarovici, p.480). In the central area, archeologically significant deposits are over 4 meters thick.

The lodgings seem located in rows, 4-6 meters between them. Three well-researched houses will be rebuilt, in parallel to already completed recast lodgings, in order to figure out the local typology.

## **Parța**

The area witnessed an overlapping of various civilizations, with carriers of the Vinča C phase, but also evolutions that contribute to the formation of the Banat culture. There are different evolutions in the architecture of the area. We have encountered housings with oval or rectangular pillar holes, large and deep, sometimes in steps. This type of housing is not present only in Parța, but also in other places, including Foeni.

## **The Foeni Group**

Is important to late Vinča because it marks the second migration from the Vinča C "shock." The Foeni migration triggered several processes, among which:

- The conclusion of the evolution of the Banat Culture
- The birth of the Petrești-Transylvania Culture etc.

For some time, the Foeni Group is contemporary with the Vinča C Culture. Architecturally, Foeni-type complexes are related to those in Parța (Vinča C 1) – large housings, with cavities in steps.

The correlation between Foeni developed and Vinča D1 may place the evolution of the Foeni Group in the Vinča C2 period, meaning between years 4950 – 4500 BCE, carried out by Schier, Drașovean in 2004 (apud. "Arhitectura neoliticului și epocii cuprului din România. Neoliticul", C.M. Lazarovici, G.Lazarovici, p.496).

## **3. AREAL TYPOLOGY**

By studying local typologies, conclusions can be drawn for coherent areas belonging to the same population and time period. We can thus see, in terms of stable constructions, the coherence of a model in which, with the same building techniques and foundation systems, wooden frame resistance structures, with embedded beams, casing in two escarpments, closing systems, and interior division systems, similar architectural forms would be obtained. There were practically small variations in terms of the sizes of the internal divisions, which made it that strictly geometrically speaking, each house was different, although the typology was the same.

The phenomenon is known in all closed or only lightly influenced civilizations; technological progress is slow and lengthy. Spatially, we have parallelepipedic volumes, a variable number of internal divisions, with cases in which people could live upstairs, in an area that was more like an attic than a floor, with a simple roof truss in 2 equal longitudinal escarpments and 2 dead walls on the short sides of the volume. In some cases we discovered the presence of structural elements supporting an area of constructions that had become unstable due to the fact that pillars encased in the ground were rotting, the features of the house were unequal and the joining systems were unstable. Also, locally, entrance protective systems were discovered: covered but open areas that appear in temperate climates with the increase of the material processing capacity. The 500 cm console protrusion of the roof was necessary because the clay walls required protection from the rain. There are traces of treatment of the clay walls with paint obtained from natural pigment, from beige to brown, in geometric motifs that could play an aesthetic and representation role, underlining the occupants' social position. Also, the volume and size of the construction within the range of structural possibilities of the materials used is proof of the status and capacity of the community erecting and using the construction. This structural system requires continuous maintenance, being able to last for a certain number of years, in which period of time there would be fires, floods, earthquakes - which led to the construction of successive structures on the same location, with small variations, or in the vicinity; this practice led to an artificial rise in the level of the inhabited areas. There are cases of areas that have become insanitary, which required the relocation of the community or voluntary fires. Also, there could also be involuntary fires, or fires resulted from human conflicts. This allowed archaeologists to discover well-preserved sections of clay, which show the structure of walls made of intertwined wicker, sometimes covered in clay, or the above-mentioned geometric motifs.

We will conclude the local typologies in the studied areas and we will finally analyze common characters, variations or evolutionary processes.

