UNIVERSIDADE BEIRA INTERIOR

Safeguarding Portuguese traditional glazed tile cultural heritage with GIS

HERI-TECH 2020
Topic: ICT and Digital Heritage

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Framework

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2. Protection and safeguarding of Portuguese glazed tile cultural heritage
3. Heritage GIS-based tile inventory system
4. Case study: The city of Covilhã, Portugal
5. Conclusions

1. Introduction

The Portuguese word for traditional glazed tile is ***"azulejo"*** and derives from the Arabic "azuleicha", meaning 'small polished stone'.

Deeply embedded in Portugal's history and culture, there are countless valuable examples of traditional glazed tiles all around the country that are a significant part of the Portuguese cultural heritage and must be safeguarded and protected.

1. Introduction

Facade with glazed tile decoration
UBI, Faculty of Engineering | Covilhã, Portugal

1. Introduction

Aim

In order to contribute to the protection and safeguarding of the Portuguese tile heritage, the present study aims to ***establish the basis of a low-cost GIS-based system to allow the collection, inventory and manage of basic information on glazed tile coverings in different Portuguese municipalities***.

2. Protection and safeguarding of Portuguese glazed tile cultural heritage

Artistic glazed tiles, so permanently present in Portuguese daily life for centuries, generally are not valued by common citizens and institutions.

The result is neglect, needless glazed tile removing, demolitions of glazed tile covered buildings, vandalism, theft and glazed tiles with conservation needs.

2. Protection and safeguarding of Portuguese glazed tile cultural heritage

Despite their perceived durability and low maintenance requirements, the need to preserve traditional glazed tiles is urgent given their deterioration due to age and use.

Main promoters of Portuguese glazed tile cultural heritage:

- Joaquim de Vasconcelos (1849-1936)
- João Miguel dos Santos Simões (1907-1972)
- "SOS Azulejo" (2007 - today)

3. Heritage GIS-based tile inventory system

The proposed inventory system

is based on a GIS with a relational database whose records can be read in open source software (shapefile format).

The system combines the georeferencing of glazed tile works original locations (in ETRS89- PT/TM06), in line with the concept of integrated heritage, with several data forms, from alphanumeric data and images to web pages links.

3. Heritage GIS-based tile inventory system

The collected information relates with both the glazed tile and building history:

Building data	In situ glazed tile data
• **Location:** Country; Region; District; Municipality; Parish; Street and house number; Lon WGS84; Lat WGS84; X ETRS89; Y ETRS89; Z elevation • **SIPA:** Designation; Identification number; Link to SIPA data • **Property Type:** Public; Private • **Ownership** • **Case number at City Council** • **Typology:** Residence; Church; Chapel; Monastery; Panel, etc. • **Assignment / Occupation** • **Architectural style:** Dominant; Secondary • **Other decorative elements than tiles** • **Protection and conditioning:** Public interest; National monument; Municipal interest; Under study • **Building Condition:** Good; Medium; Bad • **Interventions chronology** • **Bibliography, drawings and documents** • **Accessibility by Public Transport**	• **Location:** Outside building; Inside building • **Construction period** • **Architectural style** • **Classification 1:** Coating, Ceramic panel • **Classification 2:** Facade; Patio; External staircase; Balcony; Wall; Wall panel; Small religious panel; Caption; Toponymical plate • **Classification 3:** Repeat composition; Pattern; Loose figure; Figurative; Ornamental • **Iconography:** Abstract, non-figurative art; Religion and magic; Nature; Human being, humanity; Society, civilization and culture; Abstract ideas and concepts; History; Bible; Literature; Classical mythology and Ancient history • **Monochrome or polychromatic** • **Objective and succinct tile description:** From general to particular: building, space, glazed tile and section. • **Material** • **Tile decoration technique** • **Composition dimensions (height x width)** • **Tile dimensions (height x width)** • **Authorship; Authorship nationality** • **Interventions chronology** • **Tile condition**: Good; Medium; Bad • **Pictures** • **Bibliography, drawing and documents**

