

# Brnjic Village Near Kakanj: Museum of the Bosnian Chardaklia Houses

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**Abstract**— *The Brnjic village is located in the central part of Bosnia and Herzegovina, in the Kakanj municipality. It is 12 km from Kakanj by air, and 17 km from Zenica (Geographic coordinates: 44°13'51.14"N, 18°07'18.36"E, Elevation: 797 m). This village, as well as a large number of surrounding villages (Starposle, Basici, Pedici, Turalici, Hodzici, Varalici, Podborje) in the Ribnica river valley, can be reached by a relatively good paved road which, due to work on the exploitation of stone in the quarry, has been devastated in places. The Brnjic village is a typical Bosnian village located on a wide slope of a river valley, under a forest with pastures, above a vast strip of arable land. The rich orchards cultivated by humans complete the picture of the symbiosis of man and nature in the best expression of this term. According to the 2013 census, 322 inhabitants, all Bosniaks, lived in it, in 106 households. Several families live in the Brnjic village: Kovac, Merdic, Skulj, Sljivo and Colak. There is no settlement in Bosnia and Herzegovina with so many preserved Bosnian chardaklia houses. The houses have different levels of preservation of the original solutions since their structures have been adapted over time to the new needs of man. The 'metamorphosis' of the spatial-physical structure of the houses was 'evolutionary', whereby the transition from the original design to the present state can be clearly followed.*

**Keywords**— *Brnjic village, Sljivo family house, Colak family house, Bosnian chardaklia house.*

## I. INTRODUCTION

During 2015-2016, the author of this paper worked on the very extensive project 'Bosnian chardaklia house', when he visited the entire area of Bosnia and Herzegovina and visited all chardaklia houses known to him. He finalized this field research work with a comprehensive book (1322 pages, format 29.7 x 29.7 cm) which was published under the title of the project <sup>[1,2,3]</sup> (published by the Faculty of Architecture of the University of Sarajevo). All houses (55 of them) are presented with detailed architectural plans (made in CAD), which gives the possibility of their 'reconstruction', according to the various needs that the future brings. About 80 people, whose names are listed in the special appendix of the said book, helped the author in various ways in this extensive work. As the book was written in Bosnian and published in a small number of copies, the author published several scientific papers in English (which are visible on the Internet) where he presented some of these houses and thus made them available to the whole world.

The Brnjic village is located in the central part of Bosnia and Herzegovina, in the Kakanj municipality. It is 12 km from Kakanj by air, and 17 km from Zenica (Geographic coordinates: 44°13'51.14"N, 18°07'18.36"E, Elevation: 797 m).

This village, as well as a large number of surrounding villages (Starposle, Basici, Pedici, Turalici, Hodzici, Varalici, Podborje) in the Ribnica river valley, can be reached by a relatively good paved road which, due to work on the exploitation of stone in the quarry, has been devastated in places. The Brnjic village is a typical Bosnian village located on a wide slope of a river valley, under a forest with pastures, above a vast strip of arable land (Figures 1, 2, 3). The rich orchards cultivated by humans complete the picture of the symbiosis of man and nature in the best expression of this term. According to the 2013 population census, 322 inhabitants, all Bosniaks, lived there in 106 households <sup>[4]</sup>. Several families live in the Brnjic village: Kovac, Merdic, Skulj, Sljivo and Colak.

All the houses from the Brnjic village near Kakanj that are presented in this paper were built from the beginning of the 20th century (around 1905). Each of them originally had an open hearth and a roof covered with 'shintra' <sup>[5]</sup>, which was later reconstructed and covered with tiles. The space above the hearth (since there were already connecting beams) was closed, creating new rooms (chardaks). Earth ovens were made instead of hearths (in the rooms, an oven with clay pots). The chimney to which the stoves were connected was also built of brick. The baths are made of a unique piece of travertine with a carved profile like a modern shower-tub. The stone for the houses was quarried at the locality 'Krcovina', while the clay for making adobe was quarried at the locality of 'Urva'. The shaper was made of fir tree branches and clay with the addition of sawdust, straw and chaff.

