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Helsinki Finland
29 May - 2 June 2017

A WebGIS for the knowledge and conservation of the historical wall structures of the 13th - 18th centuries

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General aims of the multi-disciplinary research project "Traditional building techniques: from knowledge to conservation and performance improvement" are

1. To Study the building techniques in the 13th - 18th centuries in Sardinia region (Italy)
2. To Study the performance and the improvement of the examined buildings or structures on both the structural and the energetic use sides.

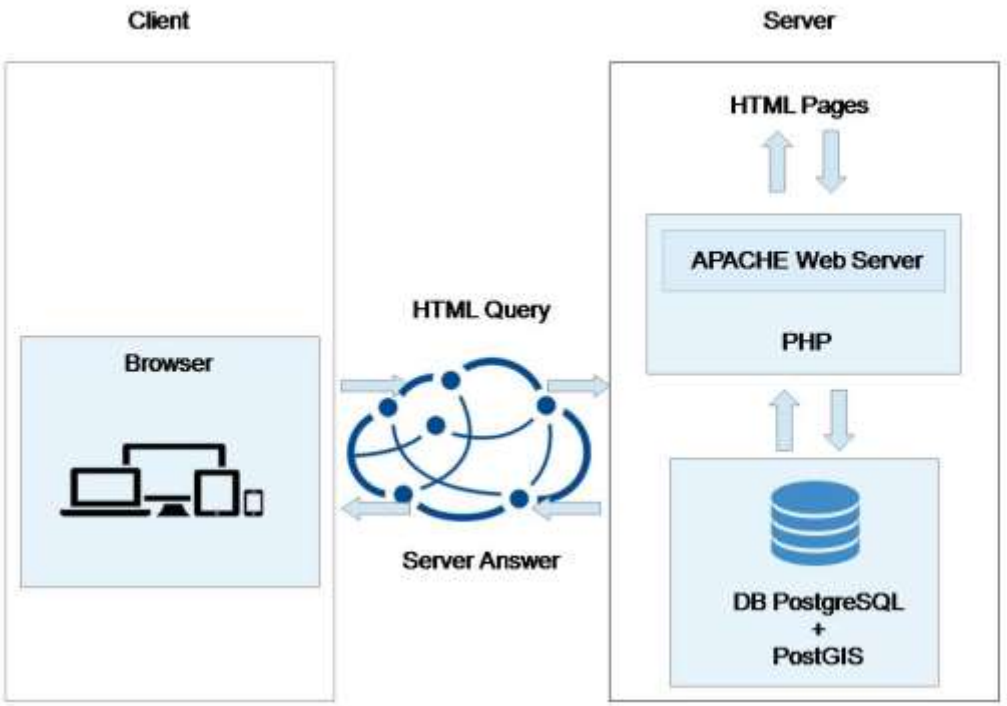
The multi-disciplinary approach of this project involving several specialists that are integrating their expertise and providing their input to the knowledge of the dimensional, technical-constructive, mensio-chronological, material, physical-mechanical and energy-performance features in order to define the peculiarities and behavior of the examined structures, their performance levels, and then direct the interventions toward innovative, mindful and ethically correct solutions.

In this research project all data acquired in the distinct steps and in different topics have been organized in a GeoDatabase and in a WebGIS.

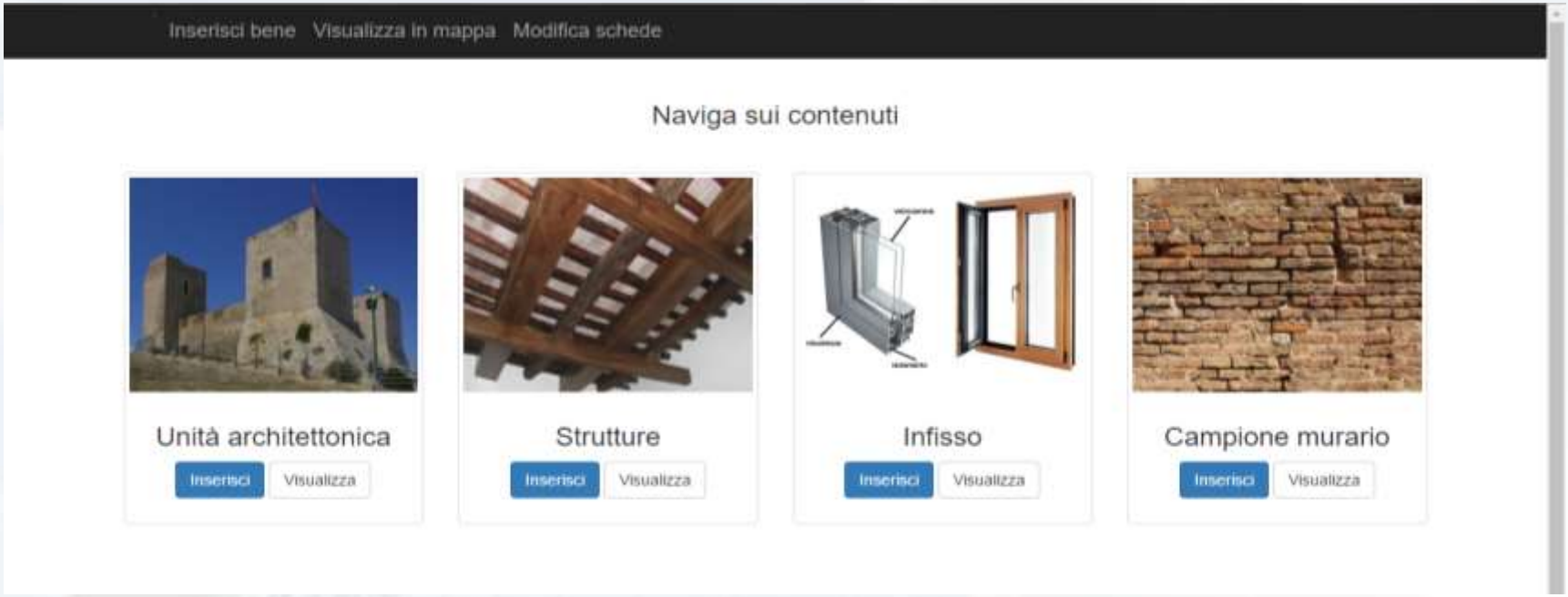
This infrastructure is built in according to the standards and specifications of the Sardinia region (Italy) and CISIS (Italian interregional center for GIS and statistical services) .