4. Case study: The city of Covilhã (PT)

Covilhã Municipality 556,0 km²

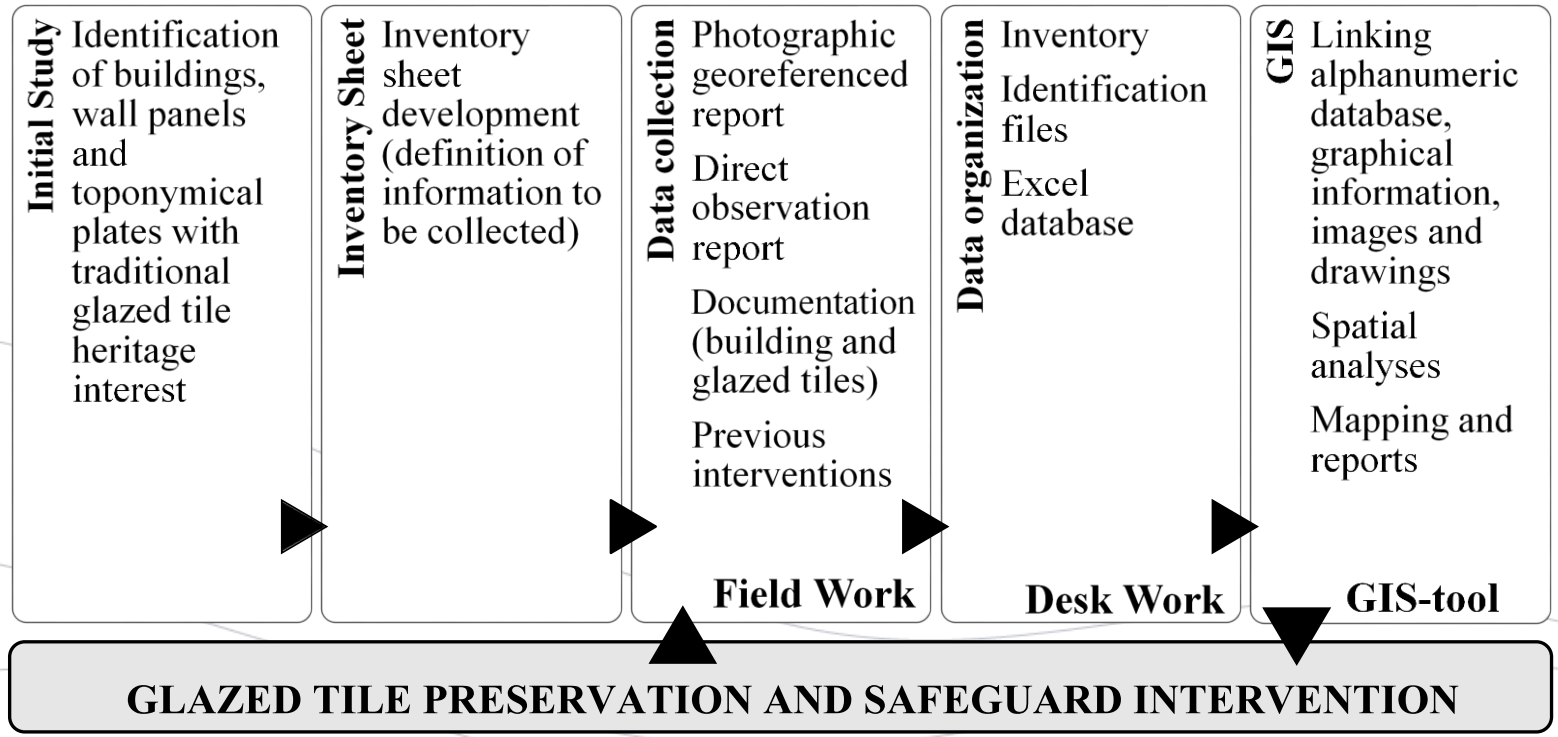
The municipality of Covilhã comprises approximately 50.000 inhabitants, most settled in the urban area along the hillside of *Serra da Estrela* mountain.

4. Case study: The city of Covilhã (PT)

A city ancient history marked by a golden period of textile industry boosted the emergence of industrial, religious and residential buildings of high architectural interest with tiled facades, mouldings or elements, many of them inspired in the architectural Art Nouveau style.

4. Case study: The city of Covilhã (PT)

Diagram of a GIS-based tool to support traditional Portuguese glazed tile heritage preservation and safeguard



4. Case study: The city of Covilhã (PT)

a)

b)

c)

Figure 1. a) Residential building *"Palacete do Jardim"*, by architect Ernesto Korrodi (1915); b) Industrial building *"Empresa Transformadora de Lãs"*, by architect Ernest Korrodi (20th century), Aleluia tiles, currently the University of Beira Interior Faculty of Engineering; c) Religious building "Church of *Santa Maria Maior*" (20th century), Aleluia tiles (1943)