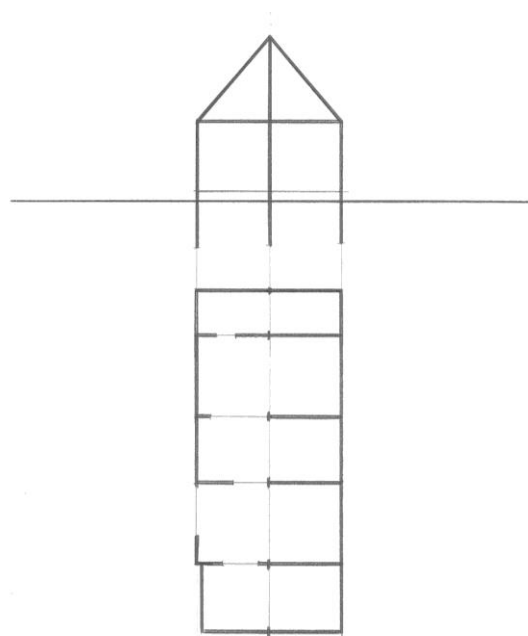
For the area of the present-day Uivar, during 5200-5100 BCE, the outlined local typology is represented by the parallelepipedic mono-volume, with a roof in two longitudinal escarpments and multiple interior divisions. In one single case, for H3 f-1, we can see a group of pillars on the southern side, by the access hole, besides structural alignments; this could signify the beginnings of protecting the entrance with an expansion of the roof in an overhang.

For the area of present-day Parța, approximately 100 years later, namely 5100 - 5000 BCE, one of the recast houses is also a parallelipedic mono-volume with a roof in two longitudinal escarpments and two interior divisions; the other two examples that showcase successive reconstructions on the same location show the same mono-volume, which is added a portico that protects the main access, situated on the short side.

In the area of present-day Foeni, approximately 500 years later, namely 4600-4500 BCE, all the three recast houses show the same mono-volume typology, with two rooms on the inside at the first floor and habitation in an open attic, with a portico in the area of the main access, on the short side, general portico for constructions S8 and S9 and partial for S12. The porticos were oriented towards the south-east in the case of the two general ones and towards the south in the case of the partial one. This orientation towards sunny cardinal points is correct and favorable for sanitation and light access.

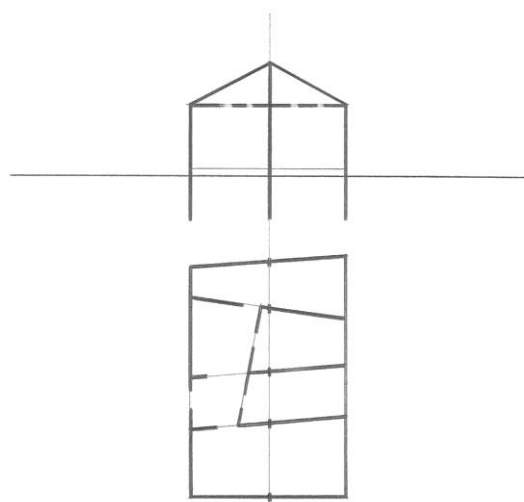
Thus, the study intercepts **the emergence of a new architectural element - the portico** - a protective area for the entrance, but also a transition from indoors to outdoors and vice versa, that will become characteristic for the temperate area. It appears partially or fully on the short area, oriented towards the south, south-east or east, being covered but open on one, two or three sides. This area can have, during favorable seasons, certain household or production functions.

Its technical execution, supported in isolated pillars, inserted into the ground, indicates an evolution of the described Neolithic structural system, as well as a typological evolution towards interior models.



INFORMAȚIE CEEȚĂ	INFORMAȚIE ESTIMATĂ
RECONSTITUIRE CONSTRUCȚIE H4b-1 (f. 542)	ARHEOLOG - F. DRĂGOȘIAN
PERIODA - 5200-5100 a. Chr.	ARHITECT - M.C. BODICI
LOCALIZARE - ACTUAL UIVAR ju. TIMIȘ - RO	PLANȘĂ - SCHEMA TIPOLOGICĂ
FUNCȚIUNE - LOCUINȚĂ P+M	SCALĂ - 1:100

Fig. 3.1. Uivar construction typology H4 b-1



INFORMAȚIE CEEȚĂ	INFORMAȚIE ESTIMATĂ
RECONSTITUIRE CONSTRUCȚIE H4a-1 (f. 531)	ARHEOLOG - F. DRĂGOȘIAN
PERIODA - 5200-5100 a. Chr.	ARHITECT - M.C. BODICI
LOCALIZARE - ACTUAL UIVAR ju. TIMIȘ - RO	PLANȘĂ - SCHEMA TIPOLOGICĂ
FUNCȚIUNE - LOCUINȚĂ P.	SC. - 1:100

