



MAPPING & DOCUMENTATION OF VERNACULAR ARCHITECTURE

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SPONSORS & PARTNERS

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VERNACULAR ARCHITECTURE

IVANIĆ-GRAD AREA WITHIN THE POSAVINA REGION

VERNACULAR ARCHITECTURE IN POSAVINA REGION

Vernacular architecture focuses on the study of buildings design based on local needs, resources and traditions. In the Posavina region, environmental opportunities, such as oak trees and fertile lands, but also the threat of flooding led to the development of craftsmanship resulting in the construction of wooden one- and two-storey houses. Scattered across the region, these houses are significant examples of Croatia's rural heritage and reflect human adaptability to local conditions. However, the integral role these buildings play in the area's cultural identity is under threat due to a lack of formal recognition. The conditions for the conservation of these buildings have been further aggravated by recent factors such as depopulation, modernisation, and the 2020 earthquake.

The importance of this project lies in the documentation, assessment and mapping of buildings in seven villages of the Ivanić-Grad area. The project aims to raise awareness around the importance of vernacular architecture for rural heritage.



The Posavina region surrounding Ivanić-Grad in Croatia, southeast of its capital Zagreb, is characterised by a floodplain landscape, oak forests and fertile lowlands. The Sava river, a major tributary of the Danube, crosses this region decisively shaping its environmental conditions.



MAPPING & DOCUMENTATION

PROCESS AND METHODOLOGY

HOW WE WORKED

Villages

We documented wooden houses in 7 villages, including Topolje, Zaklepica, Prerovec, Prečno, Zelina Breška, Greda Breška and Šemovec Breški.

Teams

Each day we worked in two groups to increase the amount of houses recorded. One person would lead photo operations and one would lead GIS recording each day.

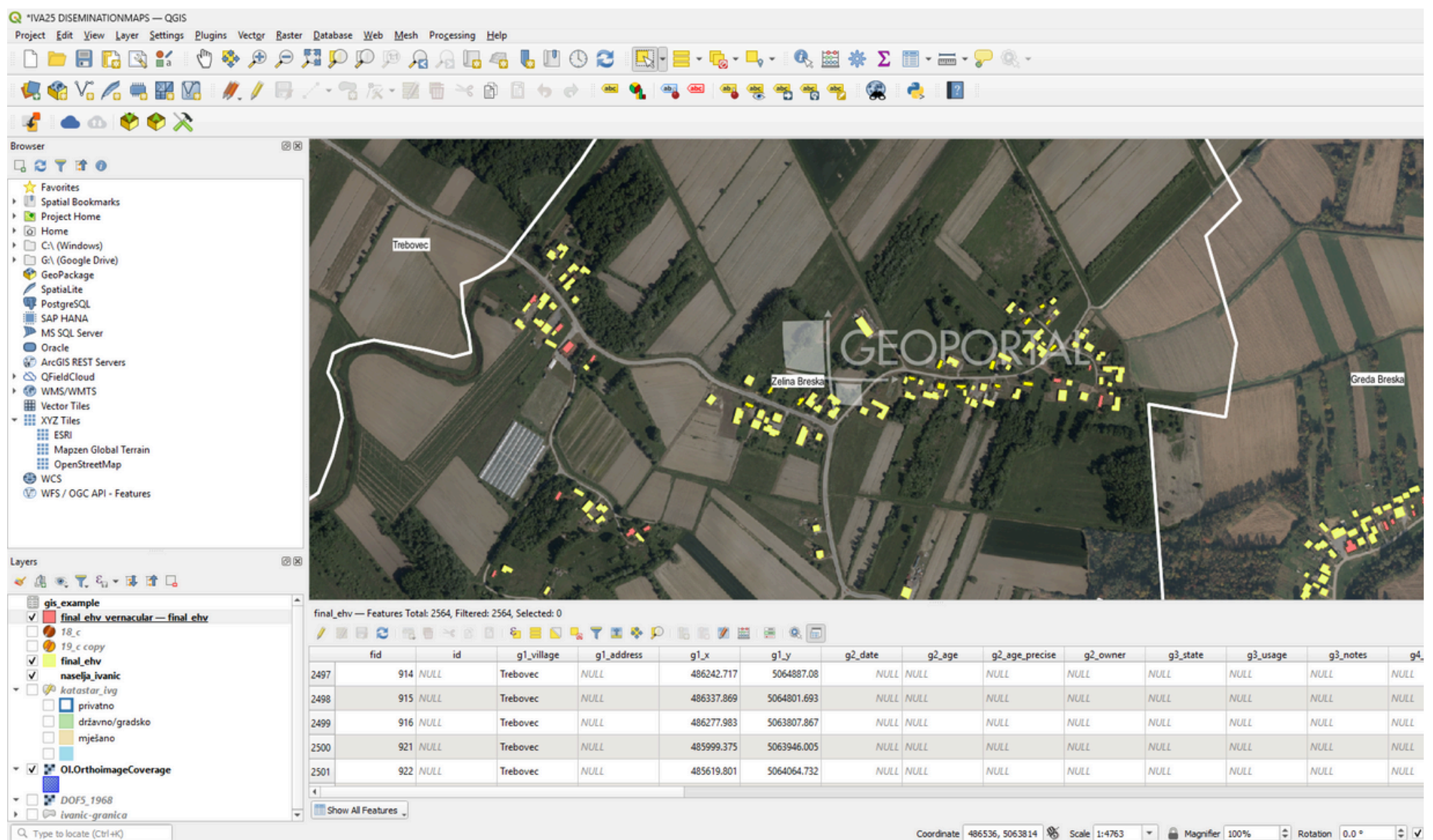
Tools

The key tool used was Geographic Information System (GIS) software, a program that helps people create, analyse and visualise maps, and spatial data. We used GIS software to map and record vernacular houses in the seven villages, helping us to create a database that shows where these houses are located and what makes them unique.

