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

Giuseppina Vacca

D. Pili, D. R. Fiorino, V. Pintus

DICAAR, Dep. of Civil and Environmental Engineering and Architecture University of Cagliari (Italy)

vaccag@unica.it
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
The Masonry Sample
The WebGIS
The WebGIS
FIG WORKING WEEK 2017
Surveying the world of tomorrow - Helsinki Finland 29 May - 2 June 2017
From digitalisation to augmented reality
FIG WORKING WEEK 2017
Surveying the world of tomorrow - Helsinki Finland 29 May - 2 June 2017
From digitalisation to augmented reality

Form di inserimento delle coordinate
Coordinata Nord (UTM) metri

Coordinata Est (UTM) metri

Trasforma

ID Bene
14

Latitudine
0

Longitudine
4.51125611529294

Tecniche di georeferenziazione
Rilievo da cartografia/DBT

Insertisci
FIG WORKING WEEK 2017

Surveying the world of tomorrow - Helsinki Finland 29 May - 2 June 2017

From digitalisation to augmented reality
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