

THE YOUNG AND THE
ARCHITECTURAL
HERITAGE

PILES
PJOVERI
SHELTERS
COTTAGES
BUNJE

TECHNICAL EDUCATION PROJECT

Participants:

Students from elementary school

Pučišća, 5. – 8. grade

OBJECTIVES:

- ***to introduce drywall architectural heritage***
- ***to comprehend the importance of drywall construction***
- ***to develop sensitivity for cultural heritage, its protection and economic validity for the renewal***
- ***to develop key competences: communication in mother tongue, learning, mathematical and technical competences, using digital technologies and social skills in the multicultural environment***

TASKS:

- ✓To explore the environment, to study drywall objects across the landscape
- ✓To collect data and to make photos about the locations with drywall heritage
- ✓To map and name the chosen locations using the local toponyms
- ✓To conduct interviews with local residents (history, purpose, use)
- ✓To study and describe the drywall build style around individual locations
- ✓To make drafts and technical drawings of certain objects at the locations (sites)
- ✓To describe and explain the ratio between every detail on the draft (sketch)
- ✓To practice drywall construction (piles and paths)

**PROJECT RESEARCH CONNECTS SEVERAL
TEACHING SUBJECTS:**

History

Geography

Technical education

Art

Maths

ICT

OUTCOMES_(measurable results):

- ***Working journal***
- ***Photos***
- ***PP presentation***
- ***Sketches***
- ***Pile models***
- ***Double piles made in whole length***

PROJECT REALISATION

Research chronology

- Part one - SHELTERS
- Part two - *PJOVERI*
- Part three - COTTAGES
- Part four - *BUNJICE*
- Part five - PRACTICAL WORK

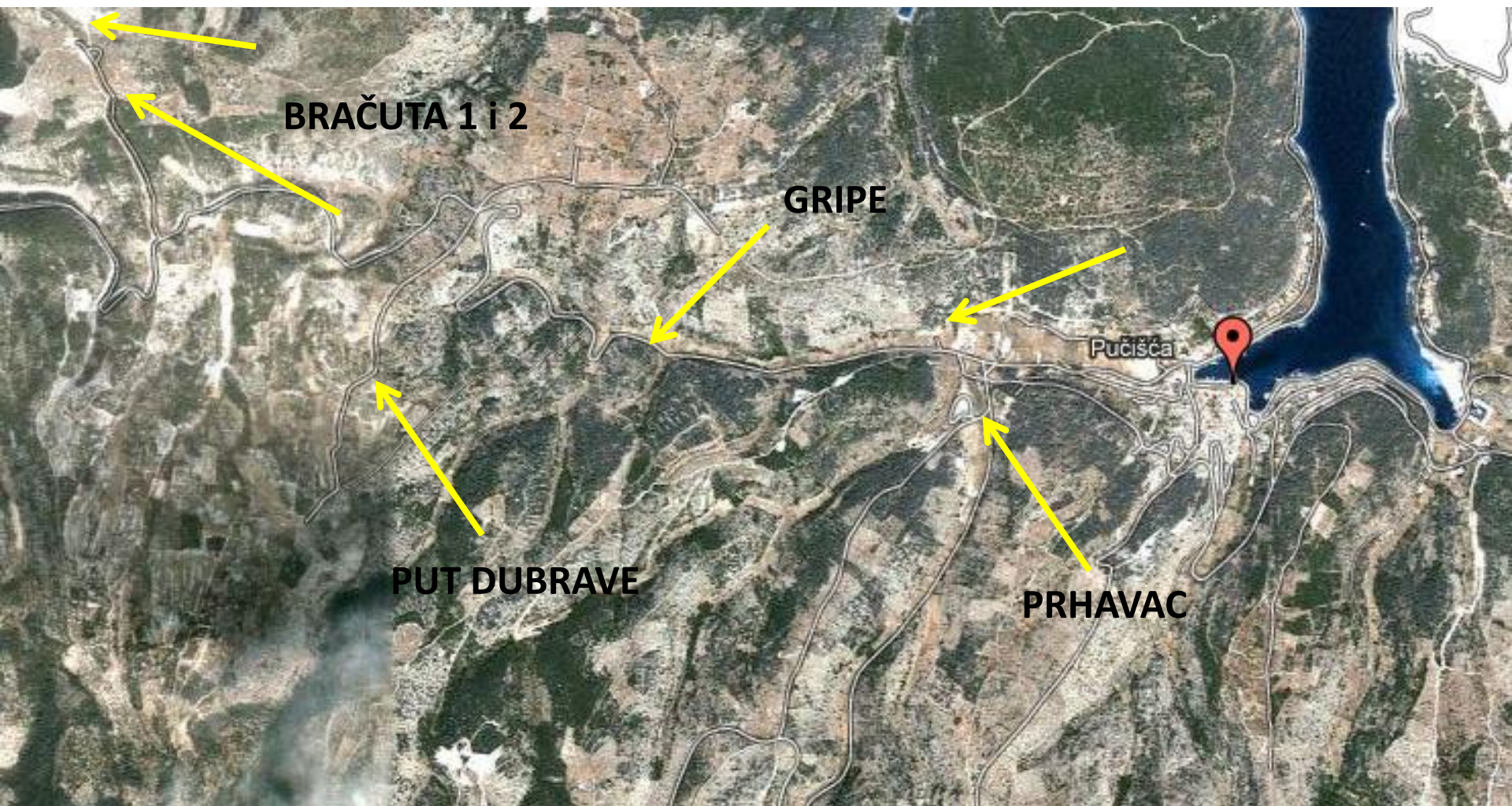
Methodology

- Landscape research, studying drywall objects
- Classifying the objects
- Collecting data (taking photos, measuring, drafting, interviewing the local residents)
- Studying the literature
- Processing the collected data (Word and PP presentation)