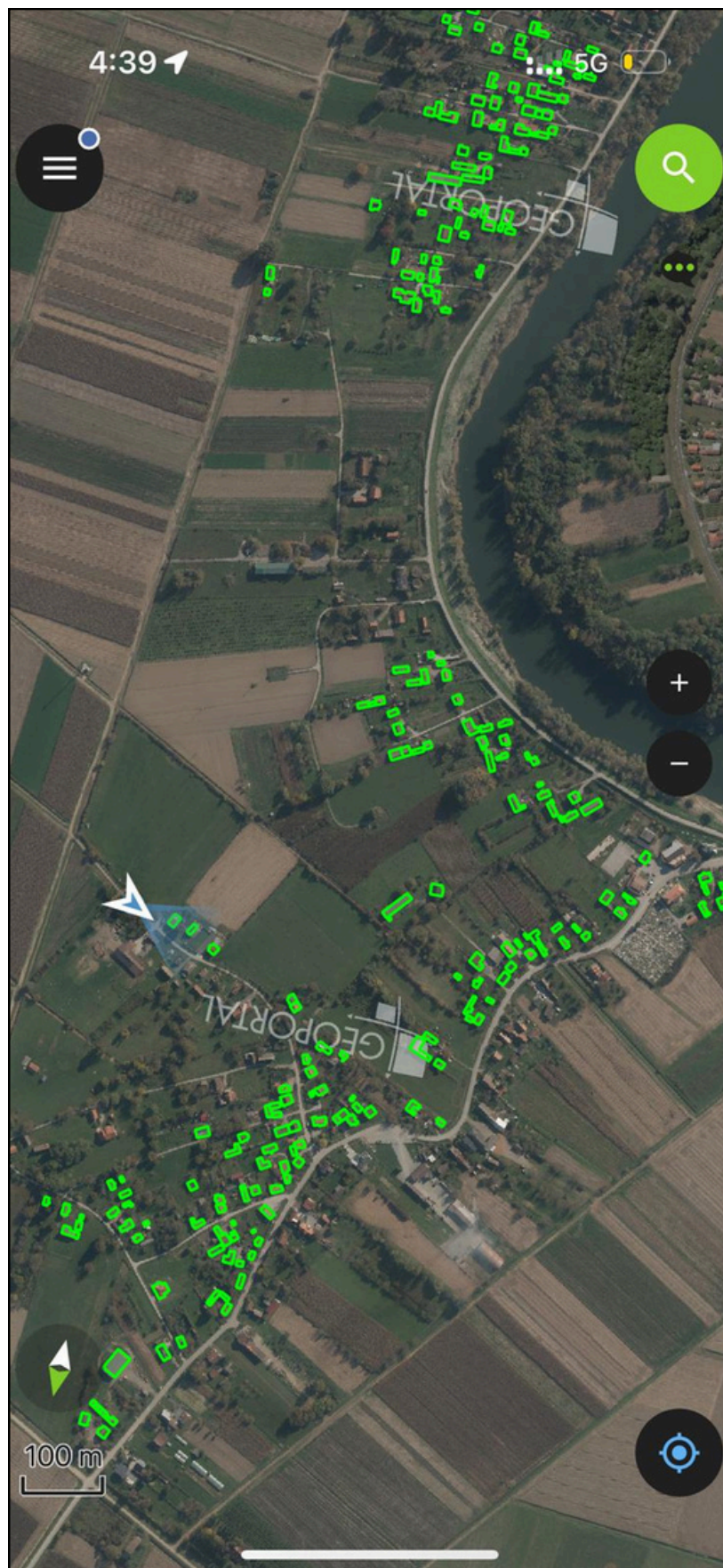
Where possible, each building was systematically photographed from different angles, including street views and agricultural elements, to create a robust and accessible visual database. A digital 3D model was created at one property using drone imagery and photogrammetry pipeline software.



GIS (GEOGRAPHIC INFORMATION SYSTEM)



Visual and data collection from the QGIS program.



Qfield app work environment

The screenshot shows the Qfield app's form view for a specific house. The form is titled "3/4: pr23" and contains several sections for data entry:

- 3_State and usage of the house**
 - g3_state**: A dropdown menu with the value "mantained".
 - g3_usage**: A dropdown menu with the value "inhabited".
 - g3_notes**: A text input field with the value "relocated from Preseka 1960s".
- 4_Flooring**
 - g4_floors**: A dropdown menu with the value "one floor".
 - g4_notes**: A text input field with the value "basement level present".
- 5_Construction**
 - g5_orientation**: A dropdown menu with the value "parallel to the street_front facing the ...".
 - g5_base_material**: A dropdown menu with the value "concrete".
 - g5_facade_material**: A text input field with the value "wood".

Each dropdown menu has a search icon (magnifying glass) to the right, and each text input field has a search icon (magnifying glass) to the right. The form is displayed on a green background with a white header bar.

