

OUTPUT T3.5

Pilot Action (P13)

Bononia (Bulgaria)

Title Increasing the Visibility of the
Roman Danube Limes

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1. Introduction

This paper attempts to bring together the efforts and experiences that have been recorded and developed on the platform of Living Danube Limes project to increase their visibility and transmission. It focuses on the pilot sites that were defined as part of the project and form the framework for further activities: (listed downstream of the Danube): Gunzenhausen (Germany), Comagena/Tulln in collaboration with Cannabiaca/Zeiselmauer (Austria), Iža (Slovakia), Matrica/Százhalombatta (Hungary), Ad Labores/Kopačevo (Croatia), Lederata/Ram (Serbia), Bononia/Vidin and Sacidava (Romania).

2. General Information on the Pilot Site

Bononia (Vidin, Bulgaria) is located near the Danube bank and was part of the cities and fortifications of the Roman Danube Limes. It is believed that the name origins from the Latin word “bonus”, which means “good”. Although known by the Roman historical sources, Bononia hasn't been truly explored so far and the excavations of the Roman site are still ongoing¹ with participation of archeologists from Regional History Museum of Vidin under the supervision of National Archaeological Institute with Museum (Bulgarian Academy of Sciences).

The site is one of the largest centers of the Roman Empire along the Lower Danube limes. The fortress arose as a military camp in the 1st century, when the First Cisipadensium cohort was stationed here.

Bononia's greatest extension is believed to be associated with the withdrawal of the Roman colonizers from the province of Dacia and the formation of the province of Dacia Ripensis (272 AD, under Aurelian).

By the end of the 2nd and the beginning of the 3rd century, Bononia was already a significant settlement. During the time of Emperor Constantine I the Great (307-337), the city was fortified with the most powerful fortress system known in the Bulgarian lands, which turned it into one of the major urban centers of the newly formed province of Dacia Ripensis.

Between the 4th and the 6th centuries, the main entrance to the city of Bononia was through the Western Gate. From this Gate ran the “Decumanus Maximus”, the main street of the town. Nowadays, it crosses the entire living area of Kaleto in the town of Vidin.

The Western gate of Bononia was discovered in October 2020 when the base of the Gate was reached at almost 5 m depth. The Roman military and civil center are fortified with the most powerful defensive system on the Danube bank. Excavations revealed that the fortress has a rectangle shape, extended in a north-south direction, with an area of about 20 ha:

- Nine decagonal round towers with a diameter of around 25-30 m and a wall thickness of 3.7 m were discovered.
- The 10th tower is associated with the defense of the Western Gate of Bononia.
- The walls of the fortress are approximately 4 m wide, and the passage of the western gate is over 5 m.
- The length of the northern wall is about 365 m, and about 600 m for the western one.

¹ As of 12.2022

Bononia was an auxiliary fort at the time of the Flavians and emperor Trajan. The military unit located here probably was ala I Cisipadensium, for which historical data are available.

In Late Antiquity, Bononia develops further. At the time of Emperor Constantine, I the Great, a cavalry unit was stationed here: Cuneus equitum Dalmatarum Fortensium.

“Today, Bononia is the archaeological site along the entire Danube bank of the Roman Empire in the Bulgarian lands, which has the most representative and most powerful remains. Only here the wall is 4 meters wide, and the fortress towers are decagonal (diameter 25-30 meters). The findings from the Bononia fortress are impressive. Among them stands out the bronze head of Emperor Nero, discovered by J. Atanasova during rescue excavations in the 60s.”²

“Vidin/Bononia – Early and Late Roman auxiliary fort; Early Byzantine fortified city” is included in the UNESCO's Tentative List of the World Heritage Sites since 31.01.2020, being one of the component parts of the „Frontiers of the Roman Empire – The Danube Limes (Bulgaria)“.



Image 1: Western gate of Bononia, Vidin. G.Jordanov, NTC BG Guide

3. Documentation of Selected Visibility Measure(s) Implemented On-Site

The identified part of the pilot site is focused on the Western Gate of the Fort Bononia, located in the centre of the town of Vidin in a densely populated area, in the “KaletO” neighbourhood. The terrain of the pilot site is built with low vegetation which is being cut. It’s accessible and could be easily discovered if there are appropriate signs and information.

² Dimitrov, Zdravko, Assoc. Prof., “Bononia - Roman military camp and fortress on the Danube road”

Within the Living Danube Limes project this issue was targeted, namely, to reveal information about Bononia, both in Bulgarian and in English, targeting local communities and foreign visitors of the town of Vidin, giving them also the opportunity to scan the VR code and explore the 3D VR reconstruction of the site. Such VR model is a first of its kind for the Vidin Roman heritage in general, and for Bononia fortress in specific, since no such interpretation models are displayed on site.

The Virtual reconstruction of the pilot site of Bulgaria consists of 3D model of the outer fortifications and gates of the Roman fort with its surroundings. The model was created by 7 reasons with cooperation with Ludwig Boltzmann Institut für Archäologische Prospektion und Virtuelle Archäologie (LBI ArchPro), which provided the input materials from geophysical prospecting.

The 3D model is delivered on the project's shared cloud in highly versatile and editable FBX format with embedded textures and baked lighting. This format could be edited by the wide range of 3D modelling software and can be viewed by the pre-installed 3D viewer on the Windows 10 – 11 operating systems.