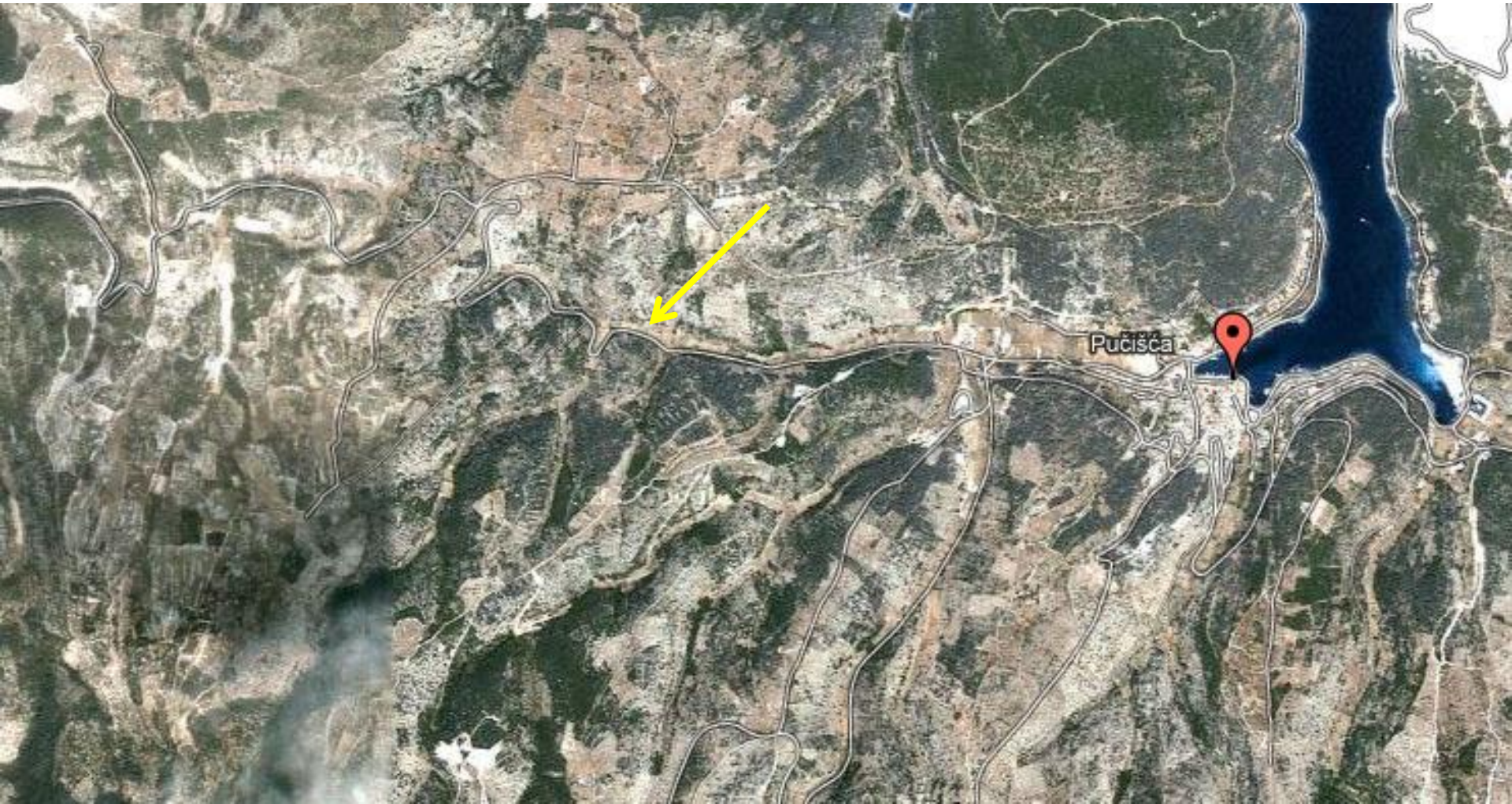
- *Explored areas are mapped*
- *All the field work was carried out on Brač (Pučišća area)*
- *The processed drywall objects are also mapped*



