



# MAPPING & DOCUMENTATION OF VERNACULAR ARCHITECTURE

**IVANIĆ-GRAD, CROATIA**  
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# SPONSORS & PARTNERS

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ZAGREB COUNTY, CROATIA





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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.

In September 2025, Friends of Heritage began the implementation of a systematic documentation, mapping, and assessment of vernacular residential buildings in the Posavina area of Ivanić-Grad. The project covered 7 out of 9 Posavina villages, and its ultimate goal is to raise awareness of the importance of the vernacular 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

During the project, wooden houses were documented in 7 villages, including Topolje, Zaklepica, Prerovec, Prečno, Zelina Breška, Greda Breška and Šemovec Breški.

## Teams

The participants worked in two groups of four people and one coordinator. One person would lead photo operations and others would lead GIS and data recording each day.

## Tools

The key tool used was Geographic Information System (QGIS) software, a program that helps in creation, analysis and visualisation of maps and spatial data. GIS plugin QField was used to map and record vernacular houses in the villages, in order to create a database that shows the spatial distribution of all houses as well as distribution of the specific features.

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)

The screenshot displays the QGIS interface with a map of a rural area. The map shows fields, roads, and buildings. A white outline highlights a specific area. The 'final\_ehv' layer is highlighted in yellow. The 'Layers' panel on the left shows the following layers:

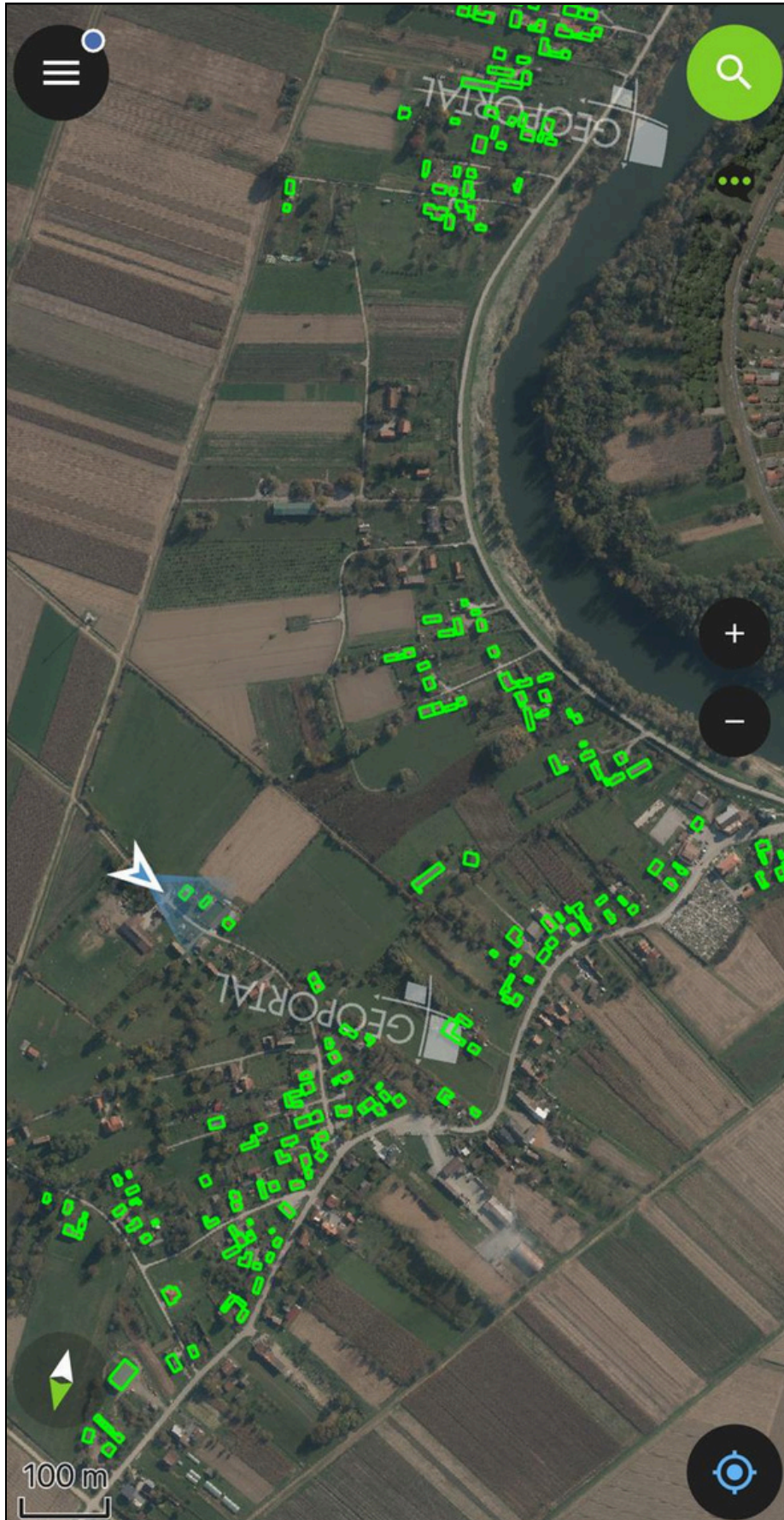
- gis\_example
  - final\_ehv vernacular — final\_ehv
  - 18\_c
  - 19\_c copy
  - final\_ehv
  - naselja\_ivanic
    - katastar\_ivg
      - privatno
      - državno/gradsko
      - mješano
  - Ol.OrthoimageCoverage
  - DOF5\_1968
  - ivanic-granica