Fig. 3.2. Uivar construction typology H4 a-1

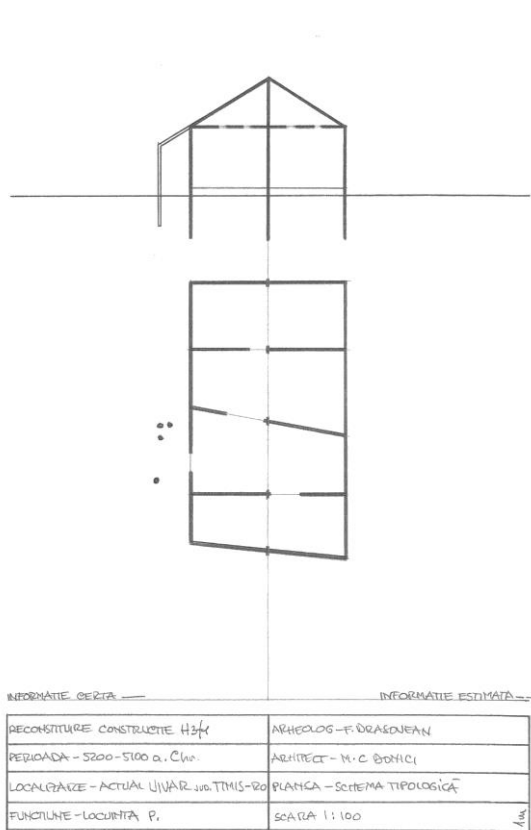


Fig. 3.3. Uivar construction typology H3 f-1

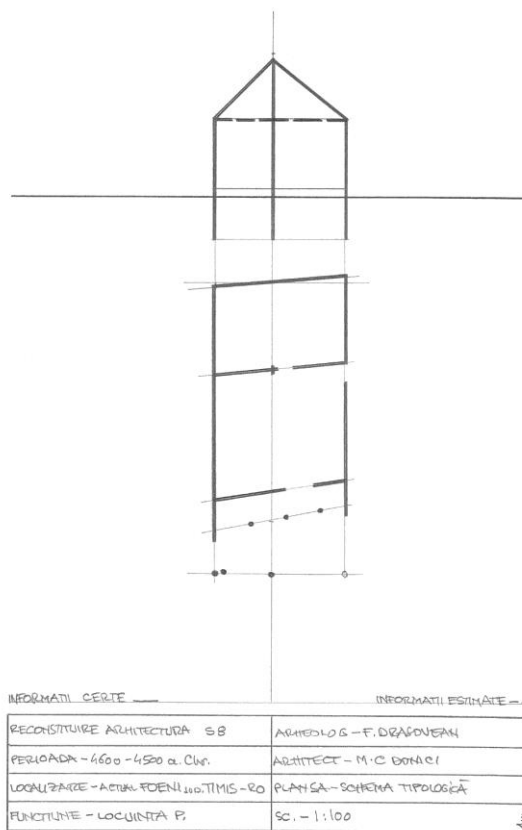


Fig. 3.4. Foeni construction typology S8

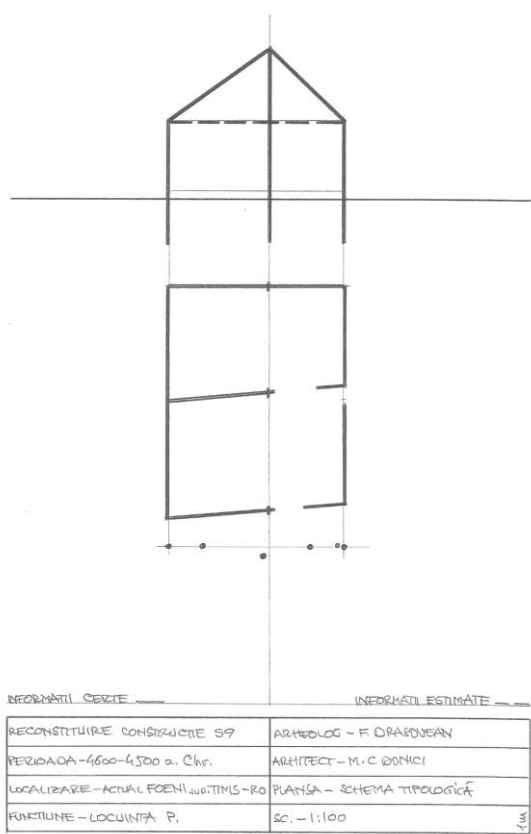


Fig. 3.5. Foeni construction typology S9

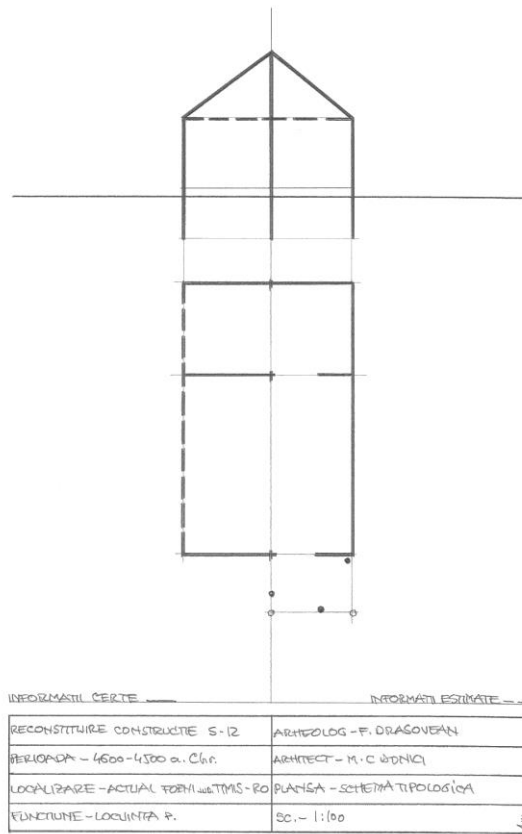


Fig. 3.6. Foeni construction typology S12

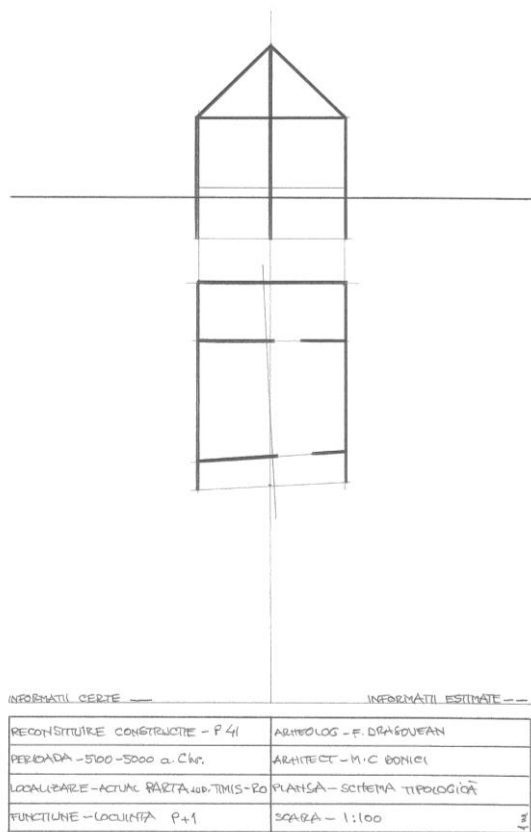


Fig. 3.7. Parța construction typology P41

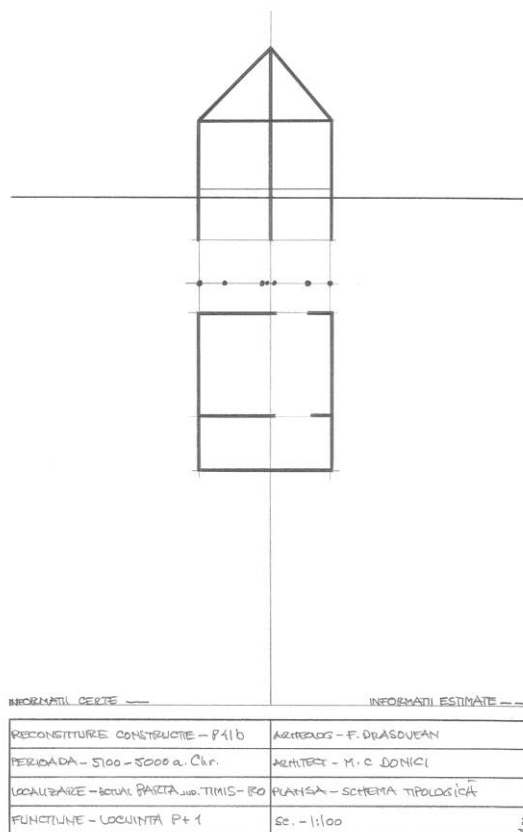


Fig. 3.8. Parța construction typology P41 b

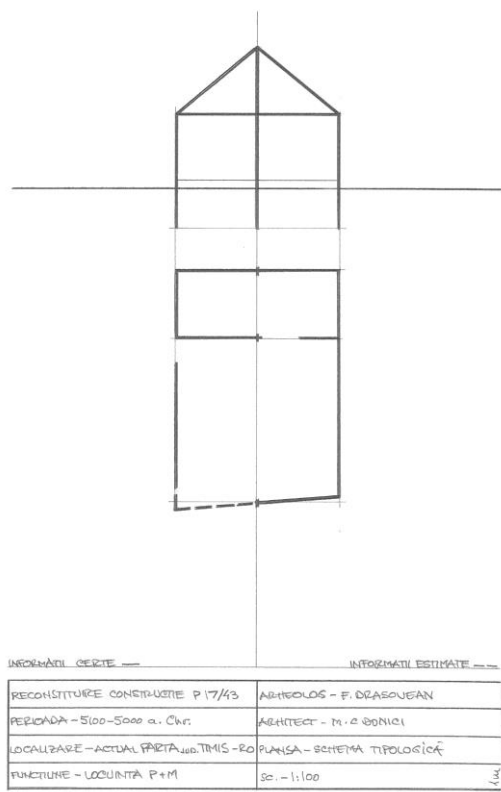


Fig. 3.9. Parța construction typology P17/43

#### **4. CONCLUSIONS**

By analyzing the field of construction in Neolithic architecture and finding that archaeology is especially interested in volumetric and operational recasting, which leads to axonometric projections or decomposed perspectives, which favours an easier spatial perception, we have devised a new method of architectural recasting of the constructions in two stages. In the first stage, starting from the establishment of the architectural form by 3 inter-related environments: geo-climatic, techno-economic, and socio-cultural, 6 data sheets were drawn up, providing a concentrated view of the existing data. Then, using the data