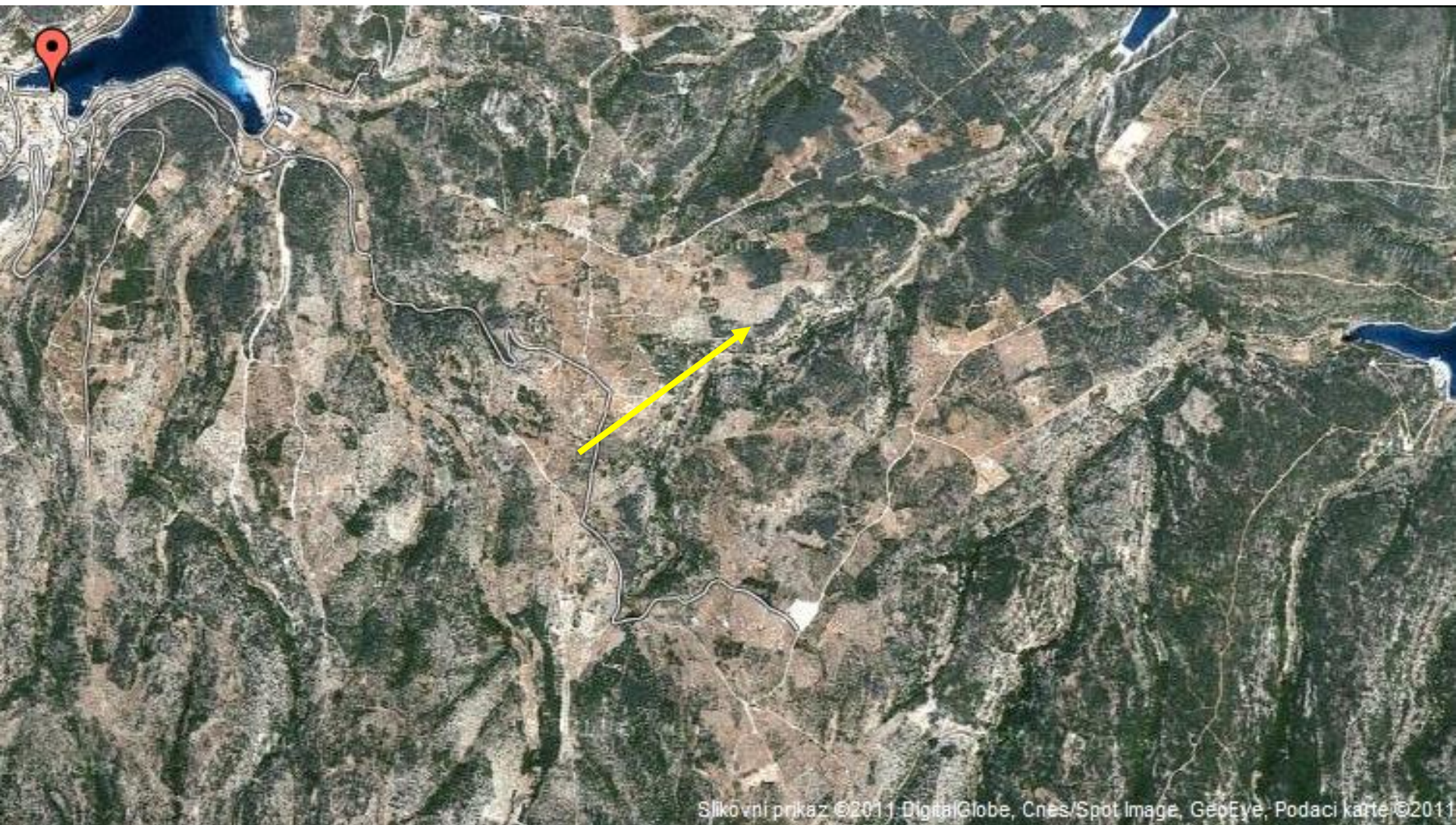
Bunjica position



Gripe shelters position



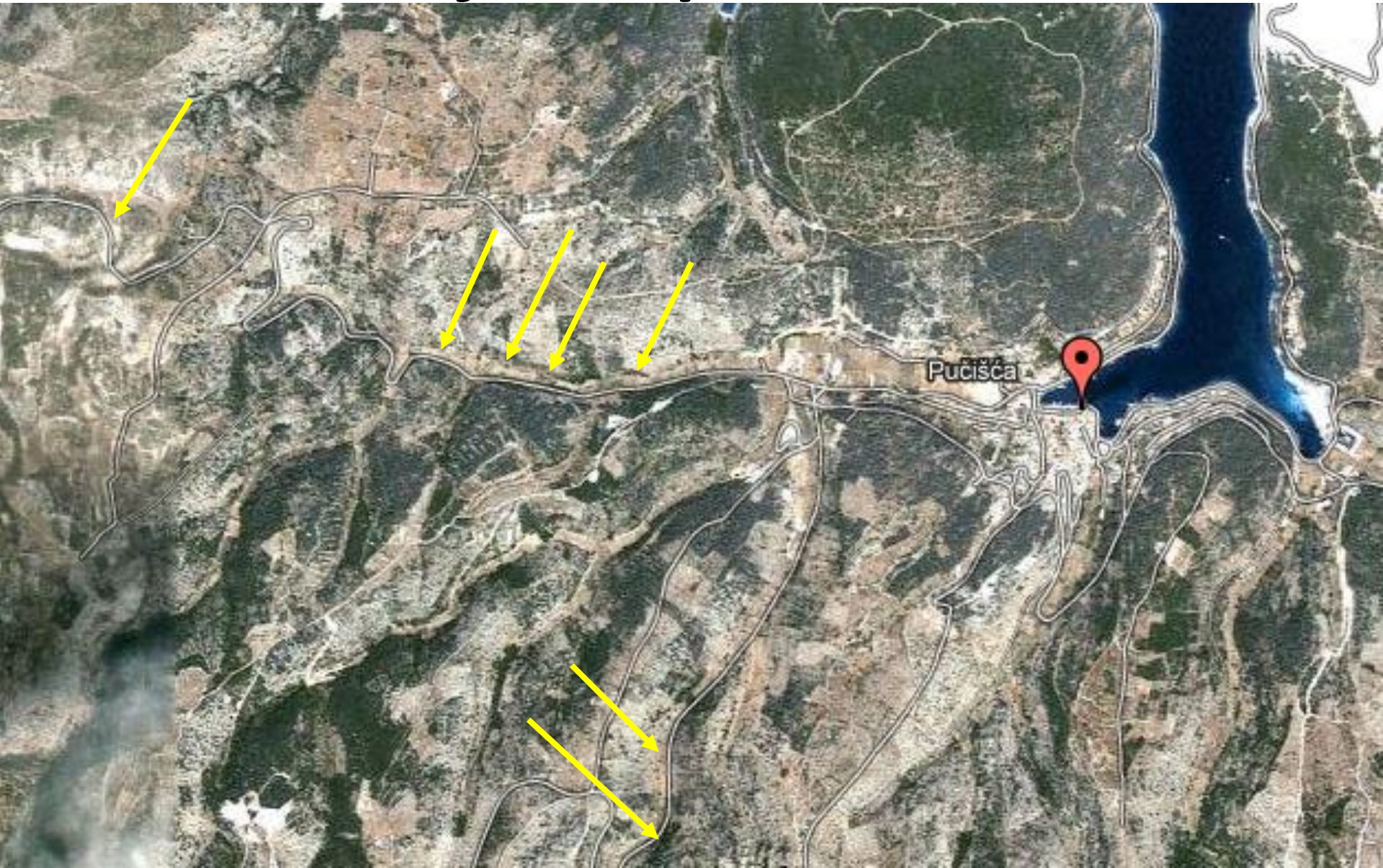
Čad shelters position



Cottages' position



Pjoveri position



ABOUT DRYWALL HERITAGE

- Drywall objects (buildings) are situated among stone piles and walls and sometimes go unnoticed
- They are discreet, **in harmony with the environment**, but nevertheless very significant for the people of Brač