In the Brnjic village near Kakanj, there are a large number of Bosnian chardaklia houses that stand as free physical structures, and which their owners (successors of their builders) use for secondary housing needs, for the housing of young married couples (until they build 'their own house') and housing people who are in trouble (as was the case with refugees during the 1992-1995 war).

In addition, as the owners of these houses built new houses, the 'old houses' remained as a potential that preserves the memory of family continuity. There are also cases where the heirs of the houses, having achieved a safe and rich professional career and housing and any other care in the big city, have renovated the houses of their ancestors and spend their vacation time in them using the enormous 'embodied energy' that the house collected for decades through the residence of its first builders and the latter's heirs. Thus, from the spatial organization of these houses, their construction and materialization, it is possible to read the information about the

people of Bosnia and Herzegovina that is directly discussed in this paper, and can be seen in books on different topics [6,7,8,9]. In the photo gallery you can see some of the houses in the Brnjic village (Figures 27, 28).

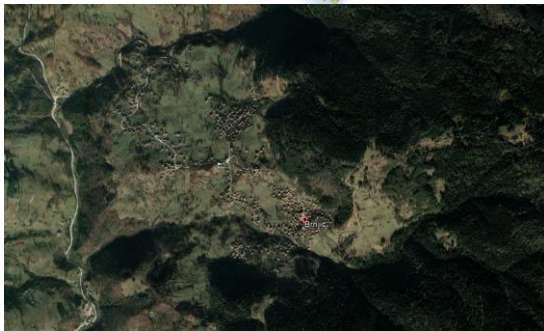


Figure 1. The Brnjic village near Kakanj. Location

Sources:  
<https://slidetodoc.com/regionalna-podjela-bosne-i-hercegovine-geografske-regije-bosne/>, Accessed 8/12/2022, (left)  
 Google Earth: Accessed 8/12/2022 (right)



Figure 2. The Brnjic village near Kakanj. Left: view from Starposle village. Right: houses with orchards and gardens on the slope of the natural amphitheater

Source: Author (June 28.2016.)

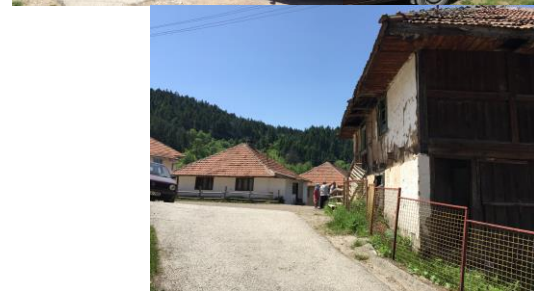


Figure 3. In the center of the Brnjic village there is a village square framed by houses. This public open space has more functions, typical of squares in general

Source: Author (June 28.2016.)

In this paper, two houses will be presented in detail (the Sljivo family house and the Colak family house), and in the subtitle 'Gallery of chardaklia houses in the Brnjic village near Kakanj', photos of characteristic houses and details of their construction and materialization will be given.

## II. THE SLJIVO FAMILY HOUSE IN THE BRNJIC VILLAGE NEAR KAKANJ

The Sljivo family house in the Brnjic village near Kakanj was built around 1905, and to this day it has undergone a series of reconstructions and adaptations (Figures 4, 5, 6). Originally, the house had a 'house' space ('kuca') with an open fireplace, a high roof covered with shingles, a series of smaller single windows [1,5,10,11]. In the Brnjic village near Kakanj, there are many such houses, which are transitional solutions from the classic Bosnian chardaklia house to a modern house<sup>1</sup>.

### 1.1. Spatial-shape characteristics of the house

The Sljivo family house in the Brnjic village near Kakanj, according to the disposition of its horizontal plans, belongs to the type of two-story Bosnian chardaklia house [1]. Vertically, it is developed through the basement ('warehouse'/'magaza'), ground floor and first floor (Figure 7). In its original design (1905), the house had the characteristics of a classic Bosnian

<sup>1</sup> The author visited the Brnjic village on June 28, 2016. Colak (Hamid) Camil (1931) and Kovac Izet (1956) provided him with information about the village, people and houses, as well as assistance in the architectural recording of buildings.

chardaklia house, some of which, despite reconstructions and adaptations, have been preserved. The house is located on a slope, with southwest insolation. The basement (whose walls are made of stone, 80 cm thick) was developed under one tract of the contour of the ground floor, while on the other tract, at the level of the ground floor, an embankment was arranged on which lay the 'house'/'kuca' with an open hearth (today's living room), (Figures 7,9). Rooms are arranged in the second section of the ground floor.