The 'final\_ehv' layer is selected, and the data table below shows the following attributes:

fid	id	g1_village	g1_address	g1_x	g1_y	g2_date	g2_age	g2_age_precise	g2_owner	
2497	914	NULL	Trebovec	NULL	486242.717	5064887.08	NULL	NULL	NULL	NULL
2498	915	NULL	Trebovec	NULL	486337.869	5064801.693	NULL	NULL	NULL	NULL
2499	916	NULL	Trebovec	NULL	486277.983	5063807.867	NULL	NULL	NULL	NULL
2500	921	NULL	Trebovec	NULL	485999.375	5063946.005	NULL	NULL	NULL	NULL
2501	922	NULL	Trebovec	NULL	485619.801	5064064.732	NULL	NULL	NULL	NULL

The interface also shows the 'Browser' panel on the left, the 'Layers' panel, and the 'Coordinate' and 'Scale' information at the bottom right.

Visual and spatial attributes from the QGIS program.



3/4: pr23

habinovec mladeni

**3\_State and usage of the house**

g3\_state  
maintained

g3\_usage  
inhabited

g3\_notes  
relocated from Preseka 1960s

**4\_Flooring**

g4\_floors  
one floor

g4\_notes  
basement level present

**5\_Construction**

g5\_orientation  
parallel to the street\_front facing the ...

g5\_base\_material  
concrete

g5\_facade\_material

QField app work environment.

Data was documented 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

Documenting the date of the documentation and the date of the house - categorised as **18th century**, **19th century**, **20th century**, or **unknown**. When available, **precise dating** was included based on the inscriptions or informations provided by the owner.

## 3. State of the House

The state of the house was recorded and categorised as **maintained**, **edited with recent interventions or extensions**, **abandoned**, **ruined**, **renovated** or **used for agricultural purposes**. Current use of the house was also noted and categorised as **inhabited**, **uninhabited** or **occasionally inhabited**.

## 4. Flooring

The number of floors of the houses was documented and characterised as either of **one floor** or **two floors**.



## 5. Construction

The details of the house construction were documented and features were recorded 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



german joint



croatian joint

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



- roof material - roofing tile, wooden shingle roof



## 6. Extensions of Alterations

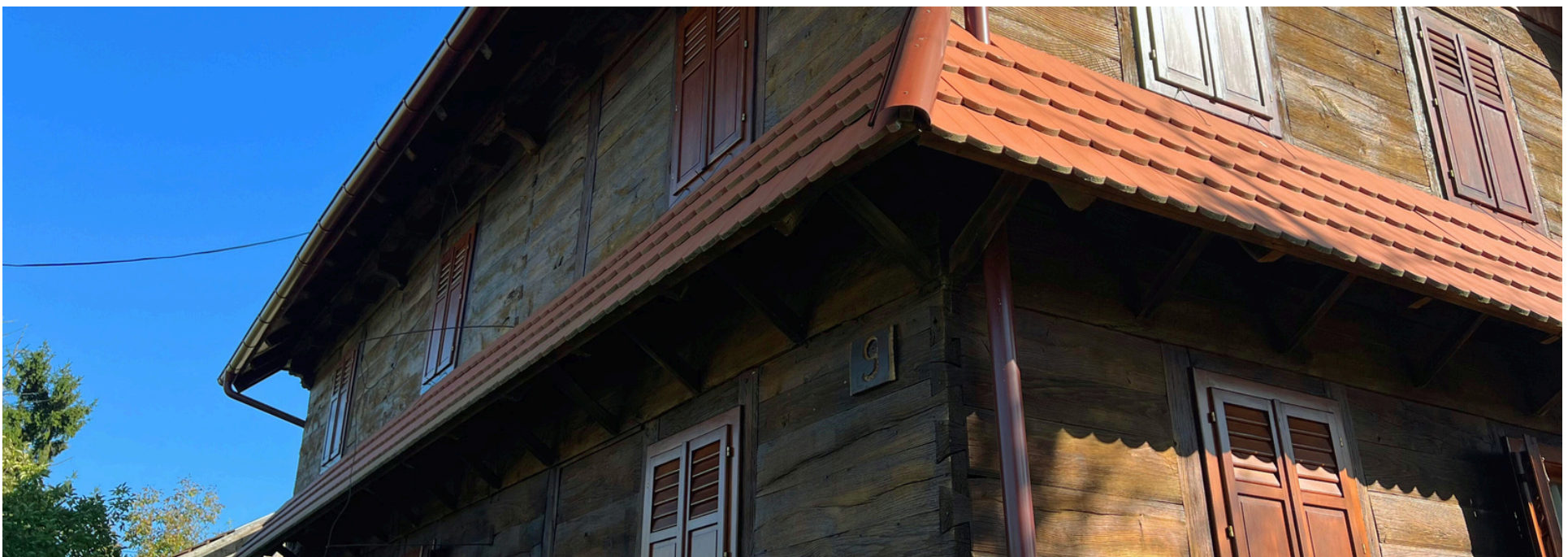
Over time, some houses have been significantly altered. It was documented whether they presented extensions or modifications, and if so, their location was recorded, the period when they were built, and the materials used.