Data in the GIS app was collected according to the following criteria:

1. Location

Identifying the location of the village, the address of the wooden house, and the coordinates based on GIS maps, using a coding system of letters and ordinal numbers for the villages.

2. General (house datation & owners)

Mapping the date of the documentation and the date of the house - categorised as 18th century, 19th century, 20th century, or unknown. When available, we included precise dating based on inscriptions or information provided by the owners. We also recorded the current owner's names, using data obtained through an online geoportal.

3. State of the House

We recorded the state of the house, categorised as maintained, recent interventions, extensions, abandoned, ruined, renovated or used for agricultural purposes. We also noted the current use of the house, categorised as inhabited, uninhabited or occasionally inhabited.

4. Flooring

We documented the number of floors of the houses – characterising them as either of one floor or two floors.



5. Construction

We documented details of the construction of the houses, recording features such as:

- house orientation (vertical to the street or parallel to the street)



- foundation material (stone, brick or concrete)



- facade material (wood or brick)



- joint type (german or croatian)



croatian joint



german joint

- type of roof (half hipped roof, gable roof, other)



- roof material (roofing tile, wooden shingle roof)



6. Extensions of Alterations

Over time, some houses have been significantly altered. We noted whether they presented extensions or modifications, and if so, we recorded their location, the period when they were built, and the materials used.



7. Architectural Elements

The houses have a similar design, but many of them have distinctive features, such as:

- little roof over the ground floor level



- veranda



Forgajnk
veranda along whole side



Polutan
veranda with windows



Polutan
veranda without windows

- decorations



- inscriptions



8. Agricultural Objects

Since the plots are located in rural areas, many include agricultural buildings such as stables, barns, pigsties, wood sheds, corn stores, summer kitchens, mills, smithies, apiaries and others.

9. Traditional Elements in the Yard

Other structures often found near houses are smaller in scale but still played an important role in everyday life. We documented features such as wells, traditional fences and water troughs.

10. Other

At this point we included additional information that was not covered earlier. This section records whether the owner was present during the documentation process, and if so, what we learned from them - for example details about the history of the house, past restoration work or later modifications. We also noted whether there were any accessibility limitations.

PHOTO DOCUMENTATION

The Purpose of Photo Documentation

Taking photos of each house from different angles and of various elements was crucial to accurately capture the unique features, construction techniques and condition of each house, ensuring comprehensive documentation. This visual record supports the data collected. Each house was photo recorded according to five categories: façades, street view, house details, agricultural elements and yard elements.

a. façades (as many as approachable)



b. whole yard (from street)



c. house details (corner, ornaments, inscriptions)