Figure 4. The Sljivo family house in the Brnjic village near Kakanj. Location (Geographic coordinates: 44°13'52.29"N, 18°07'19.67"E, Elevation: 807 m)



Figure 5. The Sljivo family house in the Brnjic village near Kakanj. Left: view of the house from the west. Right: view of the house from the southwest direction

Source: Author (June 28.2016.)



Figure 6. The Sljivo family house in the Brnjic village near Kakanj. Left: view of the house from the southeast. Right: view of the house from the northeast  
Source: Author (June 28.2016.)

In one of the reconstructions, the 'house'/'kuca' was turned into a living room (local name - 'kitchen'/'kuhinja'), whereby the smokestack area above the open hearth was closed, the hearth was replaced by wood-burning stoves, and on the first floor, above the former 'house'/'kuca', new verandas were arranged (Figure 7).

In one of the reconstructions, the house is divided 'asymmetrically': one residential unit is the southern half of the

house (from the basement to the attic), while two independent residential units are organized in the northern half, one on the ground floor, the other on the first floor (Figure 7). This solution testifies to the wide flexibility of using the Bosnian chardaklia house, as a home for several generations of one family [1,2,9,11].

Thus, the staircase in the residential unit in the southern half of the house is accessed from the living room (kitchen, that is, the former 'house'/'kuca'), while the residential unit on the first floor, in the northern half of the house, is accessed from the outside (Figures 7,8). On the ground floor level, each half of the house, in addition to the living room ('kitchen'/'kuhinja') room, has one room above the basement.

On the first floor of the house, there are two 'chardaks', one each on the northern and southern half, which are accessed from the ground floor level by a single-legged wooden staircase ('basamaci'). From the 'divanhana' there is access to shorter corridors, and from them to the chardaks, two in each half of the house (Figure 7). Two single-leg wooden staircases, one on the south and the other on the north side of the house, connect the ground floor and first floor levels.

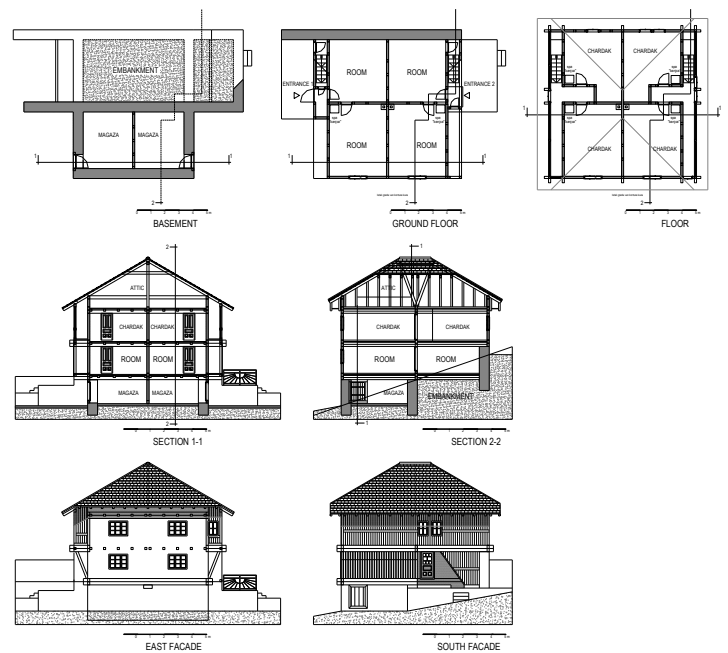


Figure 7. The Sljivo family house in the Brnjic village near Kakanj. Disposition

Source: Author (Drawings, 2016.)



Figure 8. The Sljivo family house in the Brnjic village near Kakanj. Left: the staircase in the residential unit in the north-facing half of the house. Right: the staircase in the residential unit in the south-facing half of the house

Source: Author (June 28.2016.)