This infrastructure was entirely built using Open Source software.

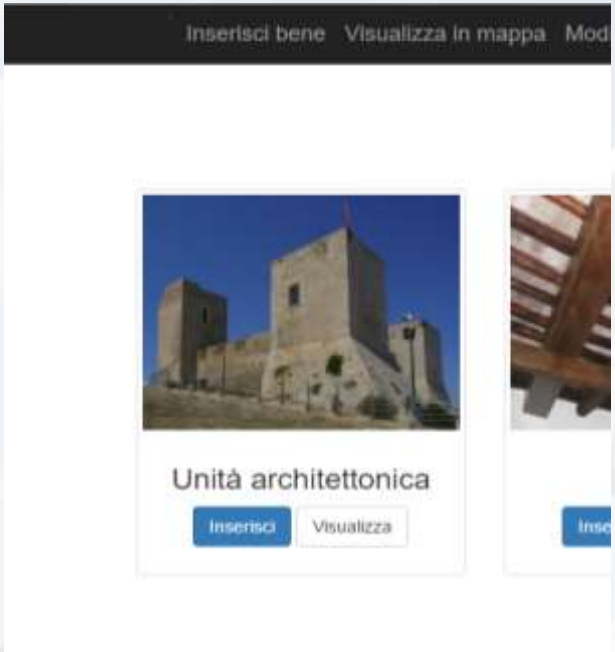
The infrastructure:
- A database
- A WebGIS
- QGIS