d. agricultural elements



e. traditional yard elements





OUTCOMES

THE CURRENT STATE OF VERNACULAR
ARCHITECTURE IN POSAVINA

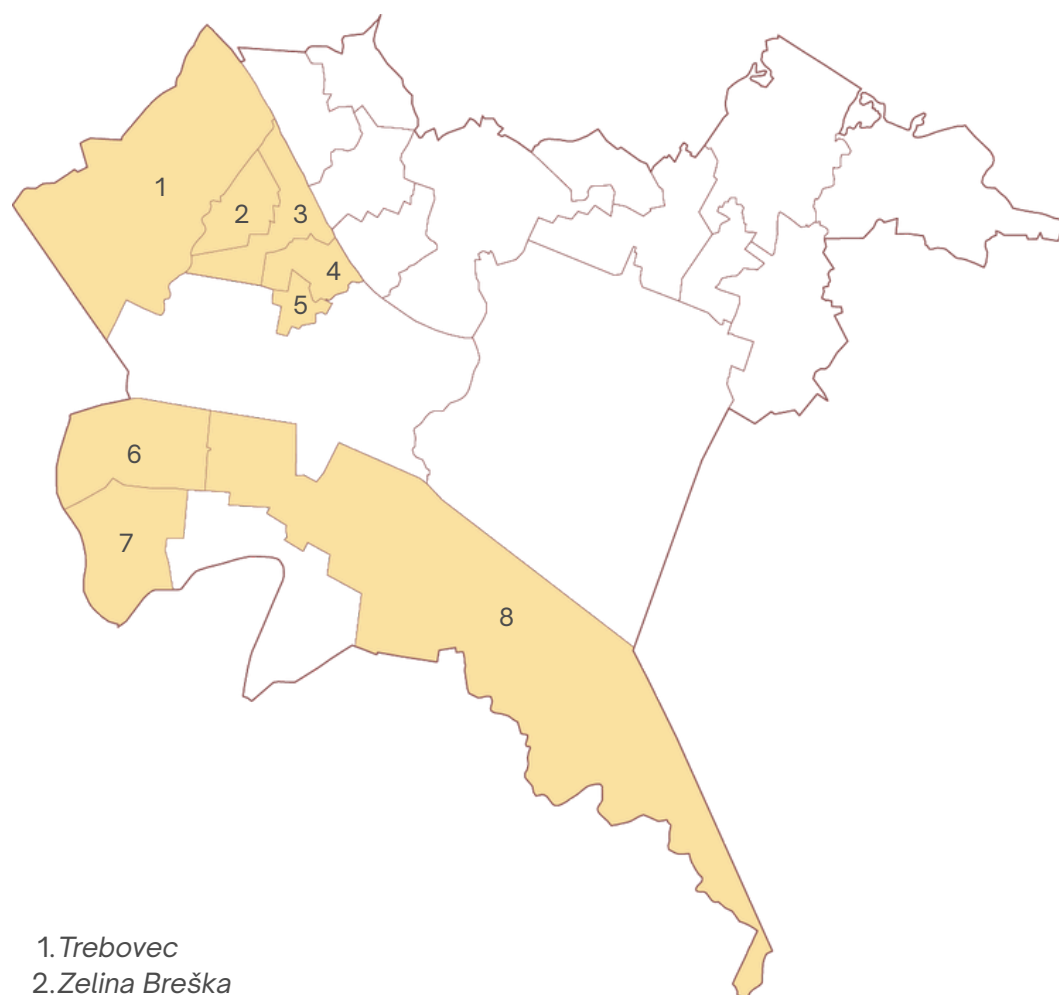


DATA

144

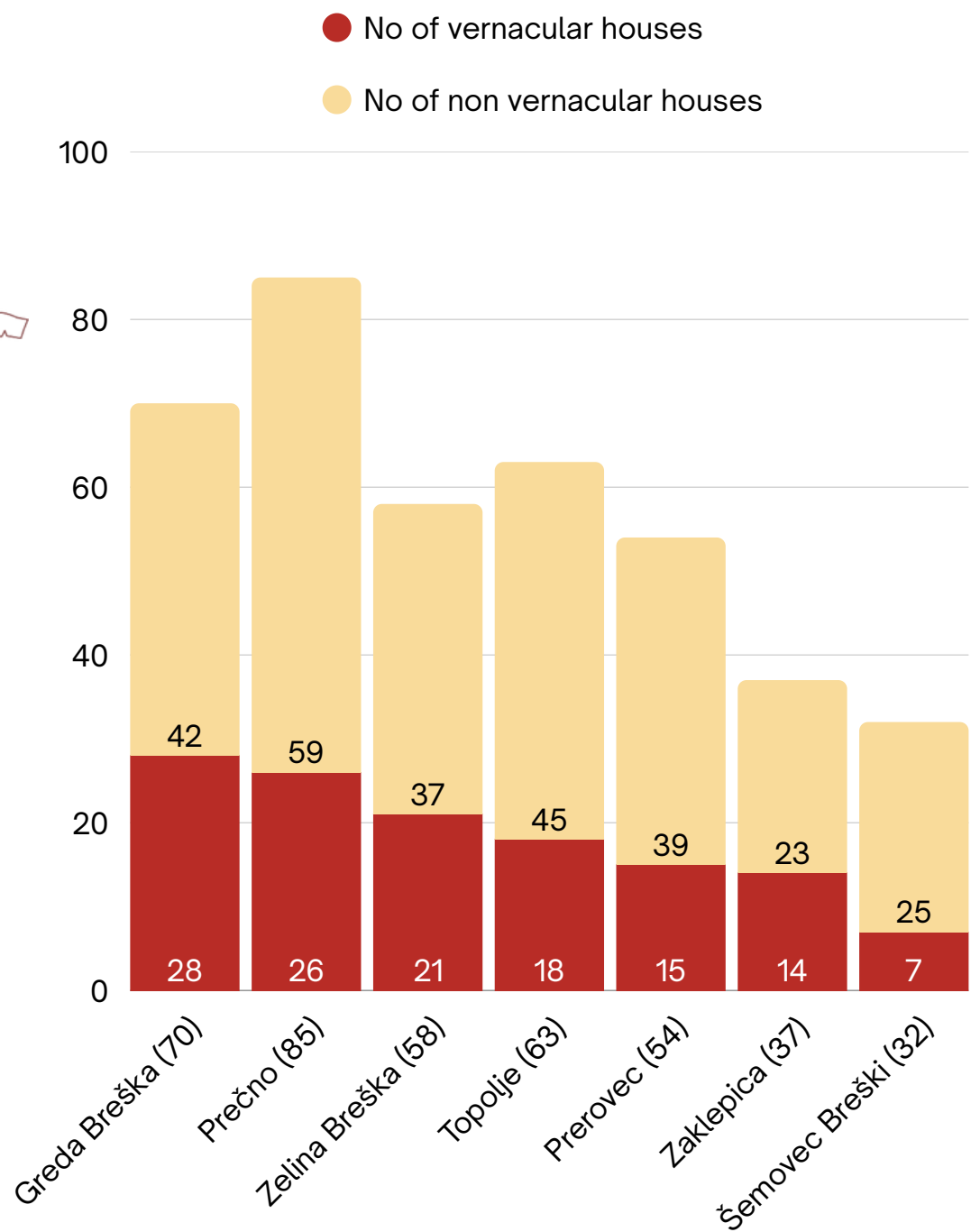
Vernacular houses recorded

Villages recorded



- 1. Trebovec
- 2. Zelina Breška
- 3. Greda Breška
- 4. Šemovec Breški
- 5. Zaklepica
- 6. Prečno
- 7. Prerovec
- 8. Topolje