Figure 9. The Sljivo family house in the Brnjic village near Kakanj. Left: the space under the stairs to the first floor arranged as a pantry. Right: arrangement of the living room (on the site of the former 'house'/'kuca') of the residential unit arranged on the ground floor of the northern half of the house  
Source: Author (June 28.2016.)

1.2. Construction and materialization

The foundations of the house, which extend into the walls of the basement, are made of semi-finished stone blocks 70 cm thick. the stone walls of the basement (the 'storeroom'/'magaza') are roughly plastered and painted white milk lime (Figure 10). The walls of the floor are made of wooden skeleton ('bondruk') with adobe filling. The inter-floor structures, the basement ground floor, ground floor-floor and floor-attic, are made of wooden beams on which thick (about 7 cm) pressed wooden floors are placed. In some rooms, the ceiling was decorated with a second layer, the ceiling ('shishe'), made of more or less finely processed and decorated boards. The roof is made of wood, like a 'single slanting chair' with additional rafters.



Figure 10. The Sljivo family house in the Brnjic village near Kakanj. Structure of the house: stone wall of the basement, wooden skeleton with adobe filling on the ground floor and first floor  
Source: Author (June 28.2016.)

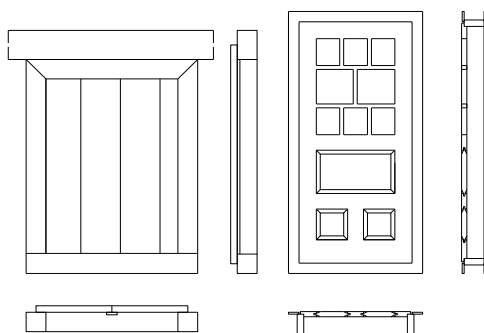


Figure 11. The Sljivo family house in the Brnjic village near Kakanj. Archaic and newer door designs  
Source: Author (Drawings, 2016.)

1.3. Doors and windows

Most of the original opening elements, doors and windows, have been replaced, and the new opening elements

follow the design of the time of their creation (1960s), (Figures 11,12,13).



Figure 12. The Sljivo family house in the Brnjic village near Kakanj. Archaic door design at warehouse entrances  
Source: Author (June 28.2016.)



Figure 13. The Sljivo family house in the Brnjic village near Kakanj. Left: The original door to the pantry under the staircase. Right: newer door design at the entrance to the house  
Source: Author (June 28.2016.)

Except for a few windows on the couches, all other windows follow the design of the 1960s. They are made as double, three-wing, with single glazing (Figure 14). Double sashes give windows greater thermal and acoustic insulation power<sup>[12]</sup>.

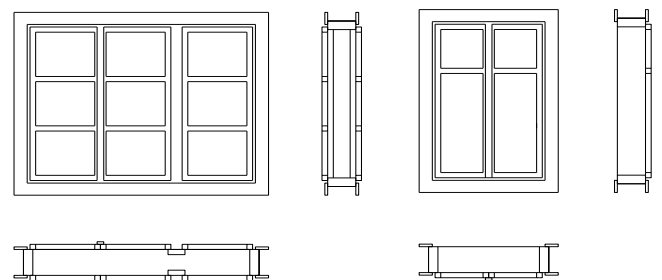


Figure 14. The Sljivo family house in the Brnjic village near Kakanj. Left: Different window design. Right: newer window design ('double - three-winged windows')  
Source: Author (June 28.2016.)

### III. THE COLAK FAMILY HOUSE IN THE BRNJIC VILLAGE NEAR KAKANJ

The Colak family house in the Brnjic village near Kakanj is one of the many relatively well-preserved Bosnian chardaklia houses in this village. This house was built in the middle of the 20th century on the site of an earlier, 'old barn'. Given that it is one of the houses framing the central village square, it occupies the site of one of the earliest and most important houses ('miljach') in the Brnjic village (Figures 15, 16).



Figure 15. The Colak family house in the Brnjic village near Kakanj. Location (Geographic coordinates: 44°13'51.36"N, 18°07'19.76"E, Elevation: 805 m)



Figure 16. The Colak family house in the Brnjic village near Kakanj. Left: view from the access road (southwest). Right: view from the northeast  
Source: Author (June 28.2016.)