Traditional drywall objects were used by local populace:

- **as the SHELTERS from the bad weather**
- **as the STORAGES for the fruits**
- **as the RESTING PLACES during the hot summers**
- **as the LODGINGS during seasonal field labour**

- Although they were built in distant past, most of them (processed in this project) are not so old
- According to the locals they are from 50-400 years old
- They can impress with their quality and position in nature

SHELTERS



BUNJICE



DRYWALLS



PJOVERI



COTTAGE

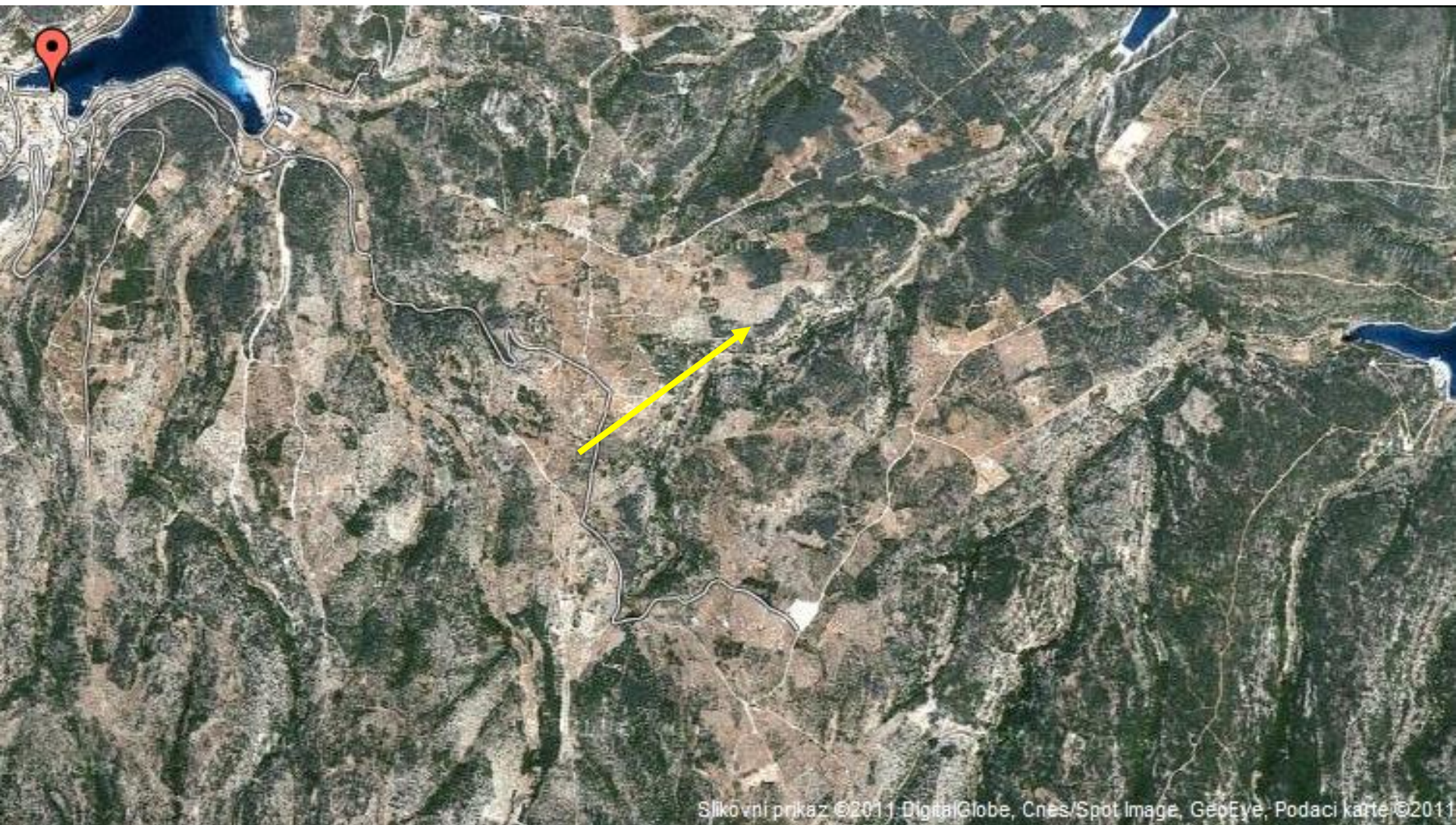


Part one

SHELTERS



ČAD SHELTERS POSTION



CONSTRUCTION STYLE

- Shelters are small objects built using dry stone techniques – without connective materials
- They are round or square
- They are built using stones found nearby
- They are covered by stone panels

- Bad weather conditions were inconvenient for the Brač peasants
- These shelters used to provide protection for the peasants





The shelter was built of stone collected nearby.

Above the opening there is a large stone slab resting on a carefully folded semicircular structure.