afferent to the archaeological research and the site excavation plans assimilated by us as foundation plans, a static analysis of the potential structures was carried out. On these grounds, an architect and a structural engineer established a potentially viable structural system, with no stability issues. In the second stage, the architect carries out a geometrically correct representation of the built volume, by drawing the boards: foundation plan, floor plan, roof plan, characteristic section, north facade, south facade, east facade, west facade and axonometric projection, using a graphic system inherent to architecture. The boards will be accompanied by a textual description of the recasting, and the final result may be used in order to draw up local typologies subsequent to analyzing a significant number of constructions.

By practicing the method on a case study applied to the late Vinča culture in the Romanian Banat, a spatially and temporally compact area was selected, between the present-day communes of Uivar, Foeni and Parța. Local typologies help establish full typologies, that contribute to architecturally coherent timelines for various historical eras. We created this new method, tested it in several versions and applied it on this case study that must be continued in order for us to obtain a general history of Neolithic architecture.

We observed a high coherence of the construction system in this geographical, temporal and cultural area, a characteristic that is perpetuated in closed or semi-closed traditional civilizations, in which construction methods repeated with slow evolutions. The differences between constructions were determined by dimensional variations of internal divisions, in accordance to the number of inhabitants.

From a volumetric standpoint, we have a parallelepipedic mono-volume with a variable number of internal divisions, inhabited on the first floor and sometimes in the attic, with a roof in two longitudinal escarpments and dead walls on the short sides, sometimes with later additions.

With average openings of 4-5m due to construction possibilities, lengths that depend on the number of divisions, roof trusses inclined at approximately 45 degrees, due to the waterproof abilities of the thatch, these constructions allowed the use of the attic for habitation or storage. The height of the constructions was, according to geometric data, approximately 2.5 m, with a roof of approximately 3 m in the center part, which makes the total height of these houses approximately 5.5-6 m.

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