## 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, which were also documented.

## 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. Features such as wells, traditional fences and water troughs have been documented.

## 10. Other

At this point additional information that was not covered earlier was included. This section records whether the owner was present during the documentation process, and if so, what was learned from them - for example details about the history of the house, past restoration work or later modifications. It was 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: facades, street view, house details, agricultural elements and yard elements.

a. facades (as many as approachable)



b. whole yard (from street)



c. house details (corner, ornaments, inscriptions)



d. agricultural elements



e. traditional yard elements



# OUTCOMES

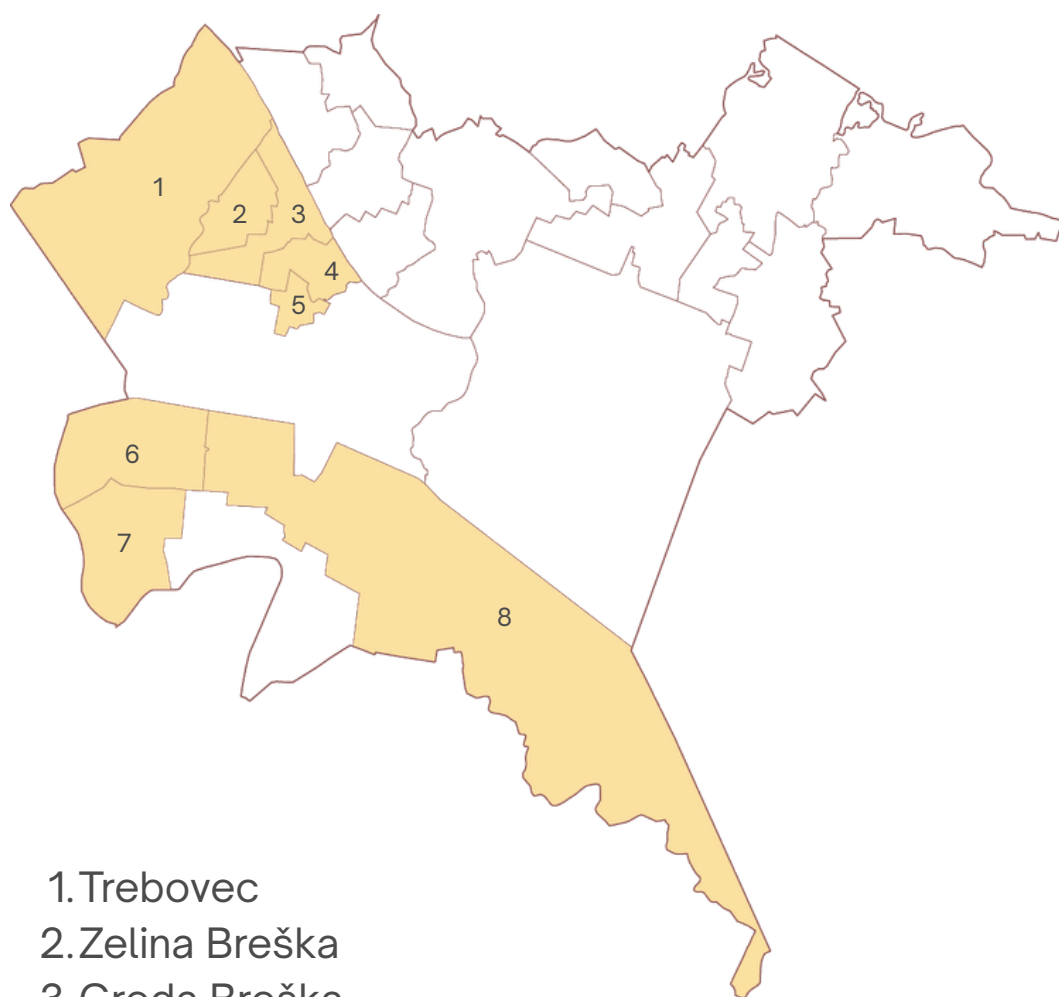
THE CURRENT STATE OF VERNACULAR  
ARCHITECTURE IN POSAVINA REGION  
OF IVANIĆ-GRAD