- The purpose of these shelters was the protection from the rain and cold winds

SUMMARY

- ***The shelters are square or half round drywall objects***
- ***The roof is made of stone panels***
- ***The roof panels lean on wooden joists***
- ***Most of them are neglected***
- ***It would be nice to renew and expose them to the public***

Part two

PJOVERI



- ***Pjover* is a natural drain or a water collector**
- **They go unnoticed in nature**
- **Most often they are the parts of piles or fences, or sometimes independent objects in the fields**

- **They have a special purpose**
- **Stone panels like roof panels shape the surface**
- **At the bottom there is an opening covered with stone which hides the water tank**

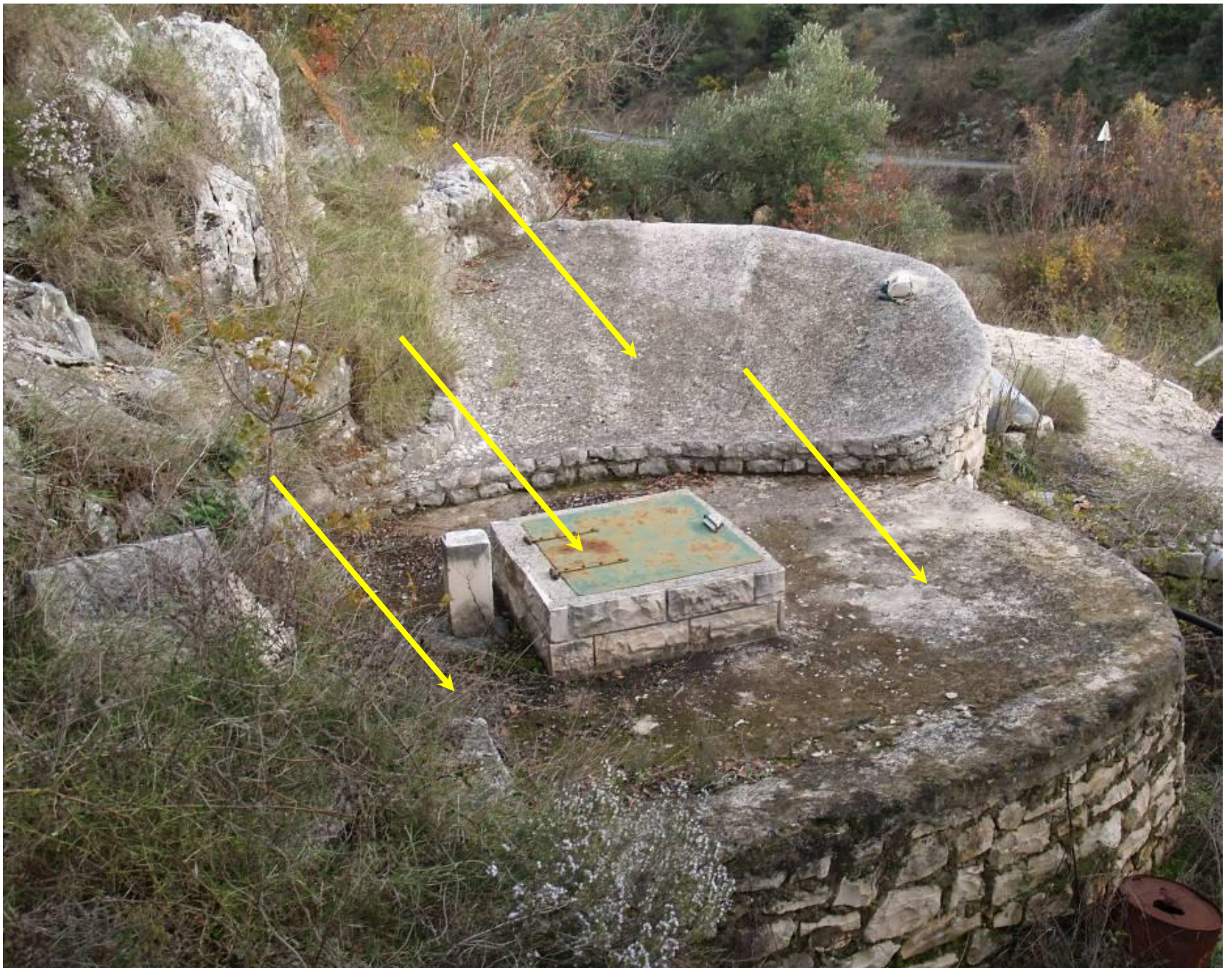


What are *pjoveri* used for?

- **Stone panels and natural canals and drains enable to collect water in a natural tank**
- **To collect more water people used to build additional walls, holes or they just widened the stone surface**

- **Large amounts of water were collected by using the natural downfall of surrounding rocks**
- **" live rock" enabled longer water retention**
- **Water collecting increased the possibility of survival and improved life conditions**





- **The collected water was used to soak soil**
- **That water was used to grow cultures uncommon for the mediterranean climate**



- Sometimes nature itself stores the water for the survival of plants and animals in the environment. The best example are two dents on Bračuta hill that later became puddles called *BLIZNICE*





- The first *bliznica* is separated by stone shoal, and the second one was altered by human hand to increase the tank area





- **The water tank located under the *pjover* made of stone, reinforced by concrete, enables the soaking of nearby vineyards**





SUMMARY

- **Every water drop is precious, especially on the islands in Dalmatia**
- **Hardworking peasants use every opportunity to collect and preserve water**
- ***Pjoveri* significantly help to collect water**
- **They (*pjoveri*) used to be natural dents, but today after some human interventions the water tanks are increased**

Part three

BUNJICE

- **Man has always tried to find shelter from bad weather (under the tree, rock, in the caves, etc)**

Prehistorical period on Brač

Historical artifacts prove that people lived in special habitations in Dalmatia, and on the island of Brač in BC times

- **These small, round based houses can be seen today all over the island and especially in and around Pučišća county.**