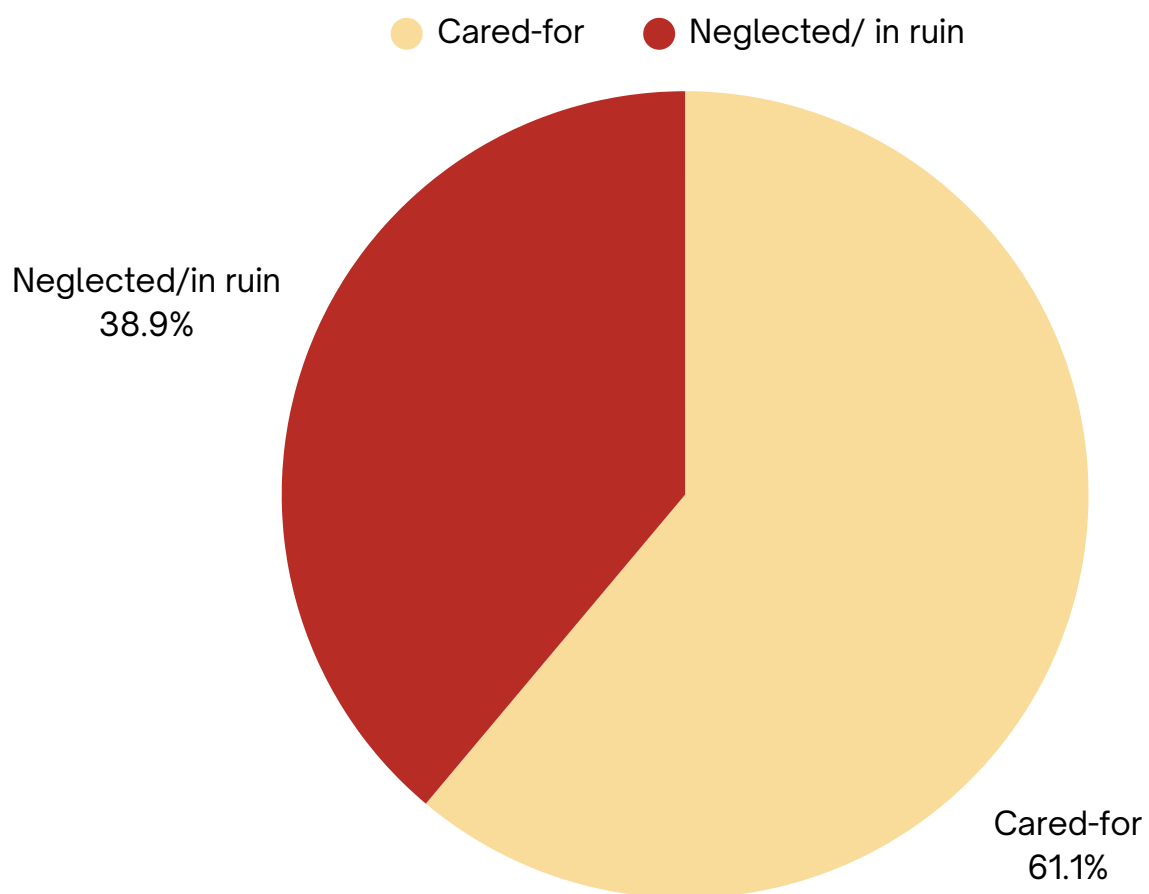
Ratio of vernacular houses



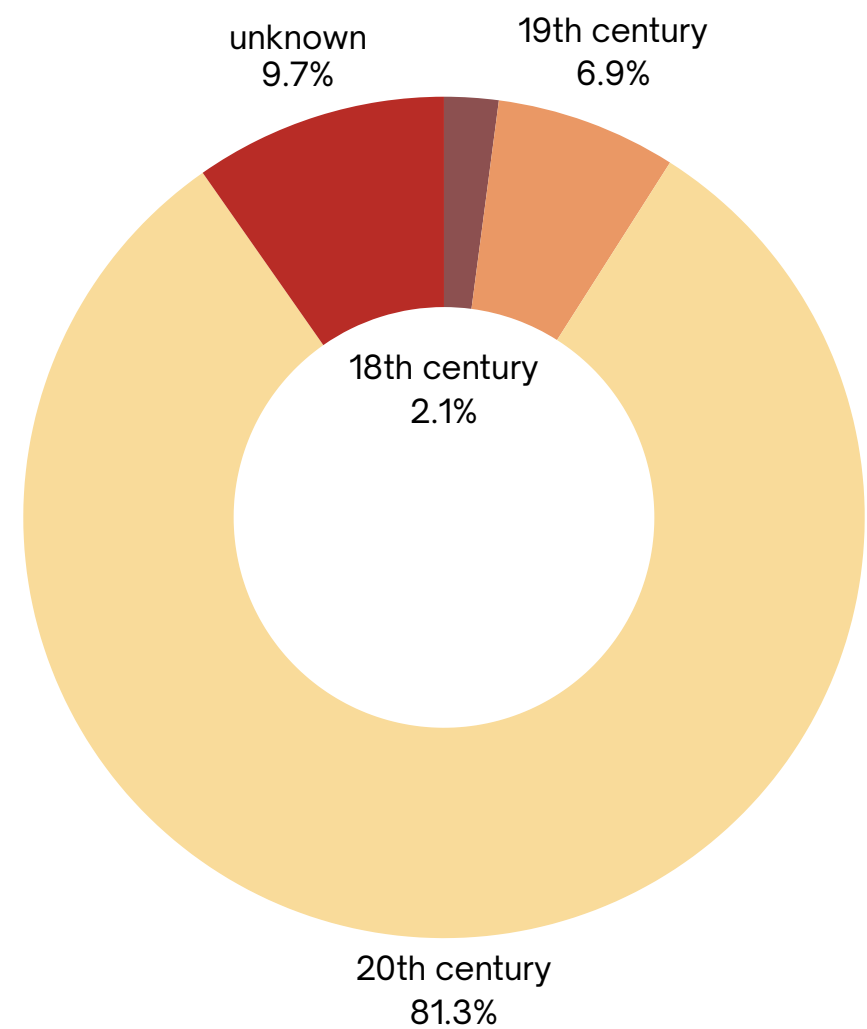
61%

of Vernacular houses