# DATA

# 144

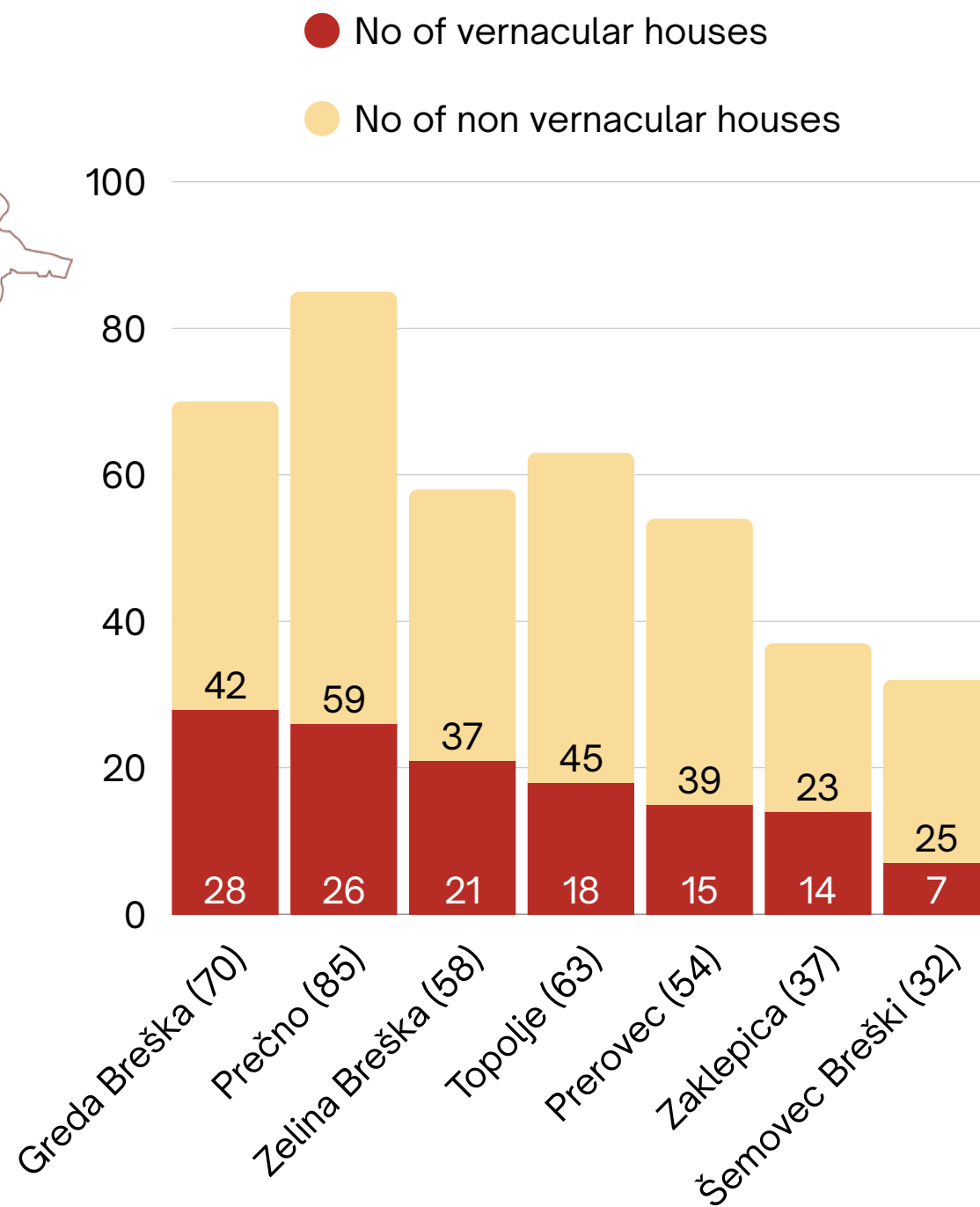
## Vernacular houses recorded

### Villages recorded



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

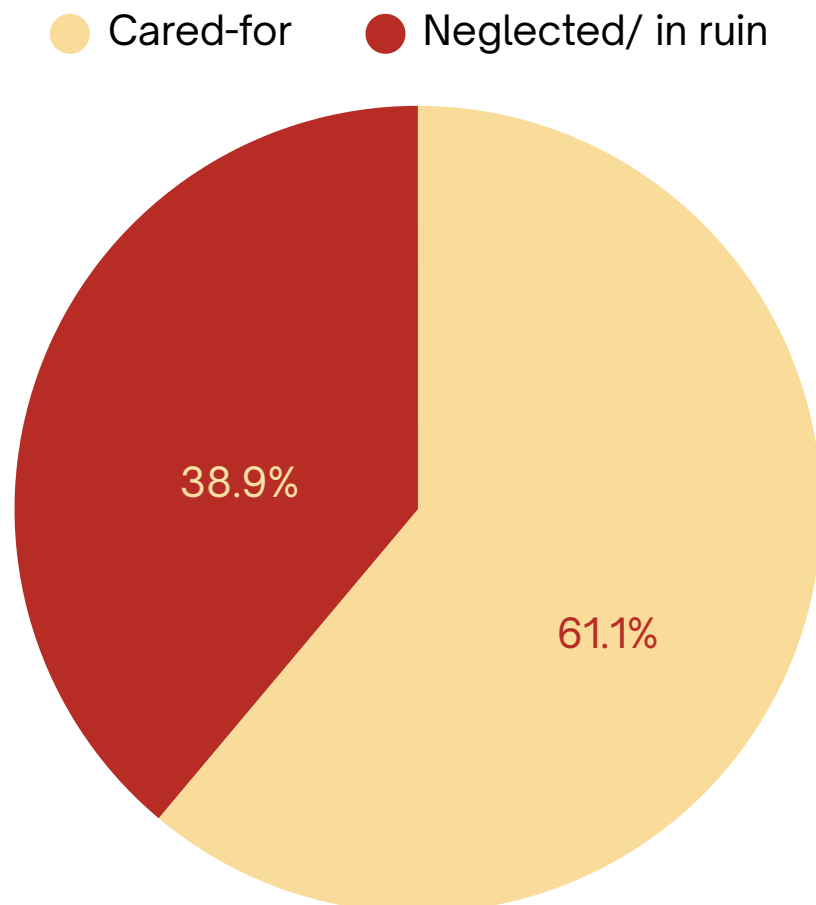
### Ratio of vernacular houses



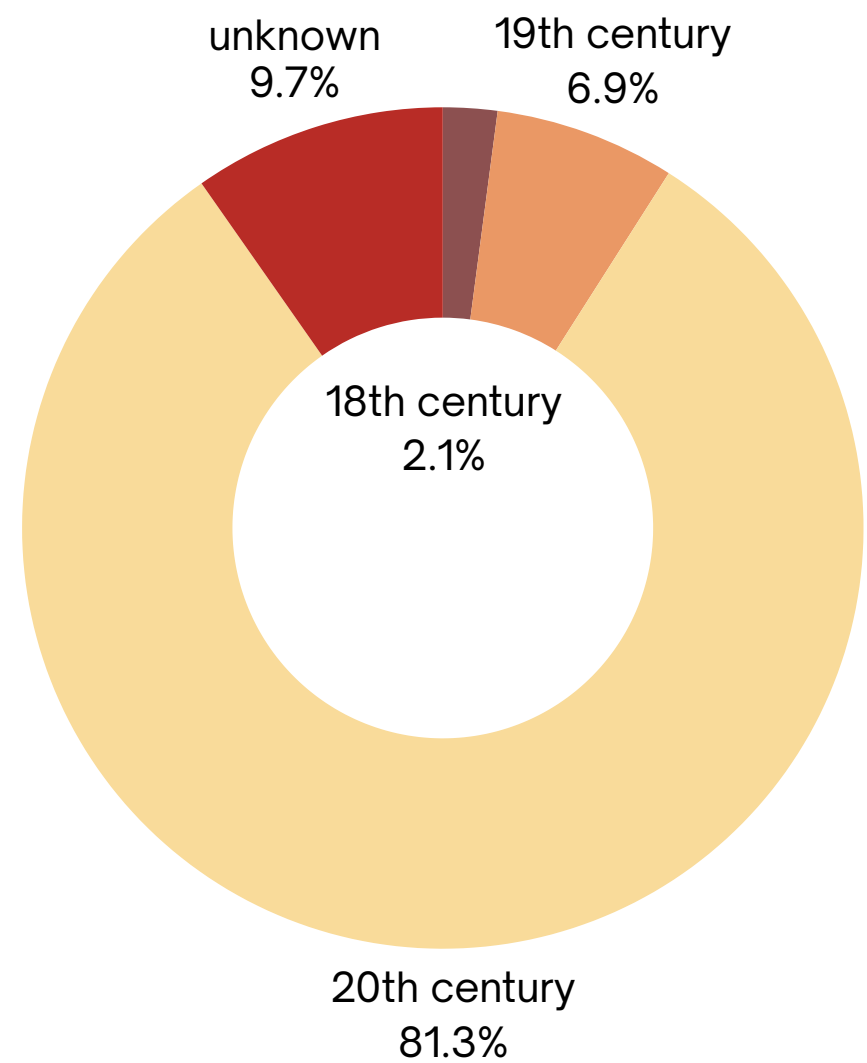