- **They stand proud, lonely, built everywhere (near olives, piles, paths, fences...)**
- **They are small works of art that belong to primitive and simple architecture.**

- **To hide from the wind, rain or sun**
- **To have a break or snack**
- **To feel safe...**

...All was and is provided by *bunjice*

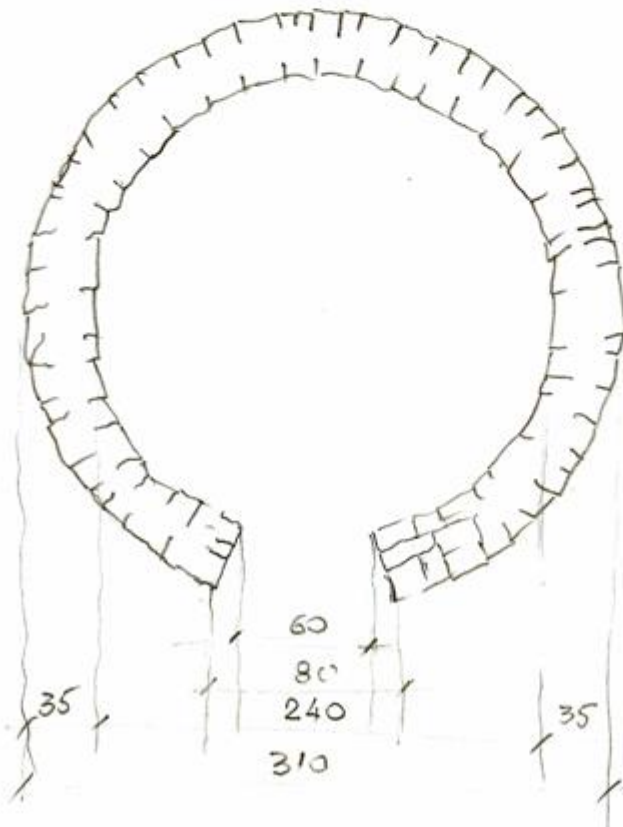
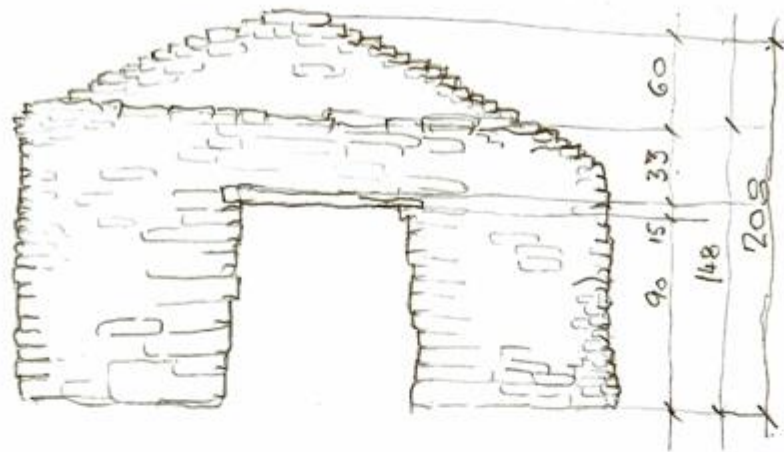
- **They are still of use today if you want to get away**

It has several names in Dalmatia:

- *kućarica or trim (Bukovica)*
- *bunja or ćemer (Šibenik)*
- *kućica, kućerak, bunja or pećina (Brač)*
- *poljarica or pudarica (Dalmatinska Zagora)*
- *kažun or kašun or komarda (Istra)*
- *jama or trim (Hvar)*
- *komarda (Krk)*







the basic measurements are:

height-208 cm

outer diameter-310 cm

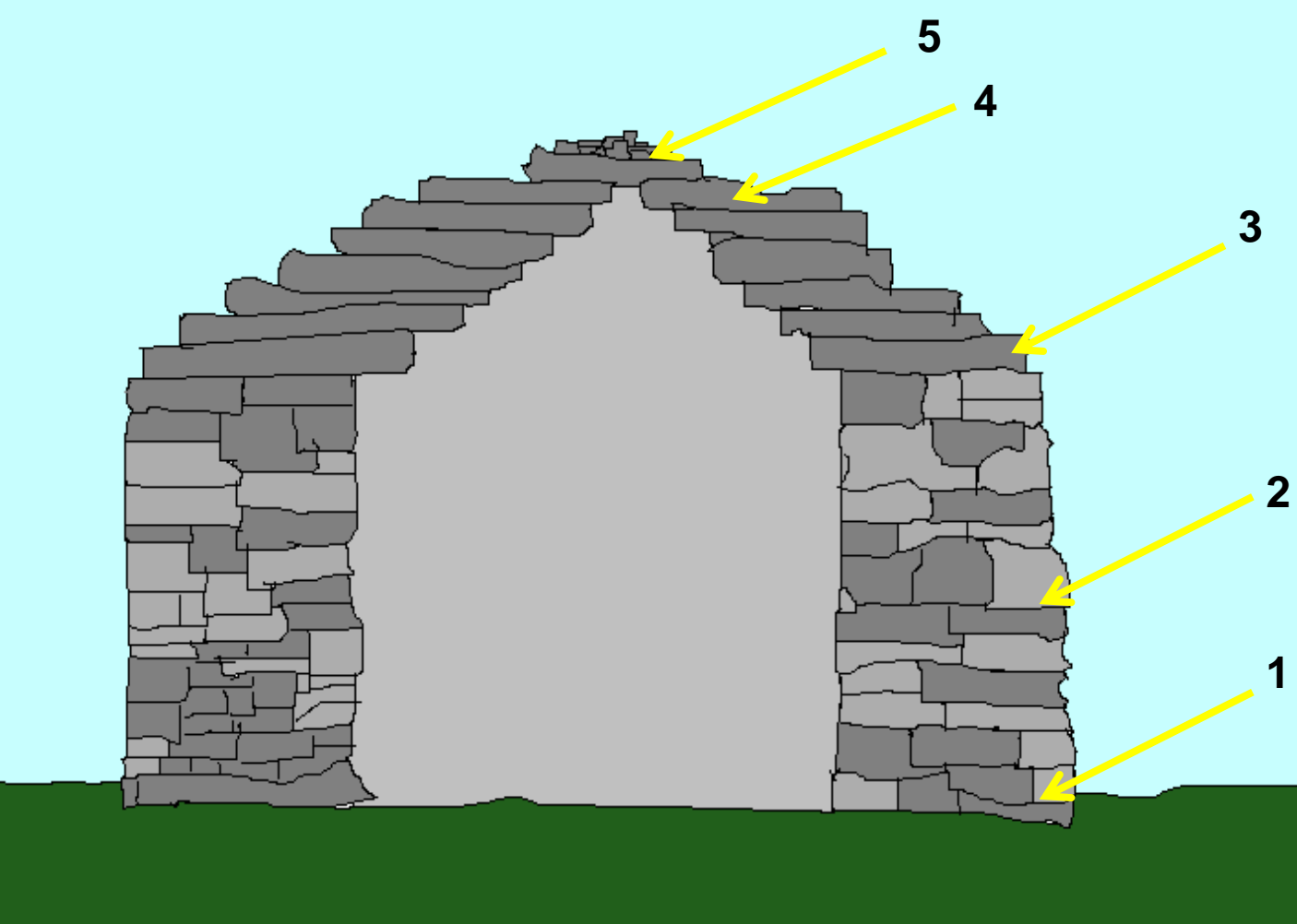
inner diameter-240 cm

door width-60-80 cm

door height-80 cm

wall thickness-35-40 cm

- ***Bunjica* impresses with its roof panel order. The roof is completely impermeable, without truss or any connective material. It is made only from stone panels.**



1 - bunjica foundation

2 - different size stone

3 - stone panels for the roof

4 - the final panel that is added to the roof and shut with small stones

5 - different size panels







Part four

Cottages

- **They are square, bigger and more complex, built by drywall technique**
- **The walls are built using stone squares and smaller size rocks**
- **The roof is made of stone panels and round wooden billets**

- **Field cottages were traditionally built for farmers and shepherds**
- **They provide them safe haven during bad weather**

Example one

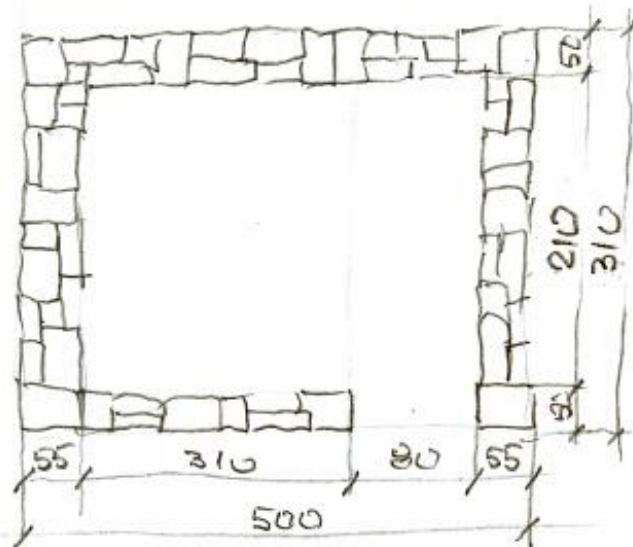
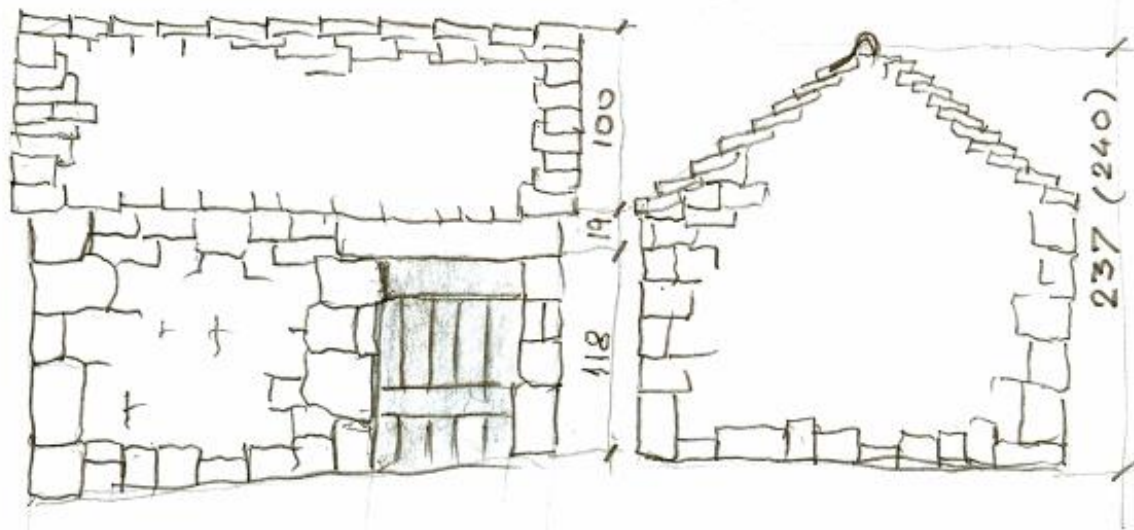
- **An old cottage is located on the left side of the road at the crossroads from Pučišća to Pražnica**