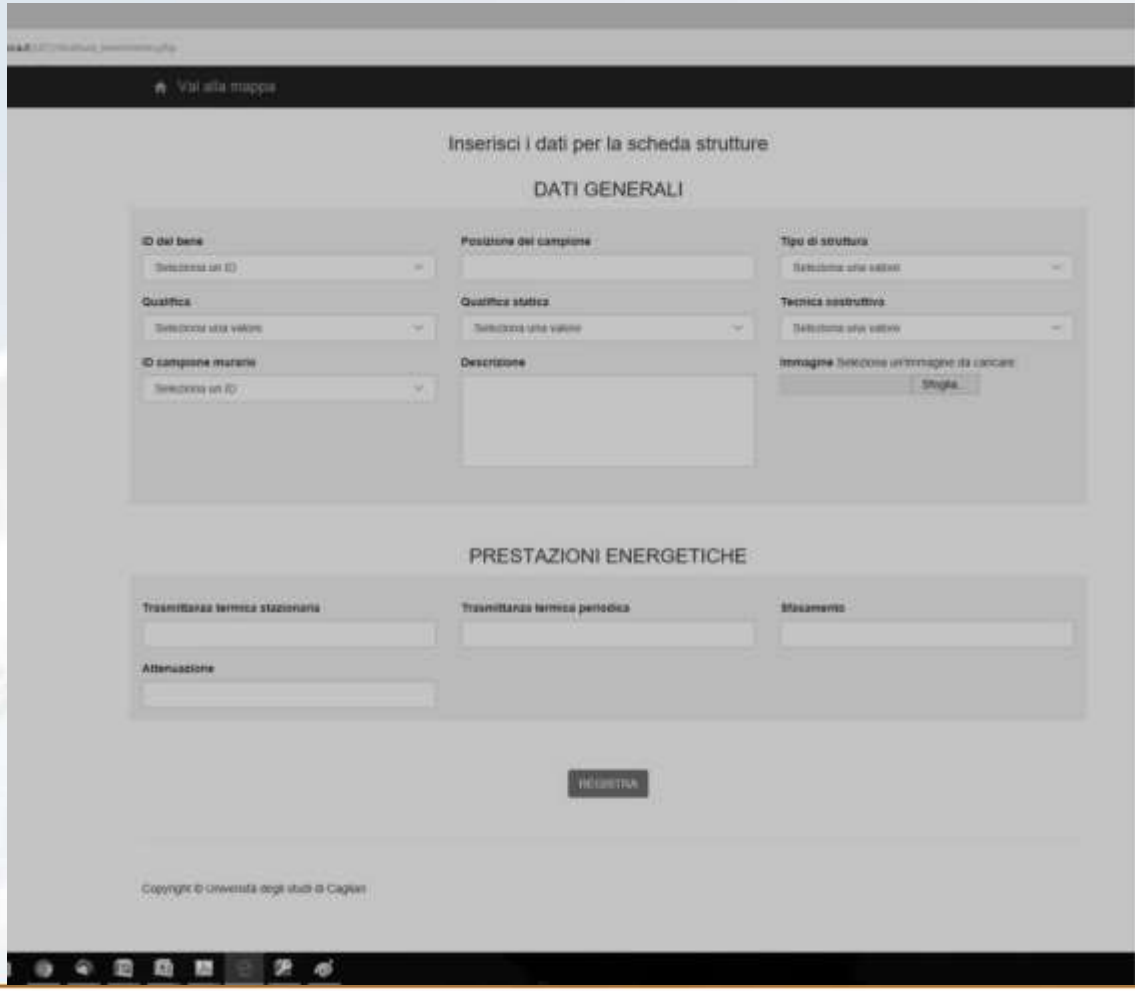
The Database



The architectural unit

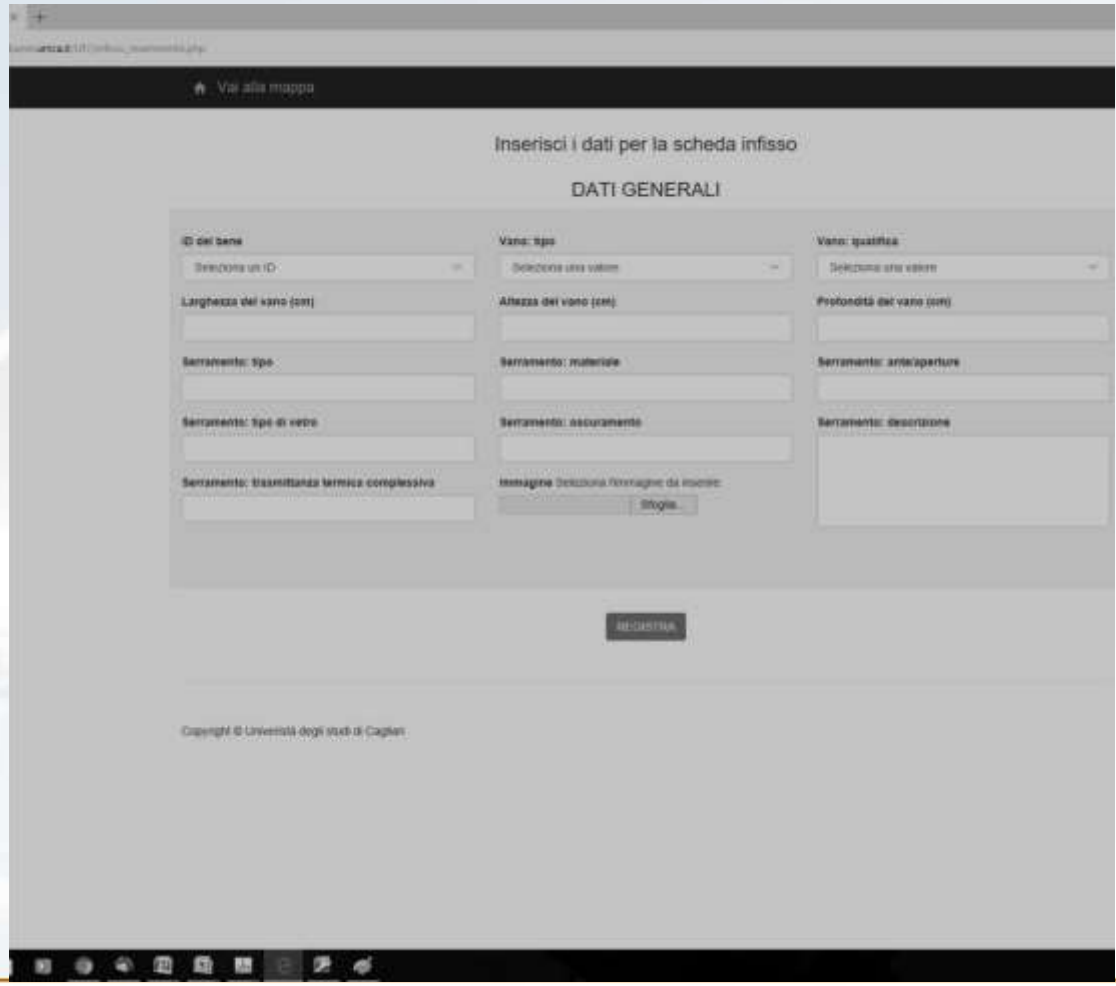


The structures



The windows

ga sui contenuti
Infisso
Inserisci
Visualizza


Vai alla mappa
Inserisci i dati per la scheda infisso
DATI GENERALI
ID del bene
Vano: tipo
Vano: qualifica
Larghezza del vano (cm)
Altezza del vano (cm)
Profondità del vano (cm)
Serramento: tipo