# 61%

## of vernacular houses recorded are maintained

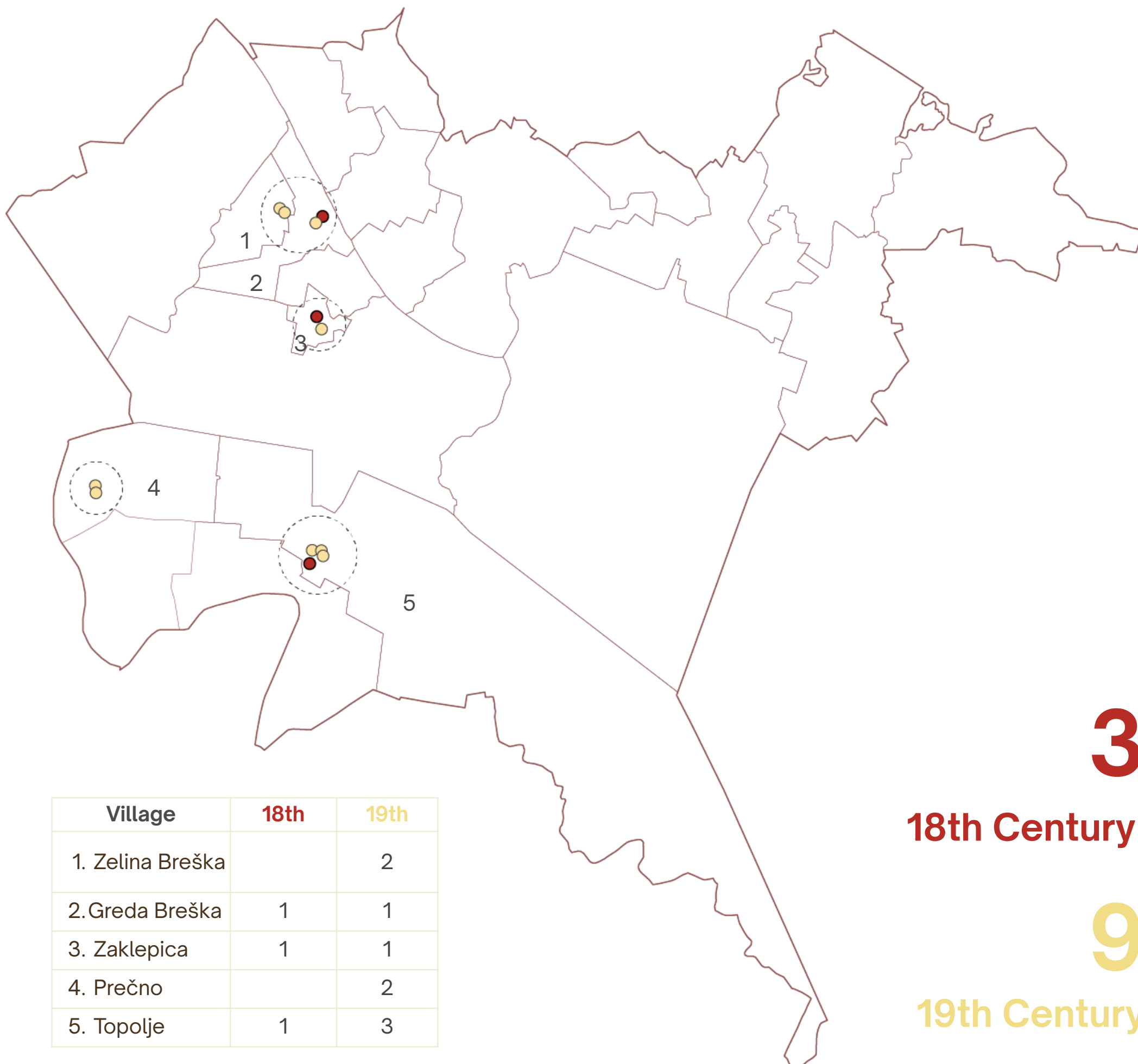
State of the vernacular houses



Construction periods



# Oldest houses recorded:



**3**

**18th Century**

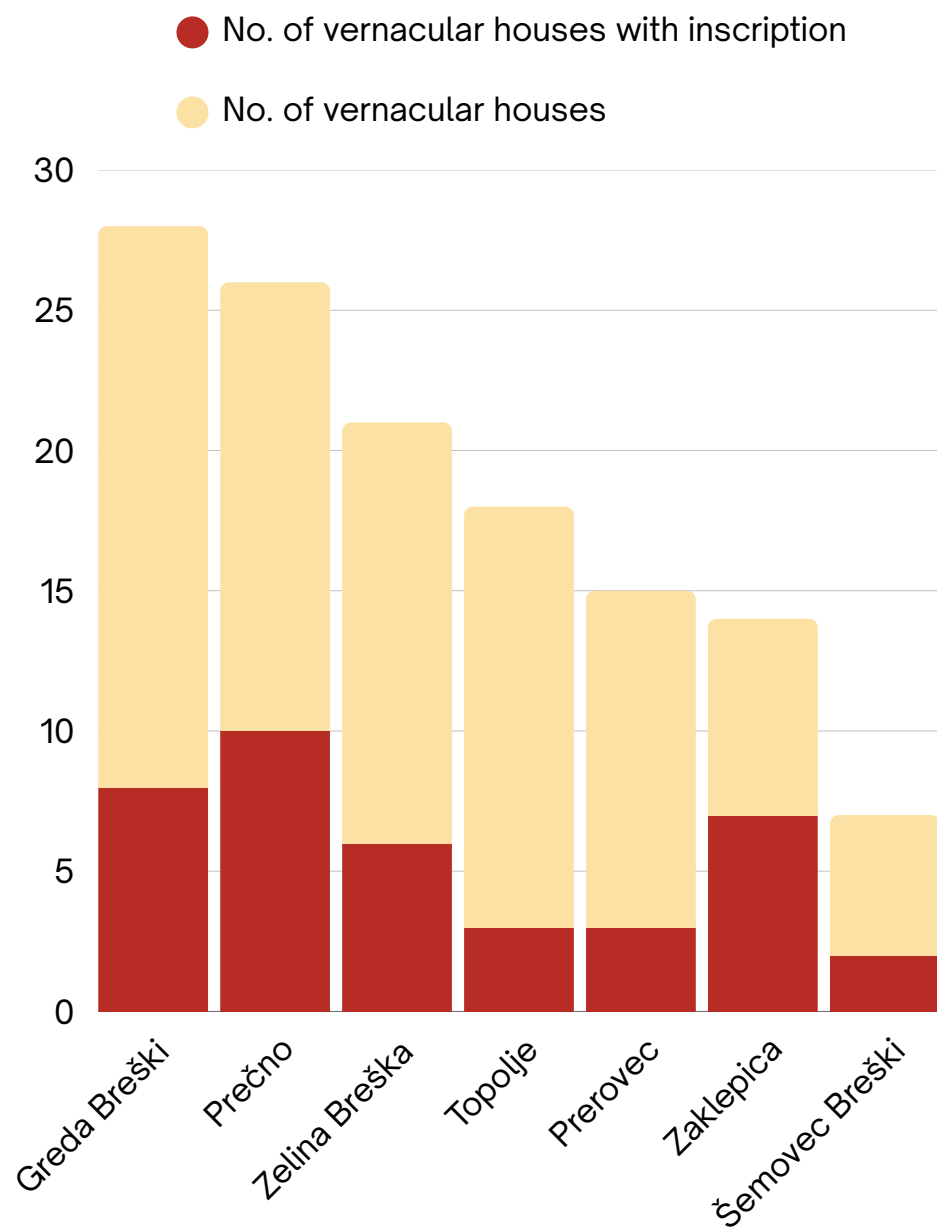
**9**

**19th Century**

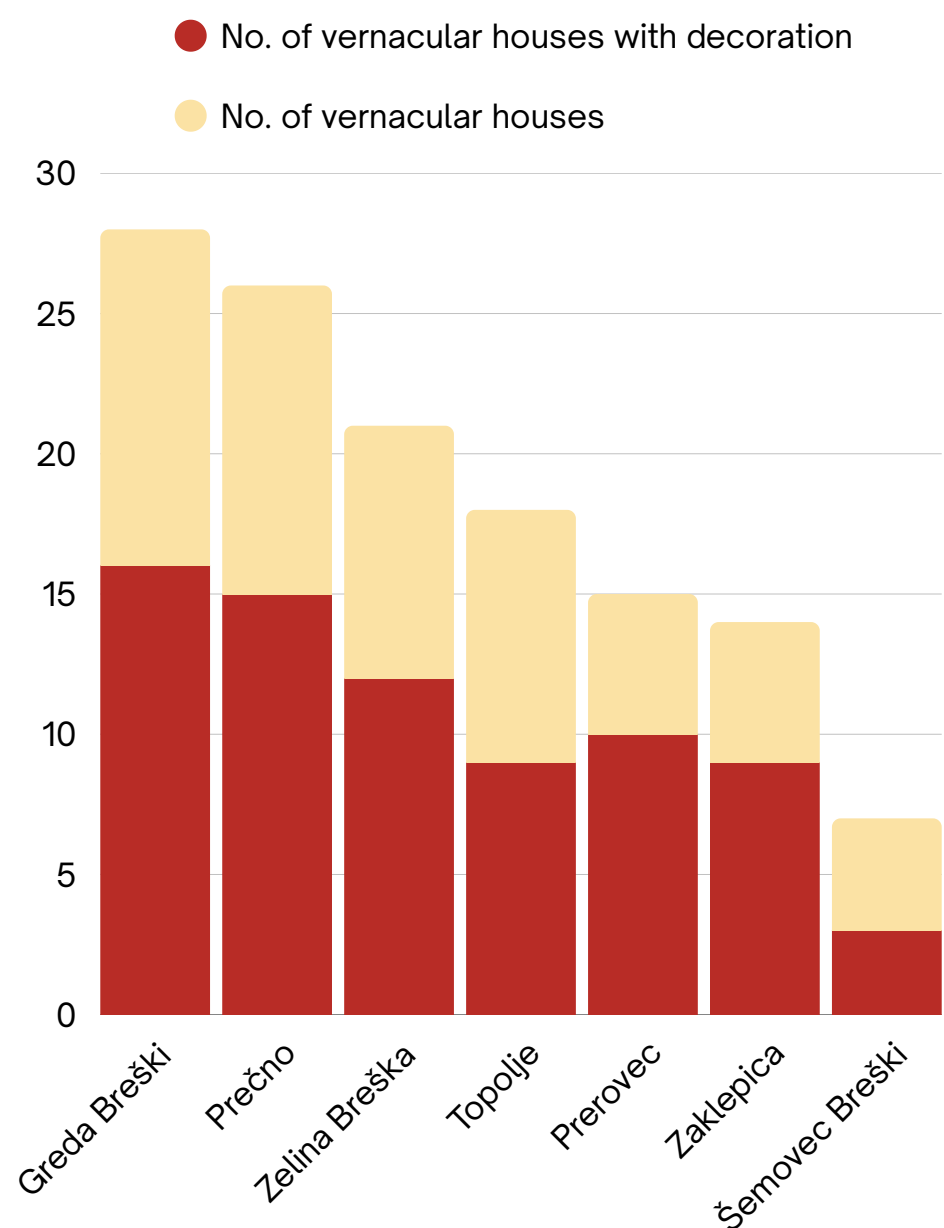