4. Case study: The city of Covilhã (PT)

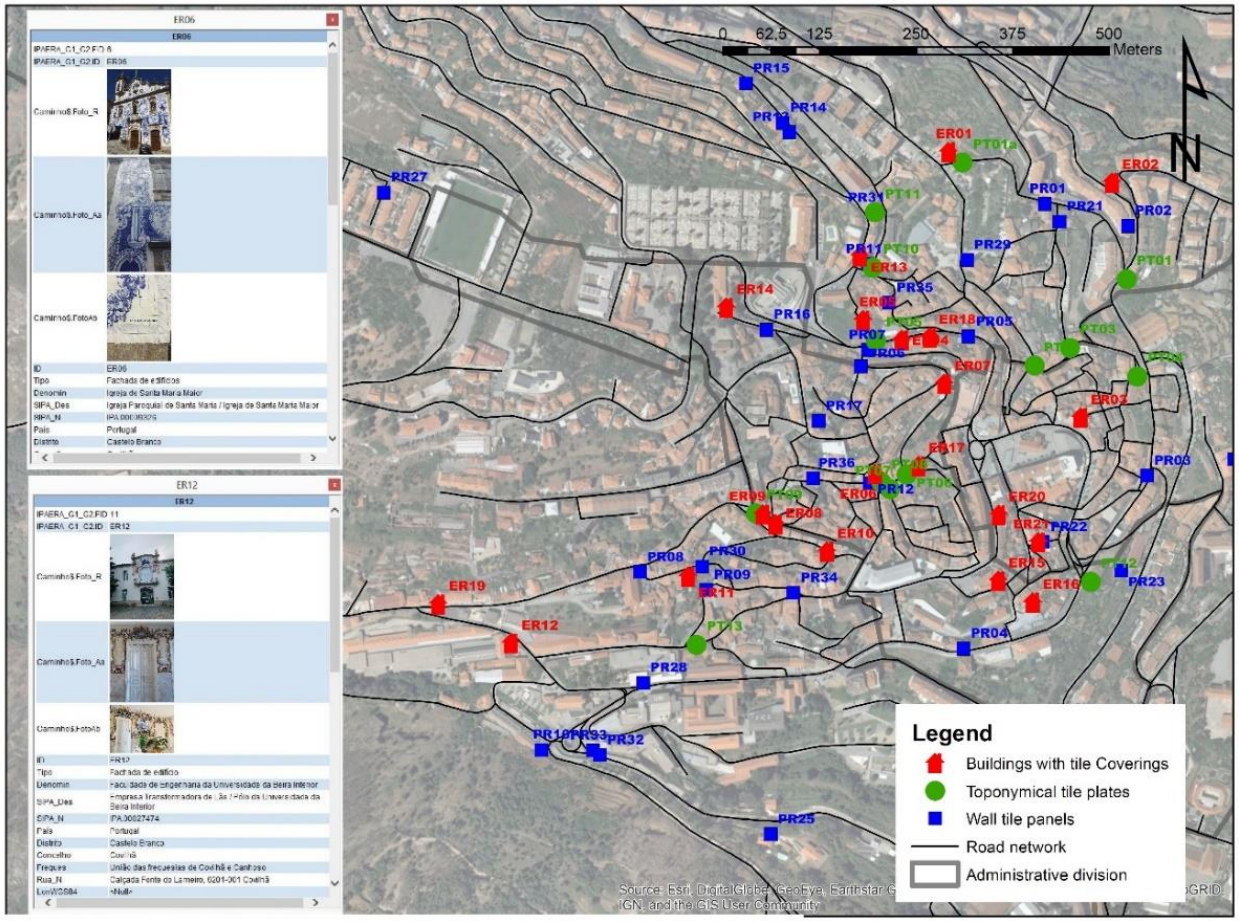
a) b)

Figure 2. a) Street toponymical plate "Rva de D. Cristovão de Castro"; b) Decorative wall tile panel with tourist marketing and promotion purposes, Covilhã.

Covilhã, Portugal

4. Case study: The city of Covilhã (PT)

Spatial distribution of glazed tile works considered in GIS-tool proof of concept with examples of alphanumeric and image data



5. Conclusions

- It is imperative to provide municipalities with tools that allow to properly collect and manage glazed tile related data.
- Glazed tile data must comply with existing national standards to enable it to be integrated into broader systems, such as national heritage inventory systems.
- Integration into international heritage inventory systems is expected to be more complex, however, several national initiatives seek to contribute to addressing this issue.

5. Conclusions

- The proposed system is adaptable for future changes and upgrades, allowing the connection to other existing databases through common building or glazed tile work identification code.
- The system allows the integration and coordination of different types of information and databases, the visualization of spatial location in dynamic maps, and the integration of different purposes, such as heritage preservation, intervention cost optimization or tourism promotion.

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