It should be restored



**BIG HEADER STONES AT THE CORNERS AND
AROUND THE OPENINGS**



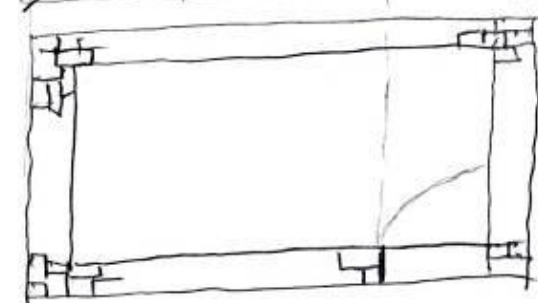
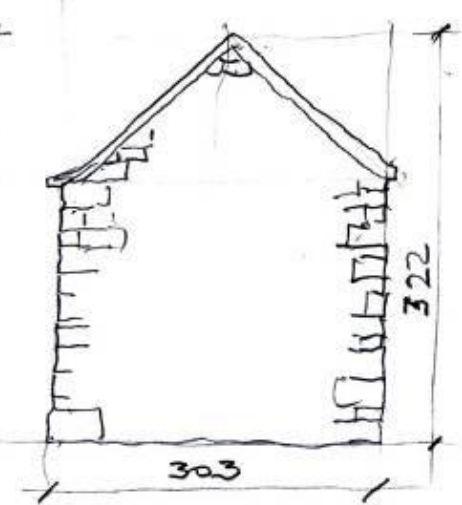
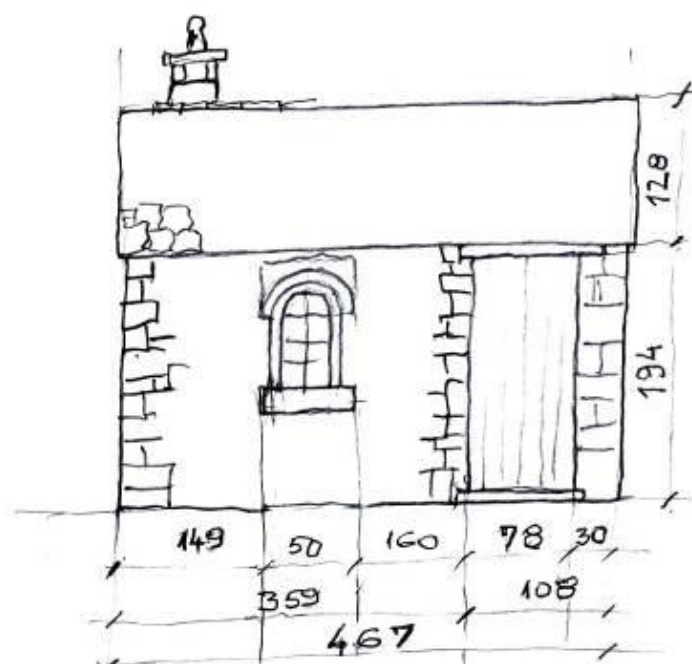
The need to preserve traditional objects and architectural heritage

- **There are many abandoned and neglected objects on the island of Brač**
- **Each of them has its own story and history**
- **Some objects were renewed and implemented into daily life**
- **One of them is on Bračuta, near St George's Church**





New cottage



- **Here you can find out about 2 cottages (from 6 processed in the project)**
- **We found out several interesting facts**
- **The size ratio is shown in the table**

MEASURES (cm)	P1. kućicaUT PRAZNICA	P 2. BRDARINA	P3. PRHAVAC 2	P4. KOD SV.JURJA -older-	P5. KOD SV.JURJA -newer-	P.6 PRHAVAC1
HOUSE LENGTH	500	495	498	492	467	289
HOUSE WIDTH	310	319	310	298	303	250
HEIGHT WITH ROOF	237	231	245	240	322	274
DOORS WIDTH	80	78	80	85	78	66
DOORS HEIGHT	118	115	140	150	190	113
THICKNESS OF THE WALL	55	55	55	50	30	44

“THE GOLDEN RATIO” RULE

The *golden ratio* is a compositional rule where the smaller part is related to the bigger part as the bigger is related to the total. In practice, if we want to divide something in this way, we divide it in 13 parts in 8:5 ratio, or we divide it in 21 equal parts in 13:8 ratio.

- The *golden ratio rule* has been known since the Antique period. It was widely used during the renaissance (when artists and mathematicians sought perfection). The *golden ratio* has been considered as the perfect size ratio, and a harmony between precision and chaotic imperfection

Conclusion

- **Old builders proved the knowledge of ancient architectural laws.**
- **Slight deviations during the measurements are understandable. We are, after all, still inexperienced in measuring and seeking average size value.**

Size ratio shows the golden ratio rule

- length 500 495 498 289 497 467***
 - width 310 319 310 250 298 303***
 - ratio 5:3 5:3 5:3 3:2,5 5:3 5:3***
-
- next cottage ratio***
8:5 or
13:8 etc..



The cottages fit perfectly in the landscape with their color, shape, size and beauty

Part five

Practice

Drywall construction

Drywall is made of natural stone without any connective material. This skill has been a traditional heritage of Mediterranean area since pre history. Hardworking farmers have used stones to make impressive buildings for centuries.

- **The nearby stones were used also to build fences.**
- **Different size stones were used for building small walls, while small stones and sand were used to fill up gaps in the wall.**

- **We sought for wisdom from a grand master who still practices drywall technique. Mr *Joze Martinić Meštrante* tried to teach us some of his skills. We managed to create 30 m long drywall.**













- **We have spent 4 hours doing the drywall. We have also left a small piece of history for future generations. We want to participate in preserving the traditional architecture and to present it to the public.**

- **People of Brač will still use their cottages, they will preserve their fields, olives, fences but maybe not in a way their ancestors did.**
- **Modern technology and the machines should not prevent us from remembering our heritage.**