# PREČNO

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 potentials and problems associated with managing of the traditional houses. This integration helps to 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 evaluation of 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 conditions 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 Hereditatis 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



The City of Ivanić-Grad



Croatian Academy  
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Zagreb County



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i medija  
*Republic  
of Croatia  
Ministry  
of Culture  
and Media*

Ministry of Culture and Media

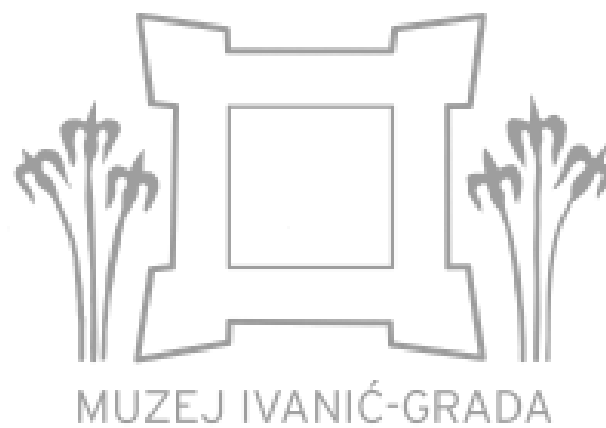
# PARTNERS



European Heritage Volunteers



Prijatelji baštine  
Amici Hereditatis



Museum of Ivanić-Grad

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.



September 2025