Serramento: materiale
Serramento: ante/aperture
Serramento: tipo di vetro
Serramento: oscuramento
Serramento: descrizione
Serramento: trasmittanza termica complessiva
Immagine
Sfoglia...
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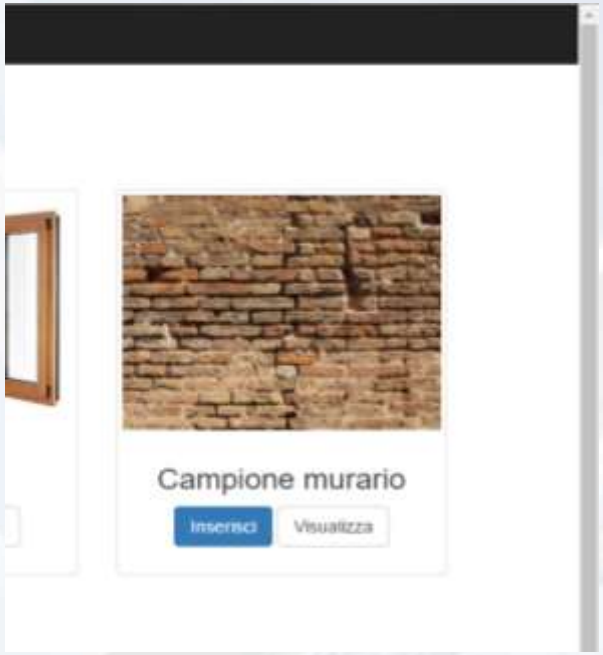
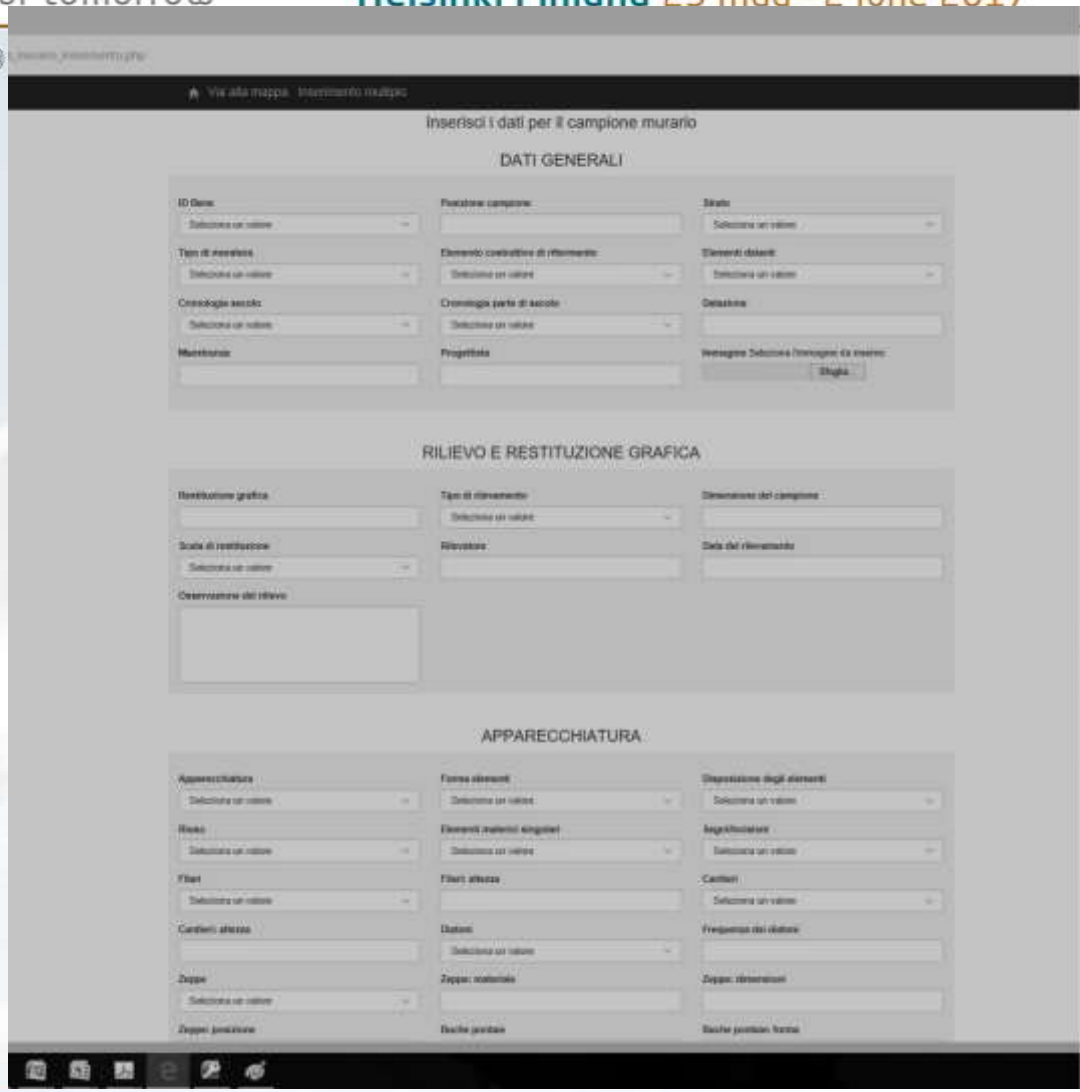
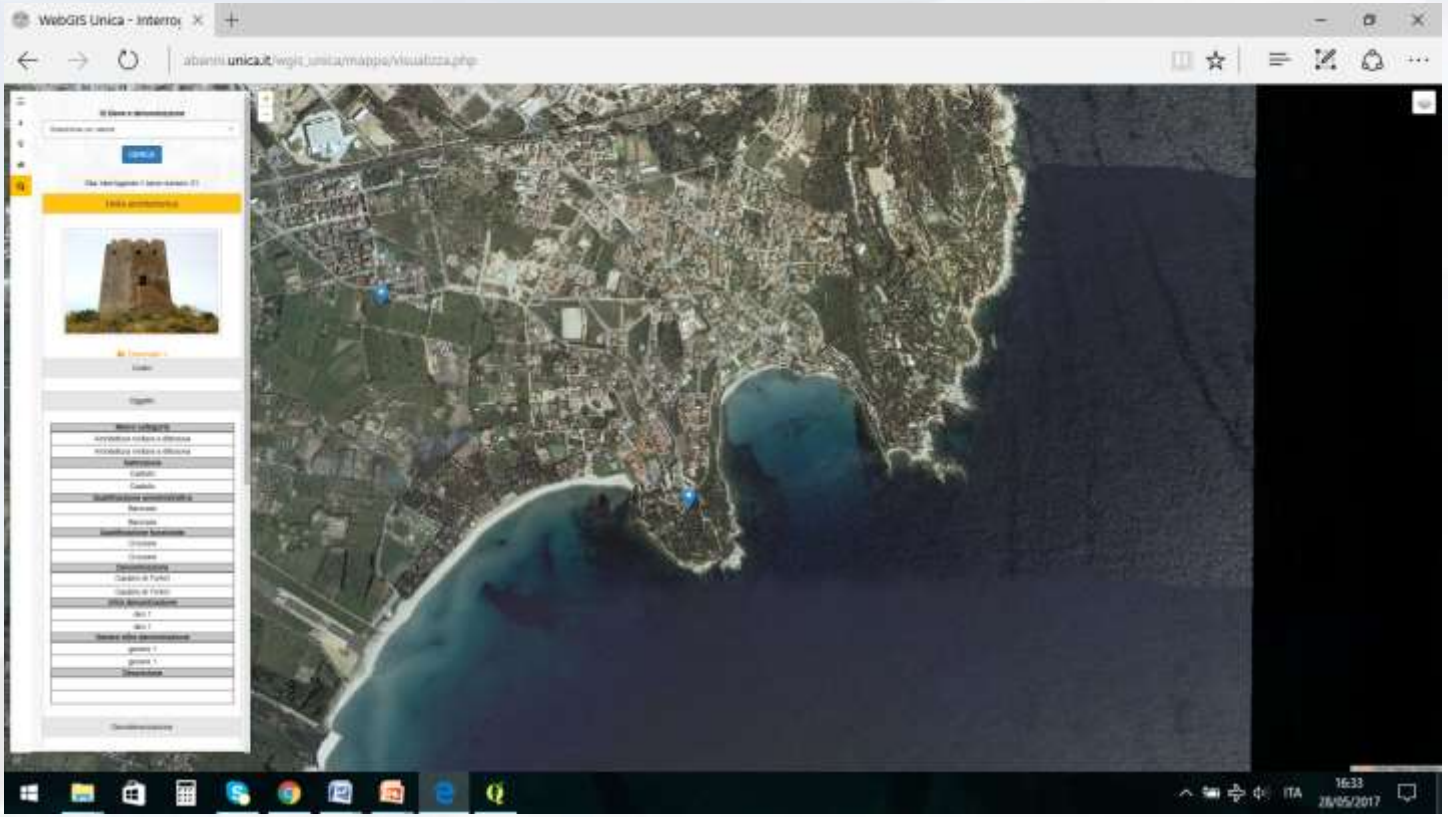
The Masonry Sample