#### Spatial-shape characteristics of the house

The Colak family house in the Brnjic village was initially built as a semi-detached house for two separate, fraternal families. According to the disposition of its horizontal plan, this house belongs to the type of two-story Bosnian chardaklia house [1], which is vertically developed through the basement, ground floor and first floor (Figure 17).

The basement of the house is developed under part of the contour of the ground floor and is oriented towards the village street. The only openings to the basement are the front door (Figure 17). On the ground floor of each of the two halves of the house, there are two rooms, a living room (which preserves the memory of the previous 'house'/'kuca') and a room above the basement. A single-legged wooden staircase ('basamaci') connects the ground floor and the first floor (Figures 17, 18, 19). On the first floor there is a divanhana with a staircase and two chardaks in each half (residential

unit) of the house. Floor solutions are not completely symmetrical. The spatial concept of the Bosnian chardaklia house also shows its functional flexibility on the example of this house. Namely, over time one residential unit (the one in the southeast part of the house) was divided into two independent residential units, one on the ground floor and the other on the first floor [1]. The new housing units have separate entrances (Figure 17).

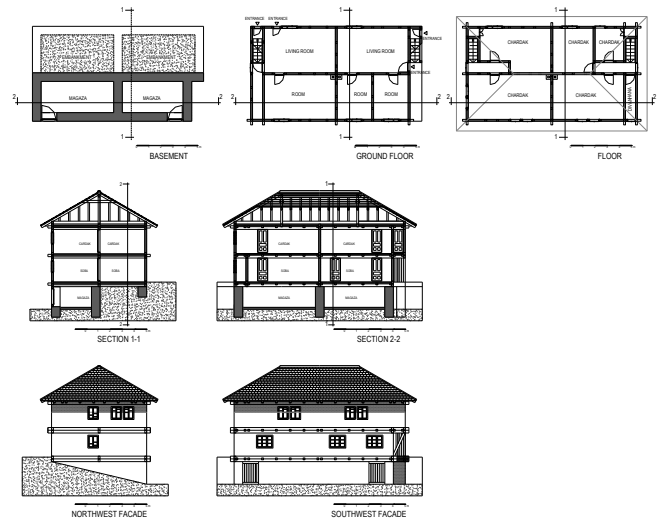


Figure 17. The Colak family house in the Brnjic village near Kakanj. Disposition

Source: Author (Drawings, 2016.)



Figure 18. The Colak family house in the Brnjic village near Kakanj. The space under the staircase for the first floor as a storage room for wood  
Source: Author (June 28.2016.)



Figure 19. The Colak family house in the Brnjic village near Kakanj. Wooden one-legged staircase ('basamaci')  
Source: Author (June 28.2016.)

#### Construction and materialization

The walls of the basement are made of rough stone, 70-80 cm thick. The stone for the construction of this house, as well as for the construction of all the houses in the Brnjic village,

was quarried in the local village quarry called 'Krcevina' (Figure 20).

The walls of the ground floor and first floor are made of a wooden skeleton ('bondruk') with wattle and rammed earth filling (Figure 20). The clay was mined at the locality 'Urva'. According to the locals, the branches of the coniferous fir tree were the best for making wickerwork. All inter-floor structures, basement-ground floor, ground floor-floor and floor-attic, are made of wooden beams stiffened by thick (about 7 cm) wooden planks, as a floor structure (Figure 21).



Figure 20. The Colak family house in the Brnjic village near Kakanj. Construction and materialization, walls

Source: Author (June 28.2016.)



Figure 21. The Colak family house in the Brnjic village near Kakanj. Left and center: floor-attic construction. Right: ground-floor (hewn beams and wooden floors)

Source: Author (June 28.2016.)

The roof of the house is hipped, with a relatively small slope, covered with tiles. In the engineering sense, the roof is made as a 'single upright chair with turnbuckles' (Figure 7).

#### Doors and windows

As with the rest of the houses in the Brnjic, village in the Colak family house we find preserved examples of archaic door design, while most of the doors follow the design of the 1960s (Figures 22, 23).

All the windows on the Colak family house follow the design of the 1960s. Some are double and some are single. Some are two-winged and some three-winged. As a rule, double-hung windows are single-hung, and triple-hung windows are double-hung ('double windows'), (Figures 24, 25, 26).

