

Virtual Tour to Bracara Augusta

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Introduction

Bracara Augusta was one of the three urban foundations built by the emperor Augustus in the NW of Iberia at the end of the Cantabrian wars (19 BC). During the 1st century, the town became an important administrative and economic center, nurtured by a network of roads, since it was a key access point to NW, from the South of the country ^[1].

As early as 1976, a program of urban archaeological research started in Braga, at the Archaeological Unit of the University of Minho (UAUM). It involved the implementation of the »Rescue Project of Bracara Augusta«. Rescue and research excavations carried out in the last 24 years provided a considerable amount of data related to

urbanism, architecture and social and economic life of the town.

Despite a steadily increasing public interest in the past, the archaeological record is still not easy to comprehend for non-specialists.

The project »Virtual Tour to Bracara Augusta« aims to convey some of the archaeological records to non-specialist users by applying multimedia technology and adequate visualization paradigms and tries to create a maximum level of information expressiveness. This project aims to provide:

- The dissemination of Braga's history and heritage
- A contribution to the improvement of the citizen's heritage conscience
- An improvement of the cultural activity in the city.

German Abstract

Bei »Virtual tour to Bracara Augusta« handelt es sich um ein Projekt, welches in Zusammenarbeit mit dem Fachbereich Archäologie der Universität Minho (UAUM) für die Fundação Bracara Augusta durchgeführt wird. Ziel des Projektes ist es, ein interaktives Multimedia-Informationssystem zur Darstellung, Analyse und Interpretation wissenschaftlicher archäologischer Daten über die antike römische Stadt Bracara Augusta zu entwickeln. Das System stellt ein Navigationsschema zur Verfügung, welches auf einer virtuellen Tour durch Bracara Augusta basiert und es den Benutzern (auch solchen ohne besondere archäologische, historische und/oder technische Vorkenntnisse) erlaubt, virtuelle Rekonstruktionen antiker römischer Gebäude zu besichtigen, einen Einblick in die damals sehr fortschrittliche Bauplanung und -technik zu bekommen, die Geschichte und den Verlauf der archäologischen Ausgrabungen und Entdeckungen kennenzulernen, oder einfach nur einen Überblick über die alte römische Stadt und ihre Zusammensetzung zu erhalten.

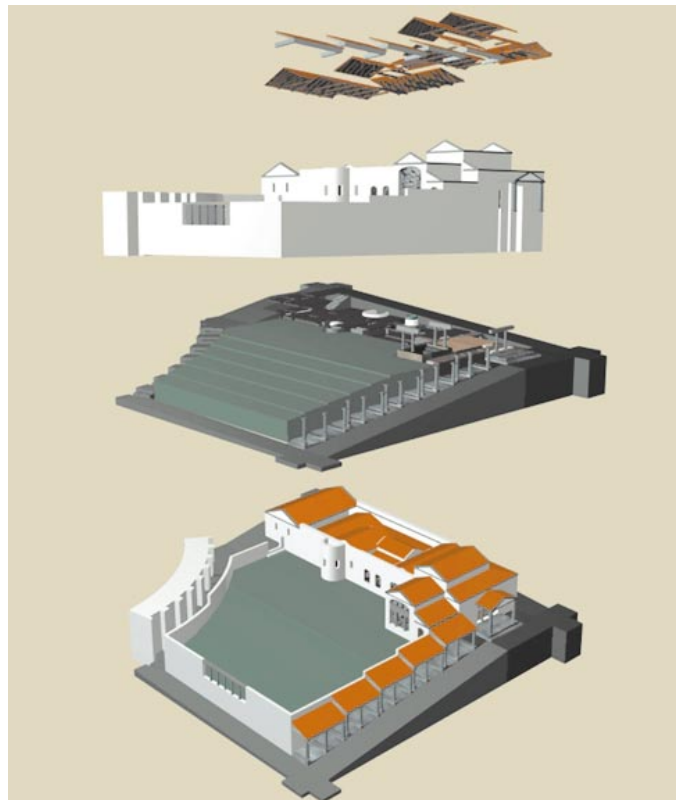


Figure 1:
Reconstruction of
the Roman Baths



Figure 2: Another aspect of the Multimedia Information System: the Reconstruction of a Roman Room

The »Virtual Tour to Bracara Augusta« project is being developed by the UAUM – Multimedia Laboratory and CCG for the Bracara Augusta Foundation. It provides an interactive multimedia information system that facilitates the access to a scientific data analysis and archaeological interpretations concerning the old roman city of Bracara Augusta for the common user. This information would otherwise remain confined to a restricted group of specialists.

The Virtual Reconstruction

The entire virtual reconstruction process of Bracara Augusta (BA) involves several stages. The first step implies the recreation of BA's terrain model. It is based on the terrain information managed by SIABRA – Bracara Augusta's Archaeological Information System ^[2] – and on older city maps. We modeled the terrain not only corresponding to the city area, but also to the surrounding areas.

The virtual reconstruction of Roman structures involved an application of constructive solid geometry modeling techniques. After creating the ground level, the inner and outer walls were designed, as well as the pillars and the columns of the buildings.

The final step of this virtual reconstruction was the planing of the roof. The 3D models of the buildings show the entire roof structure, and it is possible to observe some Roman construction techniques. This modeling task is,

naturally, based on the very precise information available on Roman architecture and on the information of SIABRA. Figure 1 shows an example of the virtual reconstruction of Bracara Augusta's Roman Baths.

Multimedia Kiosks

The support platforms for the Multimedia Information System are Multimedia Kiosks that are made available to the public along the main streets of Braga City. Four kiosks will be set up until the end of the project, later this year. These kiosks are a kind of information window into the past, specially conceived to be managed by people without technological background.

The Multimedia Information System has been developed based on a structure tree divided into four main subjects, called the »Virtual Reconstruction of Bracara Augusta«. It is the most important one in terms of provided information because it integrates much of the complex and impressive multimedia elements implemented.

Here, one example of a private Roman House (the house of Carvalhoeiras), a public Roman building (the Roman Baths) and the first essay of the entire virtual reconstruction of Bracara Augusta is presented and can be visited in detail. Other subjects are:

- Research History – the emphasis here lies on the history of 24 years of Archaeological Research and Rescue.

- Planing of a Roman City – the common procedures for the planing of a Roman city.
- Artefacts of the City.

Multimedia Design

Multimedia requires concurrent creative thinking and development on several and different levels, i.e. interface design, user interaction, information design and interactivity design.

The BA Kiosk design was created to simulate the perception of a virtual tour imitating colors and shapes of the Ancient Roman Empire. Sounds and animations (sound battles, maps) were developed to integrate people in this ancient age.

On the other hand, most of the texts are presented along with their related voiced versions and, mixed with other sounds and music, altogether prove to considerably augment the attractiveness of the entire Multimedia environment for the end-users.

Finally, we would like to stress that this project was made possible due to a multi-disciplinary approach, bringing together archaeologists, architects, computer scientists and multimedia designers.

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References

^[1] Martins M. 1999, A urbanização do NO peninsular: o caso de Bracara Augusta, in Actas do Colóquio As Cidades do Norte da Península, Tongobriga (currently being printed).

^[2] Giestal C. D. 1998, Sistema de Informação Geográfica para a Arqueologia Urbana: O caso de Bracara Augusta, Master thesis in Archaeology, Braga.