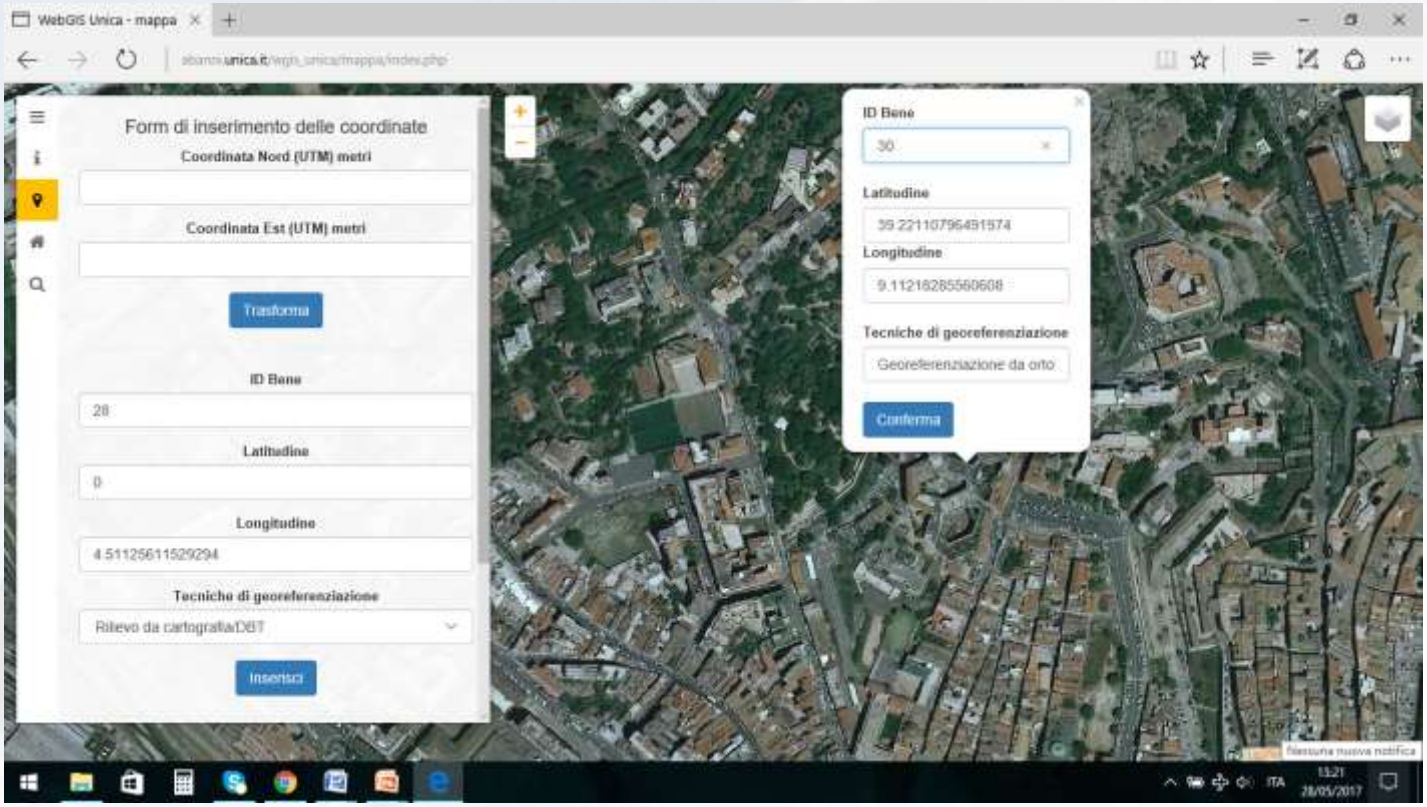




The WebGIS


WebGIS Unica - Interro
unicait/wgis_unica/mappe/visualizza.php
ITA
16:33
28/05/2017