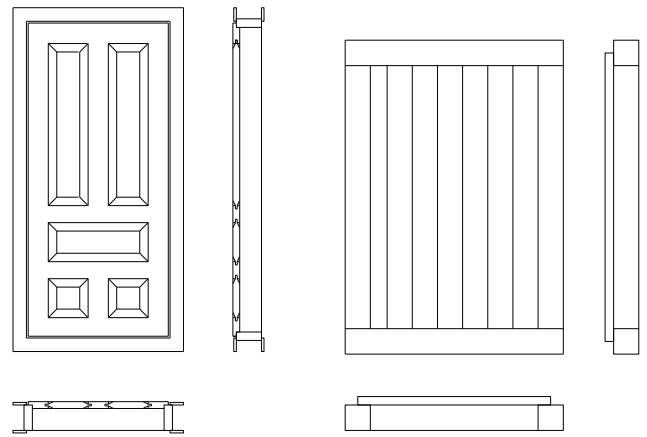


Figure 22. Different door designs

Source: Author (Drawings, 2016.)



Figure 23. The Colak family house in the Brnjic village near Kakanj. Different door designs

Source: Author (June 28.2016.)

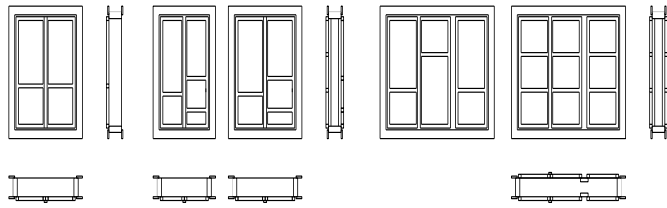


Figure 24. Different window designs

Source: Author (Drawings, 2016.)

#### IV. GALLERY OF THE BOSNIAN CHARDAKLIA HOUSES IN THE BRNJIC VILLAGE NEAR KAKANJ

This paper presents two houses in the Brnjic village near Kakanj. Today in this village there are more than twenty similar houses built according to the same principle as the two presented houses, and with a similar level of preservation of their physical structure. There is a large number of houses that are in a state of dilapidation at different levels. Below we provide photos of some houses and details of their construction and materialization (Figures 27, 28).

##### Physiognomy of houses



Figure 25. The Colak family house in the Brnjic village near Kakanj. Gallery of window designs

Source: Author (June 28.2016.)



Figure 26. The Colak family house in the Brnjic village near Kakanj. Through the windows on the ground floor and first floor (in the southwest part of the house), you can see wide views of the Ribnica river valley

Source: Author (June 28.2016.)



Figure 27. Gallery of houses in the Brnjic village near Kakanj  
Source: Author (June 28.2016.)