recorded are maintained

State of the vernacular houses



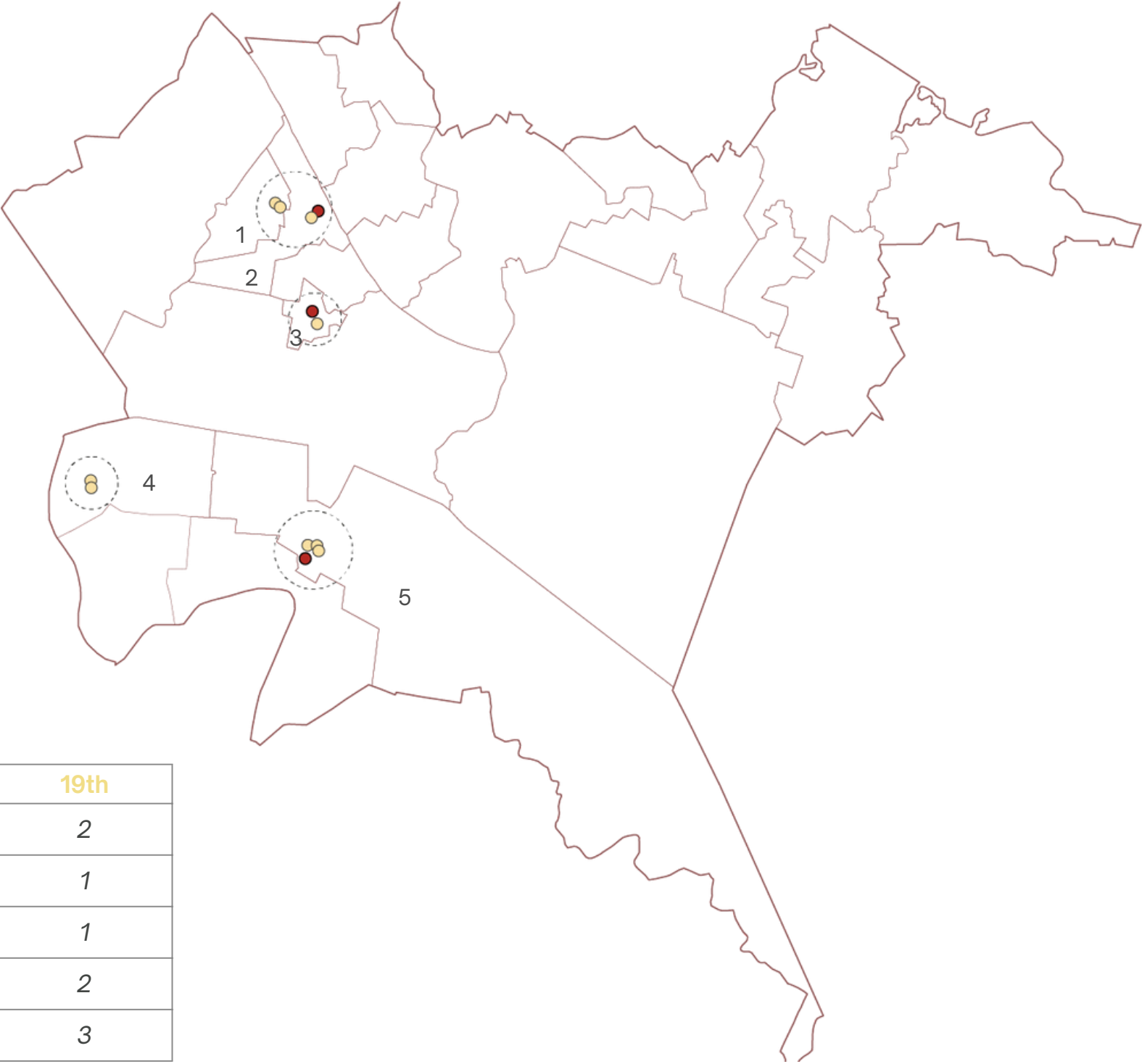
Construction periods



Recorded houses:

3 from 18th Century

9 from 19th Century

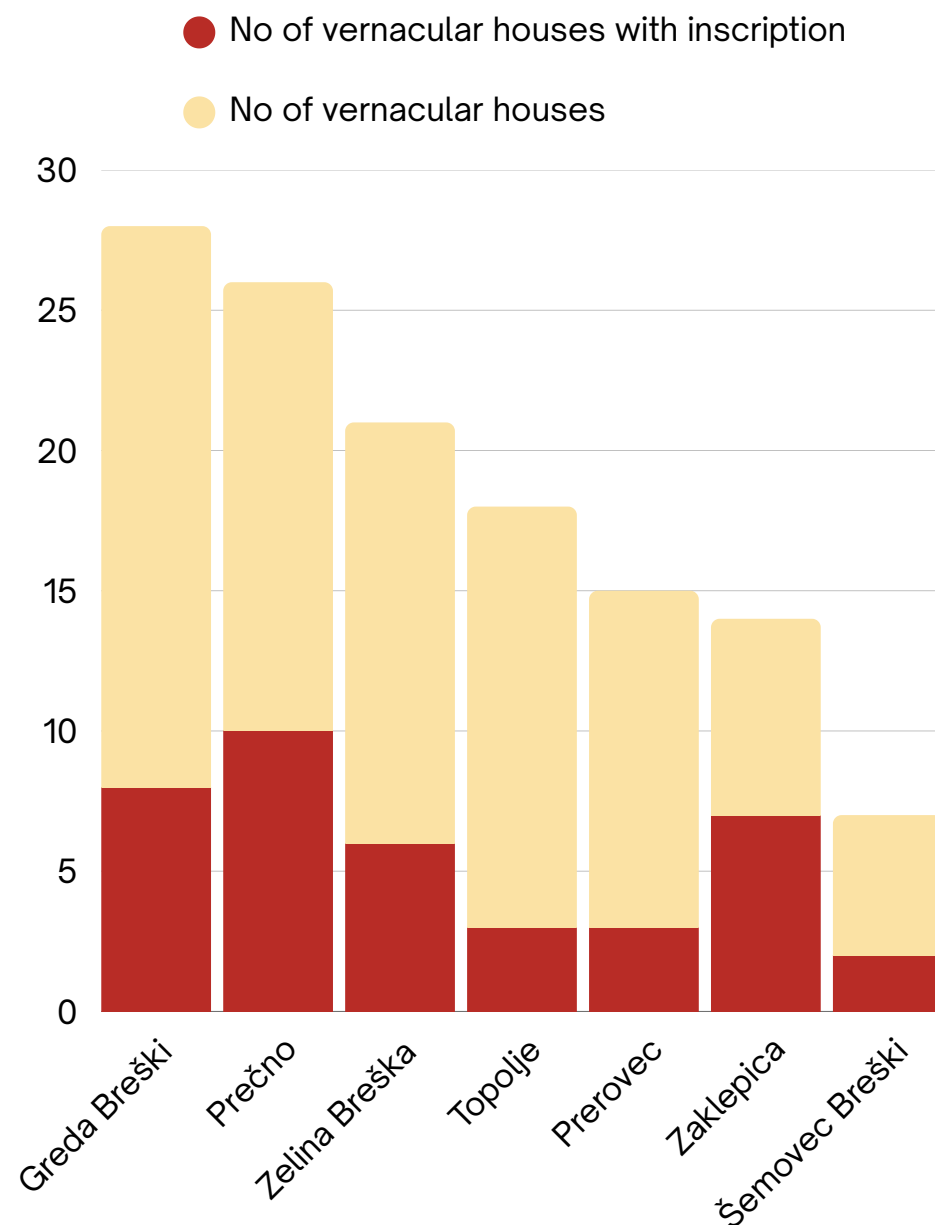


Village	18th	19th
1. Zelina Breška		2
2. Greda Breška	1	1
3.Zaklepica	1	1
4.Prečno		2
5.Topolje	1	3