The WebGIS


WebGIS Unica - mappa
Form di inserimento delle coordinate
Coordinata Nord (UTM) metri
Coordinata Est (UTM) metri
Trasforma
ID Bene
28
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Longitudine
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Tecniche di georeferenziazione
Rilievo da cartografia/DBT
Inserisci
ID Bene
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Longitudine
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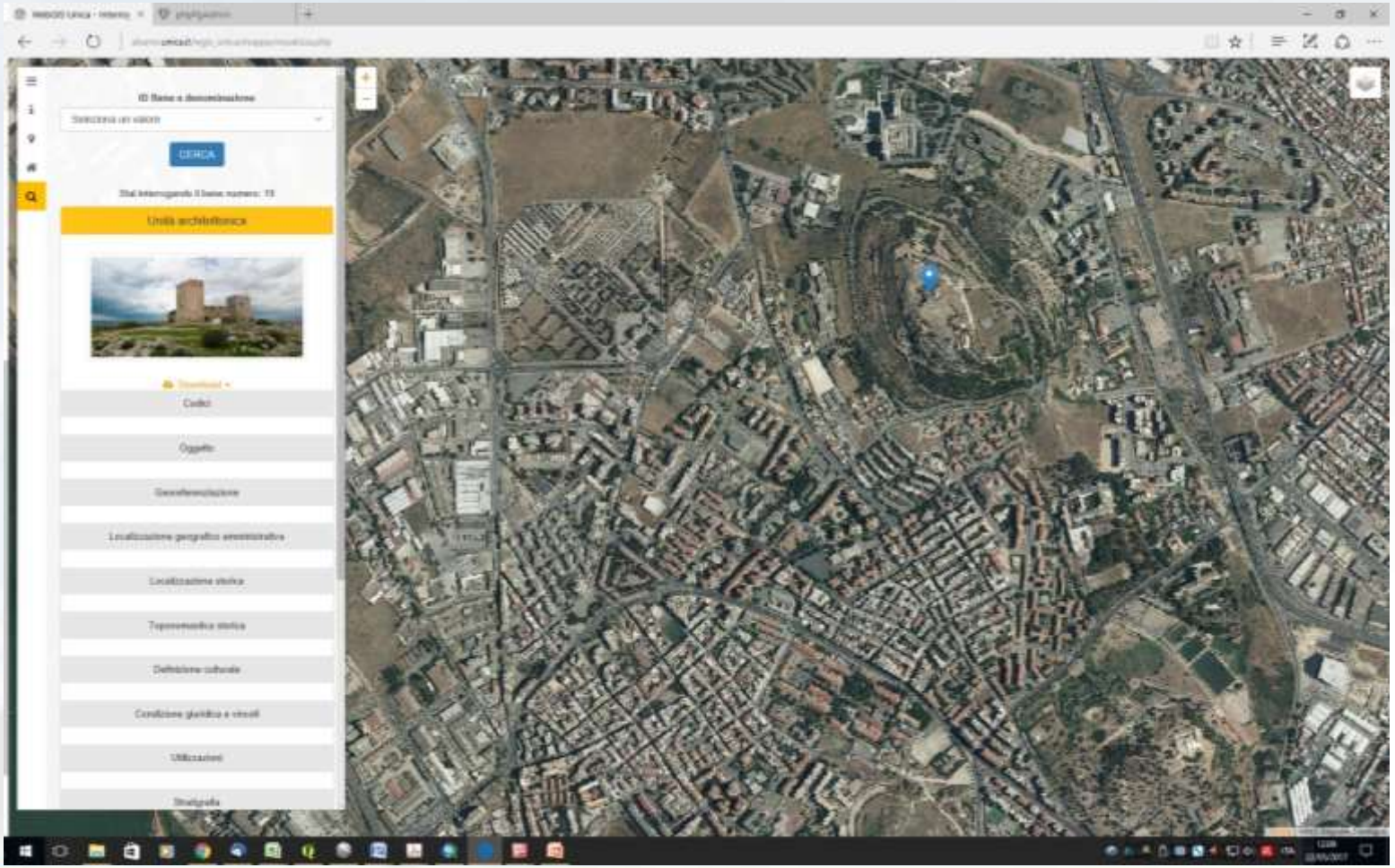
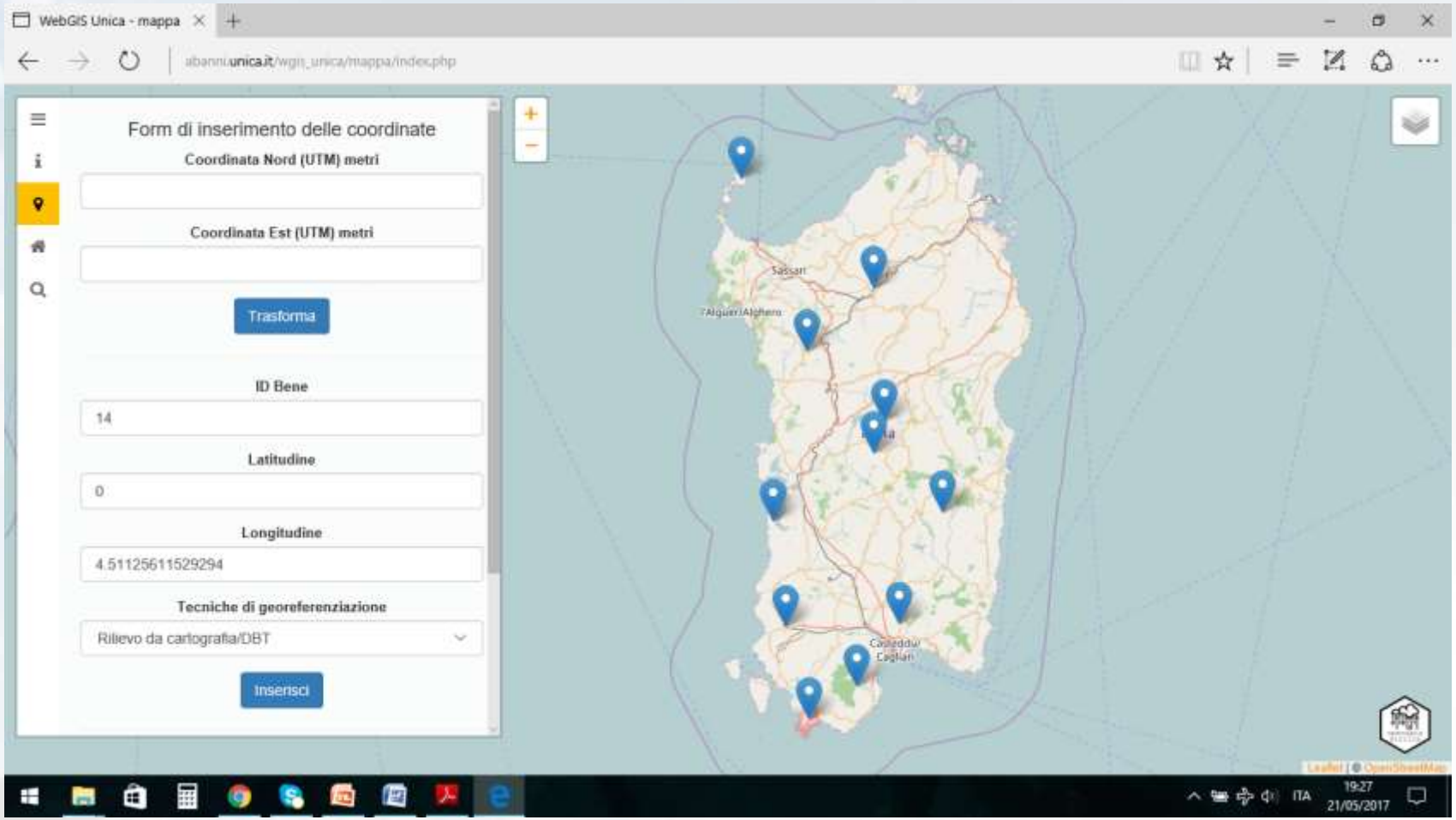
Tecniche di georeferenziazione
Georeferenziazione da orto
Conferma


CERCA
Unità archeltettonica
Codici
Oggetto
Localizzazione geografico amministrativa
Localizzazione storica
Definizione culturale
Utilizzazioni
Stratigrafia