*Construction and materialization of houses*

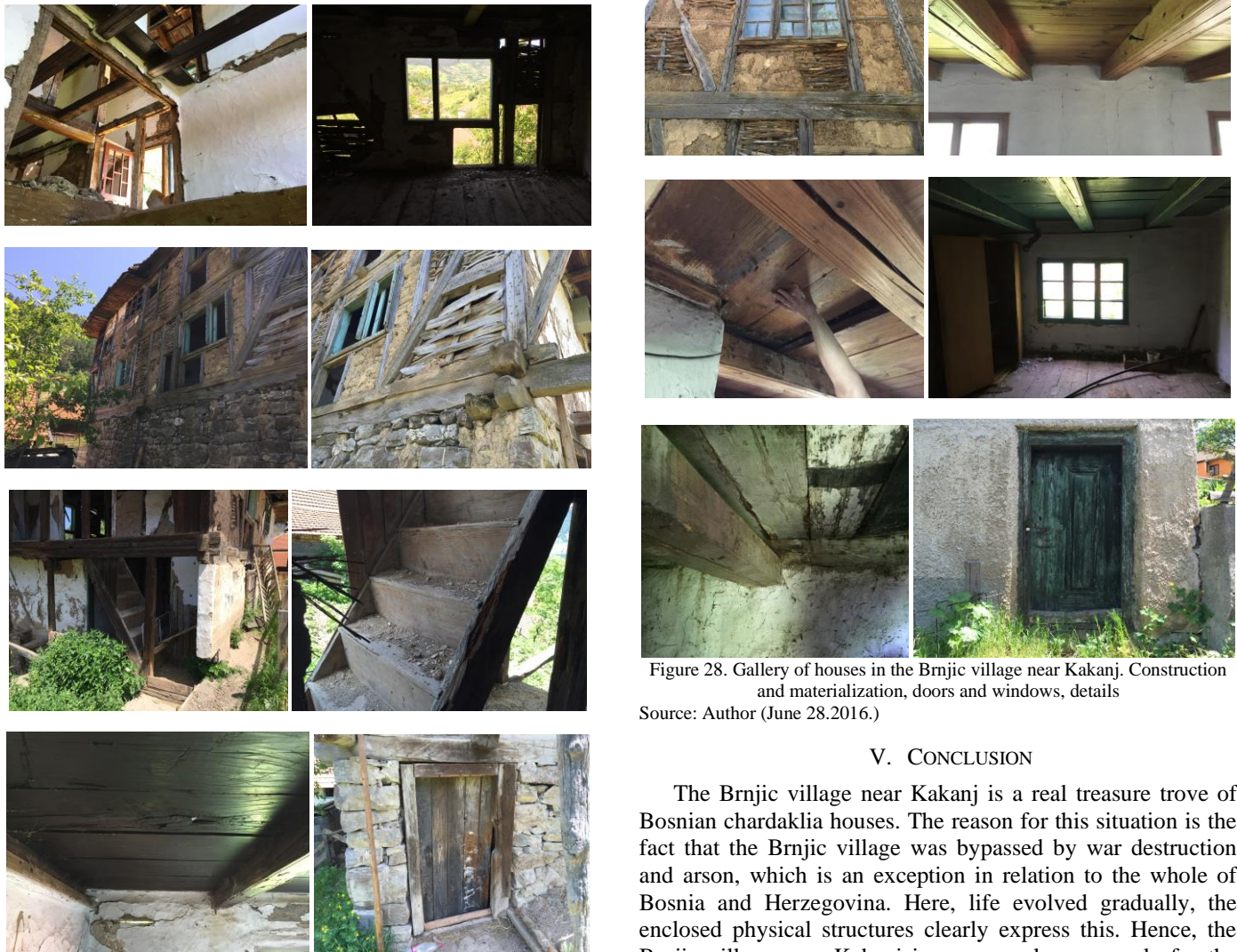


Figure 28. Gallery of houses in the Brnjic village near Kakanj. Construction and materialization, doors and windows, details  
Source: Author (June 28.2016.)

V. CONCLUSION

The Brnjic village near Kakanj is a real treasure trove of Bosnian chardaklia houses. The reason for this situation is the fact that the Brnjic village was bypassed by war destruction and arson, which is an exception in relation to the whole of Bosnia and Herzegovina. Here, life evolved gradually, the enclosed physical structures clearly express this. Hence, the Brnjic village near Kakanj is an exemplary example for the study and verification of the principles of the author's theory of Architecturally Defined Space (ADS)<sup>[9]</sup>.



Some well-preserved houses are used all the time, and some occasionally, since their owners ('following work') moved to Kakanj or Zenica and built their new houses or bought apartments there. The largest number of owners of Bosnian chardaklia houses in the Brnjic village built new houses in the same village, most often next to the terraced chardaklia houses. They did not demolish the old houses, but preserve them, respect them and truly love them as 'living beings'. The old houses embody their previous life and the life of their ancestors. The Brnjic village produced many people who (mainly in Sarajevo) graduated from various faculties and established their own businesses there. It is interesting that those people from the countryside (in Bosnia and Herzegovina in general) who have reached higher levels of education and business success, who have 'seen more of the world', are more aware of the value of living and growing up in the countryside, so they return to it, renew the old houses or build new ones, not to live in them permanently, but to enjoy them as already accomplished personalities and business people (Figure 29).



Figure 29. One of the restored houses in the Brnjic village. The enormous 'embodied energy' of the house is activated in a way that provides the current owner with ultimate comfort in the house built by his ancestors.  
Source: Author (June 28.2016.)

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