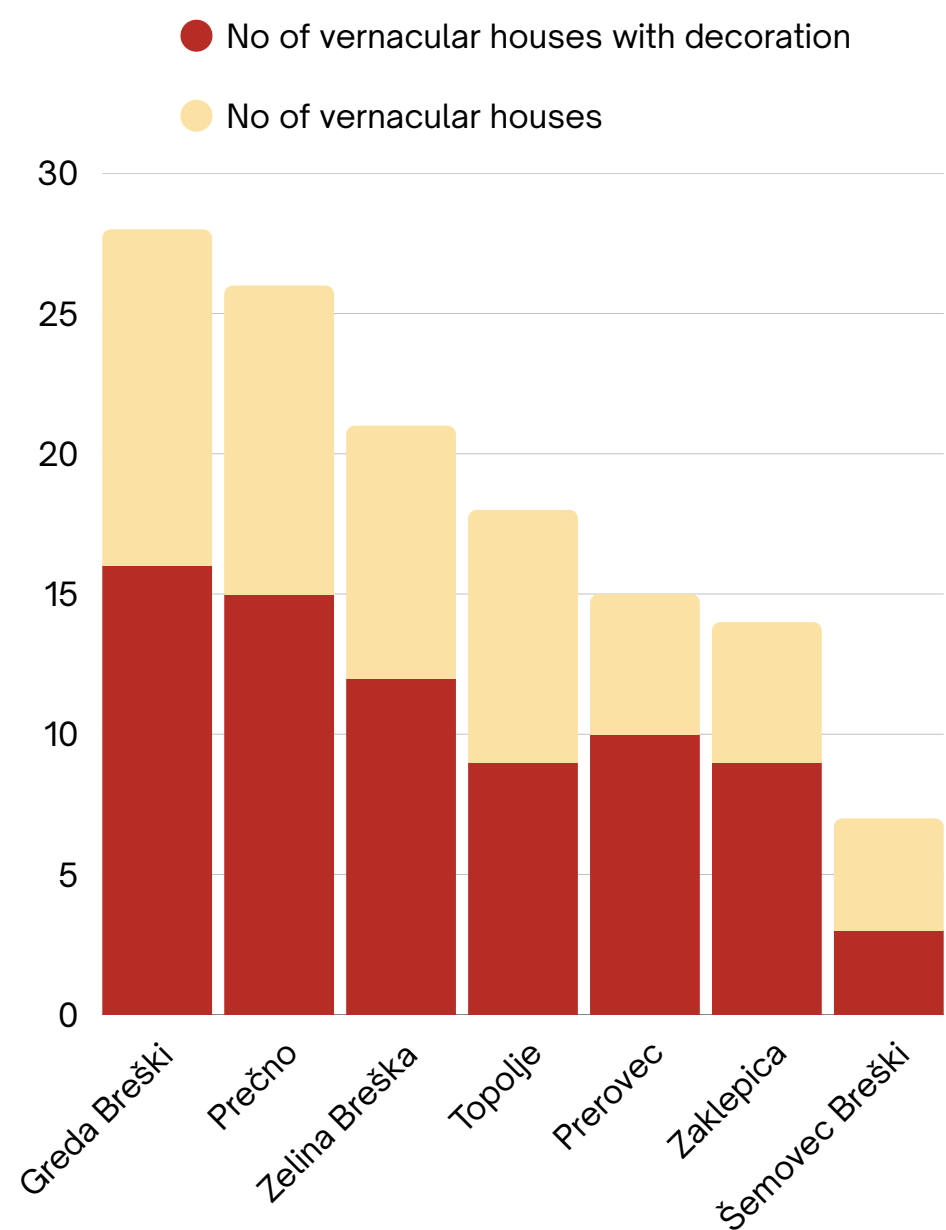
PREČNO

village has the most Vernacular houses recorded with inscription

Vernacular houses with inscription



Vernacular houses with decoration





FUTURE PERSPECTIVES

HOW THIS DATA CAN BE USED



URBAN PLANNING AND DEVELOPMENT

The GIS data is designed to be integrated with urban management strategies.

- The GIS data can be combined with spatial planning and development plans to provide a comprehensive overview of the potential and problems associated with managing the traditional houses. This integration helps ensure that heritage preservation is not treated in isolation from other urban development goals.
- As Ivanić-Grad experiences urban and cultural change, the data can be used to foster development in building architecture and to preserve the region's identity.

MONITORING, EVALUATION AND MAINTENANCE

The documentation file is a tool for the continuous management and protection of the vernacular houses.

- The GIS system is designed for monitoring and evaluating the existence and condition of the vernacular houses. It can track changes in ownership, building condition, and function over time.
- The database enables the local community, Friends of Heritage - Amici Heriditatis Association, and Zagreb County to quickly identify specific needs for property rights protection, remedial measures, and maintenance on a particular scale and timeline
- Continuous monitoring is crucial to maintain the "sense of place" of the historical Posavina region. If this monitoring function is not maintained, the values of the vernacular houses could be lost.



POLICY DEVELOPMENT AND DECISION MAKING

The future use of the collected data is to inform and support decision-making regarding urban conservation.

- The database serves as a direct basis for creating policies aimed at protecting traditional houses in the Ivanić-Grad area of the Posavina region.
- The data can help make informed decisions related to historical sites within Ivanić-Grad especially in the face of urban changes.
- The GIS is proven to be a decision support system by clearly describing the condition of the traditional houses. This capability allows it to bridge the gap between preservation interests and policy, helping officials to come up with a cohesive conservation plan.



COLLABORATION AMONG STAKEHOLDERS

The data collected can be a tool for connecting the various groups involved in vernacular houses preservation and overcoming existing weaknesses where efforts are not well-integrated.

- The data collected can serve as a bridge between conservation needs and management, connecting the government, cultural organizations, private companies, academics, and the community. The documentation data can help establish networks and foster cooperation among these stakeholders.
- The efforts of different stakeholders are not fully integrated. The output can create synergies between Friends of Heritage - Amici Heriditatis Association, The City of Ivanić-Grad, Museum of Ivanić-Grad, Tourist Board of the City of Ivanić-Grad, and Zagreb County in doing decision making for the future of the vernacular houses.



KNOWLEDGE TRANSFER AND AWARENESS

The data is intended for the purposes of conservation, promotion, and education. The goal is not just the technology itself, but the transfer of knowledge.

- The study offers a way to bridge knowledge between generations. It can help younger community members and the wider public recognize the vernacular houses, understand their values, and learn about preservation efforts.
- Knowledge transfer is the primary goal of preservation. The data creates a lasting record that maps historical and cultural values of vernacular houses in Ivanić-Grad for future generations.
- Raising awareness of vernacular heritage would likely encourage the local community to revive and foster craftsmanship, passing skills on to future generations.



ACADEMIC RESEARCH

The collected data and the methodology of the study are intended to be a starting point for more extensive academic work.

- The study lays the groundwork for further research in the area by integrating the knowledge from professionals in other disciplines (e.g. economists, agronomists).
- The findings and database are meant to help develop and enrich the theoretical framework for rural heritage and architecture of vernacular houses in Ivanić-Grad.
- The study may serve as a blueprint for future research in rural areas in the European or global contexts that bear similar characteristics



SPONSORS & PARTNERS

PROJECT FUNDING



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Croatian Academy
of Sciences and Arts



Zagreb County



Ministry of Culture

PARTNERS



European Heritage Volunteers



Prijatelji Baštine
Amici Hereditatis

This project was more than documentation - it was an exchange of knowledge, stories and experiences. By spending time in the villages, we discovered not only the value of vernacular architecture but also the richness of rural life and the warmth of the local community. Most of all, we are grateful for the friendships we built along the way.

Thank you to everyone who took part and contributed to this journey.



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