WebGIS Unica - mappa
Form di inserimento delle coordinate
Coordinata Nord (UTM) metri
Coordinata Est (UTM) metri
Trasforma
ID Bene
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Longitudine
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Tecniche di georeferenziazione
Rilievo da cartografia/DBT
Inserisci
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Cagliari
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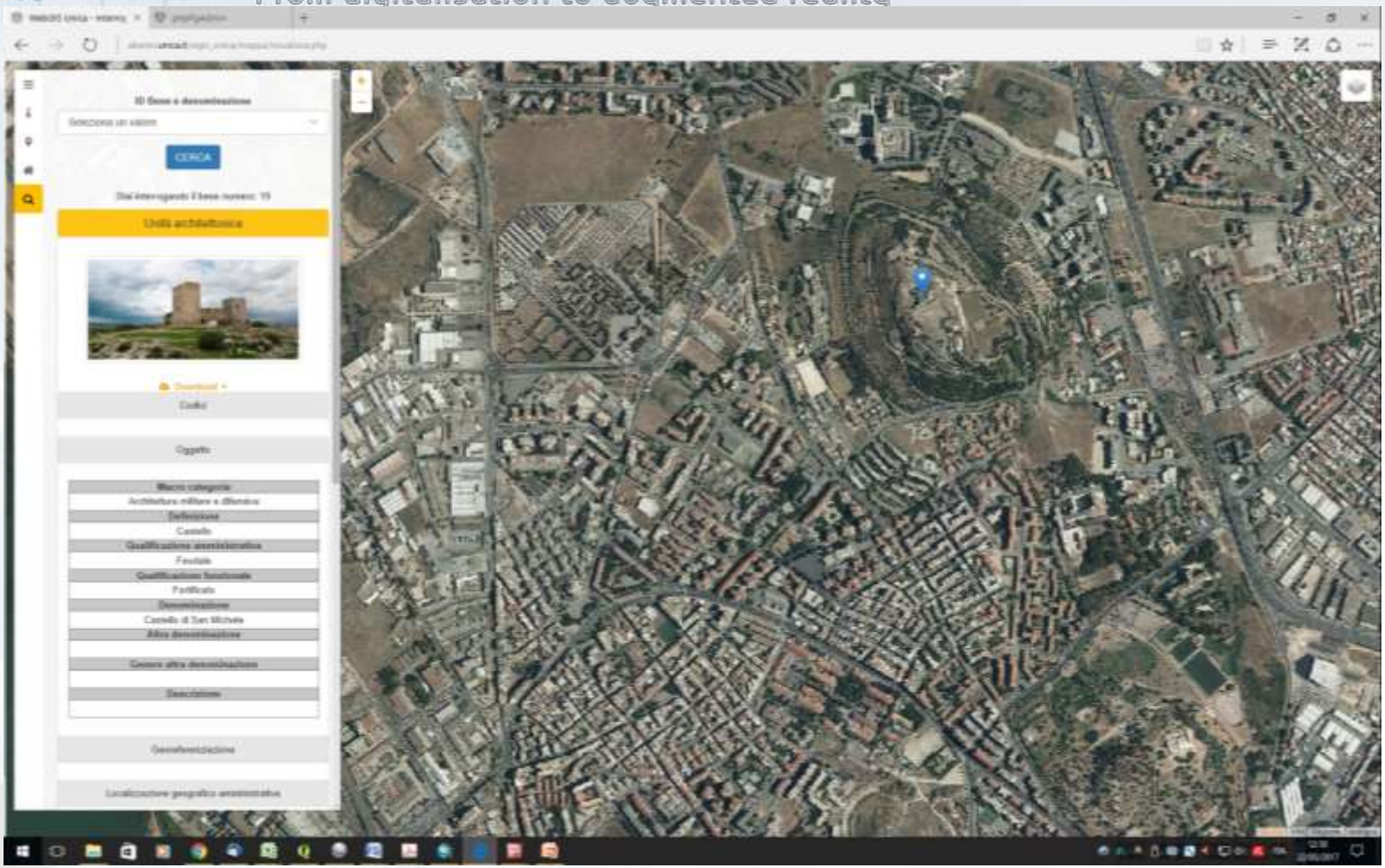
From digitalisation to augmented reality



