Location of ancient Roman temple in Portugal confirmed using Proceq GPR

Geophysical survey uncovers ancient history with remarkable findings

Overview

- University students and professors, from the University of the Algarve (UAlg) and the Philipps-Universität Marburg (UMR) set out to confirm suspicions of the temple of the ancient Roman forum of Faro.
- The Proceq GS8000 GPR was used as a non-invasive solution to carry out a geophysical survey.
- Existence and exact location of the ancient temple has now been confirmed with exciting observations.

In the town of Faro, Portugal, suspicions of an ancient temple have been circulating for centuries. The temple, which little is still known, dates back to the time between the 1st and 4th centuries AD and is said to have been part of what was the economic, political and social centre of the ancient city of Ossónoba, modern Faro.

Challenge

Until now, the only trace of the ancient Roman forum of Faro were black and white photographs documented in 1939 by archaeologists Abel Viana (1896-1964) and Mário Lyster Franco (1902-1984). If there were any remains of the temple left, they would be hidden underground. A team of Portuguese and German university students and professors, from the University of the Algarve (UAlg) and the Philipps-Universität Marburg (UMR) set out to uncover the mystery of the ancient temple using the modern technology of today.

Solution

A geophysical survey, carried out in collaboration and with the support of the Municipal Museum of Faro, took place using the GS8000 Ground Penetrating Radar (GPR) which allows you to take a "radiography" which gives detailed imaging of the underground. This method does not require any excavation. It is based on the sending and receiving of electromagnetic waves underground, in places where there are suspected of buried archaeological remains.

The results are viewed in real-time on the iPad, giving archaeologists immediate visualizations of what lies beneath. In this case, the measurements enabled the team to obtain a vision of what the building was like. Felix Teichner, professor at the University of Marburg reported to Barlavento News, Portugal, that its base "is relatively well preserved".

Results

Immediate views of the data showed the podium of the corner of the temple leaning against the archway of the Cathedral.



The data will also enable the team to better understand what the old public square (forum) of the Roman city of Ossónoba would be like, the area surrounding the temple where it is assumed that the first Christians and Muslims built religious buildings; predecessors of the current building of the Faro Cathedral.

For now, it is also known that, like the Cathedral, the facade of the Roman temple was facing the Ria Formosa and the then port of Ossónoba, functioning as a monumental business card for those who arrived by sea, something usual in the configuration of the port cities of the Empire.

"This is another small fragment in the great puzzle of urban archaeology in the city of Faro," said Felix Teichner.



In addition to the Cathedral, the work included investigating in other areas of the city. In Faro, the team tested the GS8000 GPR on a large land of closed access to the public, next to the place where a large mosaic depicting the god oceanus was discovered in 1976.

The piece is now one of the treasures of the Municipal Museum of Faro, which revealed the wealth of the houses of the elite of Ossónoba. Now it is intended to understand if the surrounding hides other structures.

The team also successfully used the GS8000 in the Roman village of Milreu, near Estoi, in order to investigate the unexcavated parts of the museum complex as well as sealed surfaces, to check if there are previous constructions hidden under the mosaics.



These actions are part of a project of cooperation and exchange of knowledge, of the Center for Studies in Archaeology, Arts and Heritage Sciences (CEAACP) of the University of the Algarve (UAlg) and the GeoALab (Geoarchäologisches Labor) of Marburg University, funded by the Foundation for Science and Technology (FCT) and the German counterpart agency DAAD, lasting until 2026.

The program focuses on the mobility and training of researchers and students in southern Portugal and Germany. It invests in targeted training to build the skills needed for reliable GPR acquisition, processing, and interpretation in Archaeology. Geophysics specialists lead interpretation while training archaeologists to apply best practices. The aim is to “spread” these techniques through short courses and field schools so they become standard tools in archaeological research across projects and institutions.

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