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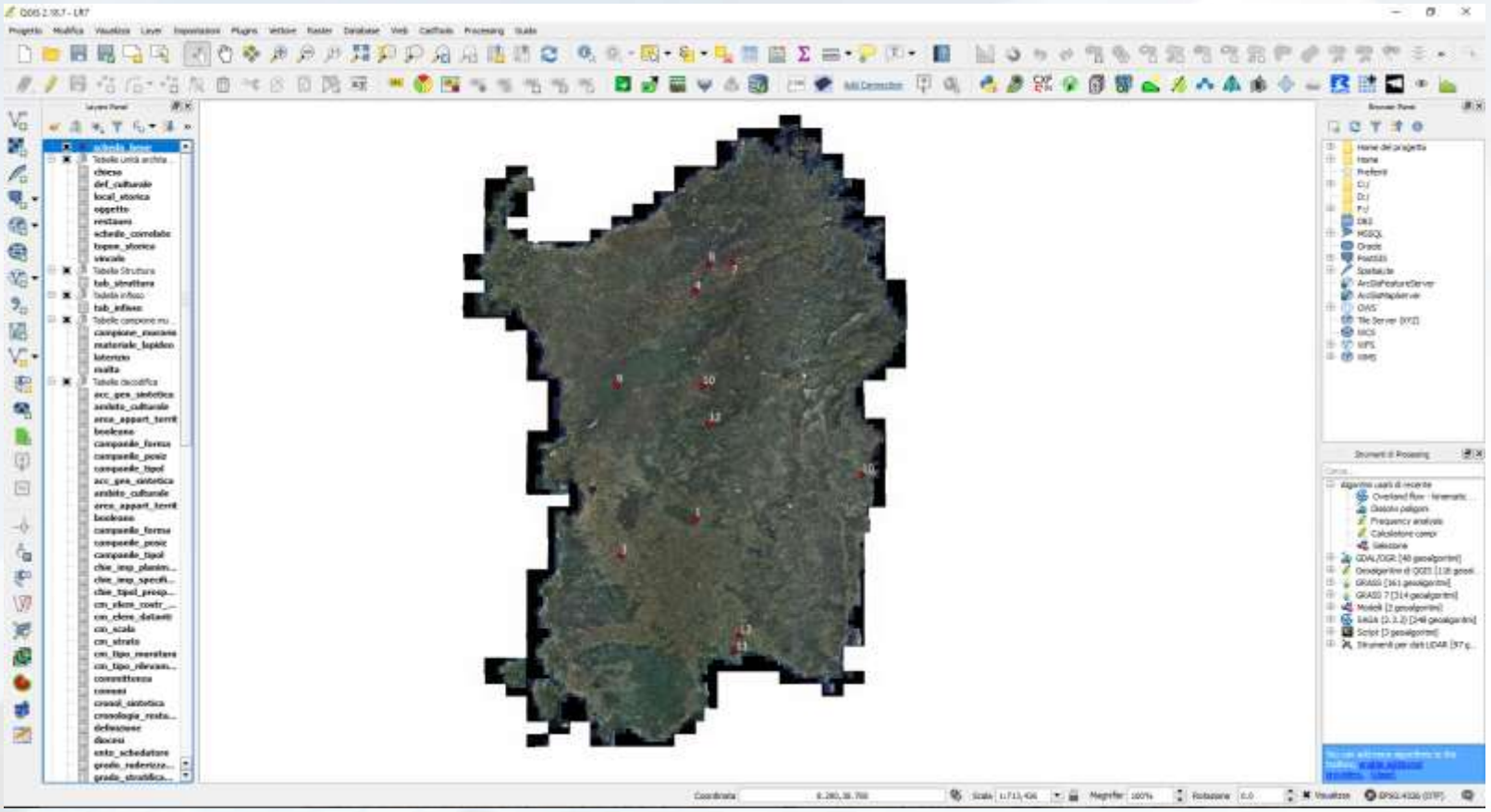
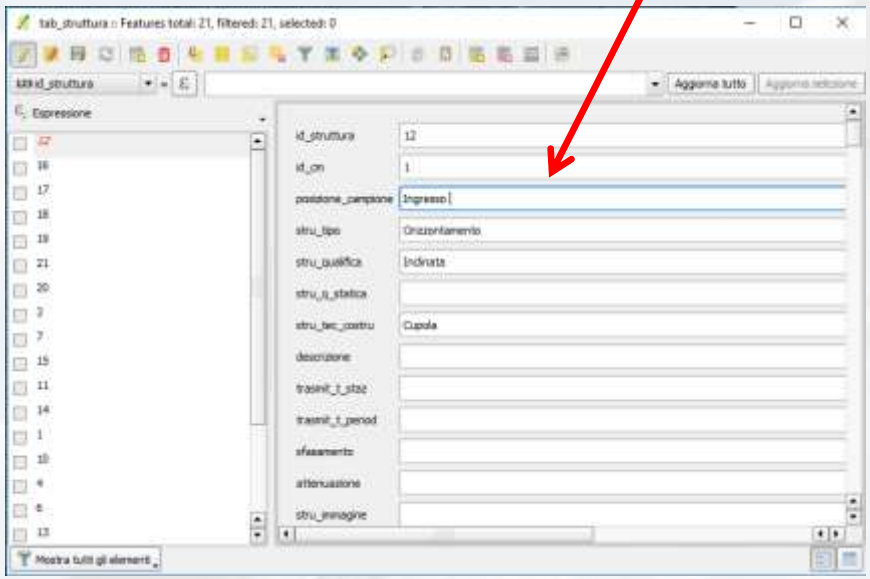
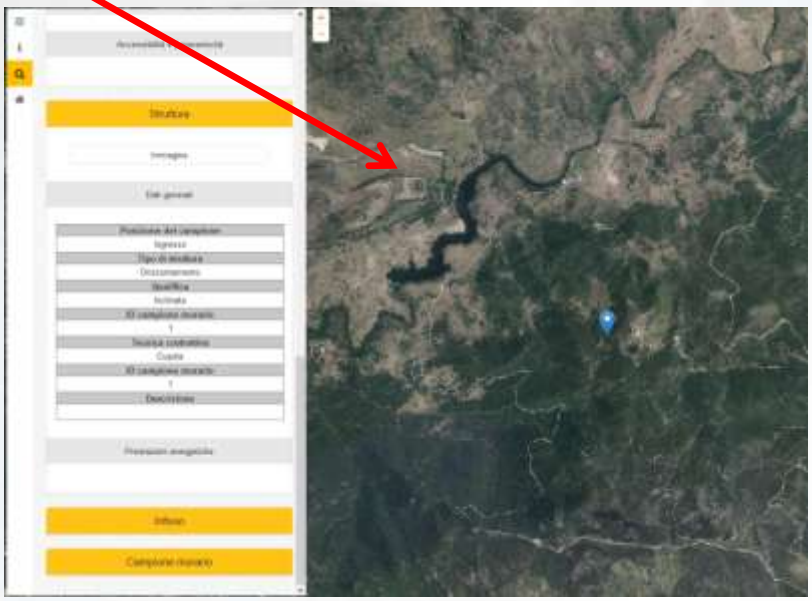
Implementation of the database in QGIS



Insert new data in QGIS from different users automatically the database is upload





At the present time we have uploaded the data of over 300 architectural units belonging to three main categories: military, religious and civil-residential. The samples examined on the architectural units, regarding the construction techniques, are over 150

The Database is visible at the web address

a.banni.unica.it/webgis_unica/

Future implementation

In the next months we are implementing the WebGIS in Geoserver to realize a Web Map Service to sharing our geodatabase with different users and different browsers and GIS Desktop software.

Conclusion

The work presented today is an integral part of a multidisciplinary research project for the study of buildings made in Sardinia between the 13th and 18th century.

This multi-disciplinary approach is the main strength of this infrastructure, which may become a very useful tool to reach a complete knowledge of the historical structures and contribute to define methods and techniques supporting the maintenance, conservation, consolidation, promotion and static an energetic improvement of this important building.

THANK YOU FOR YOUR ATTENTION