Image 2: Virtual reconstruction of Vidin in 3D viewer. Source: LBI ArchPro, 7reasons

This will allow visitors to discover Bononia in its original shape and to understand more about its history through time. The 3D model will also complement the ongoing archeological excavation work at the Western gate, which will reveal to visitors much more secrets and stories about the Roman legacy in Vidin.

In order to implement and present the VR model in a convenient way that would attract visitor attention and increase the visibility of the pilot site, NTC BG Guide conducted several consultations and an online survey with representatives of Regional History Museum of Vidin

and Municipality of Vidin, as well as with various stakeholders (refer to D.T.3.2.2 Identification of Visibility Measures and D.T.2.3.2 Implementation of virtual reality reconstructions on pilot sites – Bononia/Vidin)/

Based on the results from the surveys and the workshop, the installation of visibility measures was realised in two stages. The first stage included installation of information boards in various sizes at key locations and the second stage included the installation of a tailor-made for the purposes interactive 43' kiosk (InfoDart) with installed Living Danube Limes application. The following visibility tools were developed and installed in several locations:

- Information boards (4 x 3 m) with bilingual information about Bononia, with the 3D panorama and QR codes of the 3D VR. One of the boards is located in front of the Western Gate of Bononia, the other in front of Baba Vida Fortress at the most visible and visited by visitors' location.
- Interactive 43' kiosk, forming the "Danube Limes VR Corner" at the premises of the Regional History Museum of Vidin, displaying the Living Danube Limes application, with a QR code for the 3D panorama of Bononia.

Newly designed information boards were created for the project highlighting the:

- 3D VR panorama of Bononia
- information about discovering Bononia in English and in Bulgarian
- curious facts about Bononia in English and in Bulgarian
- the Virtual Reconstruction of Bononia can be reached by a QR code
- the website of the Living Danube Limes project can be reached by a QR code

The participants of the placement of the VR Boards (at the very beginning of the Roman Festival "Bononia Comes to Life" held on 1st October 2022 in connection to the arrival of the lusoria "Danuvina Alacris"):

- PP's of Living Danube Limes Project (NTC BG Guide, CHI, ADRM-Danube)
- ASP's of Living Danube Limes Project (RHM-Vidin, Mos Maiorum)
- Representatives of Municipality of Vidin, City Hall of Novo selo, Municipality of Lom, etc.
- Reenactors taking part at the Festival
- local stakeholders and citizens of Vidin
- foreign tourists from the ship cruise/s.



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ОТКРИЙТЕ БОНОНИЯ

Бонония е един от най-големите центрове на Римската империя по Долния Дунавски лимес. Крепостта се развива от военен лагер, установен през I-VI в., когато Първа Ципиладянска кохорта е разквартирувана там.

Предполага се, че най-бурното развитие на Бонония се случва след изтвървяването на римските колонисти от провинция Дакия и формирането на провинция Крайбрежна Дакия през 272г., по времето на император Аврелиан.

В края на II-ри и началото на III-ти век, Бонония е вече значимо селище. По времето на император Константин I Велики (307-337г.), зградът е укрепен с най-здравите фортификации, които могат да се дебателат по днешните български земи. Тези съоръжения в прехвърщат в един от големите градски центрове на новосформираната провинция Крайбрежна Дакия.

ЗНАЕТЕ ЛИ, ЧЕ?

Между IV и VII век, главният вход на римския град Бонония е бил Западната порта. От тази порта се разполага до омаврес Максимус ("остатъците на мост"), главната улица на града днес. Този улица пресича целия Иберийски Канал във Видин.

Обектът "Бонония – ранно и късноримско спомогателно укрепление; равновизантийско укрепление" е включена в Риндиканата листа за включване в Списъка на световното културно и природно наследство на ЮНЕСКО.



КРЕПОСТТА БОНОНИЯ

Този римски военен и градски център е укрепен с най-мощните защитни съоръжения на брега на Дунай. Прочуваната разкриват, че крепостта е имала правоъгълна форма и е била разположена в посока север-юг на площ около 20 хектара:

- Разкрити са девет десетолъчни обвали кули с диаметър от ок. 25-30м. и стена с дебелина от 3,7м.
- Десетата кула е свързана със защитата на Западната порта на Бонония.
- Стените на крепостта са приблудително с 4м. дебелина, а при Входът на Западната порта – над 5м.
- Дължината на северната стена е ок. 365м, а на западната ок. 600м.

РИМСКИ ВОЕННИ ПОДРАЗДЕЛЕНИЯ

Бонония е била спомогателно укрепление по времето на Олавианата династия и на император Траян. Военното подразделение, дислоцирано тук, е било най-бурното Първа Ципиладянска кохорта, за което има исторически сведения.

През късната античност Бонония продължава да се развива. По времето на император Константин I Велики се разполага и конно сединение - Cuneus equitum Dalmatorum Fortensium.

През V-VI в. Бонония е погълната на разрушителните нашествия на хуни и авари, но е възстановена и продължава да съществува и през Средновековието, когато българите построят крепостта Един.

В края на XIV в., по време на Втората българска държава, Един става център на Видинското царство, управлявано от цар Иван Срацимир.

DISCOVER BONONIA

Bononia is one of the largest centers of the Roman Empire along the Lower Danube limes. The fortress arose as a military camp in the 1st century, when the First Ciapadensium cohort was stationed here.

Bononia's greatest extension is believed to be associated with the withdrawal of the Roman colonizers from the province of Dacia and the formation of the province of Dacia Ripensis (272 AD, under Aurelian).

By the end of the 2nd and the beginning of the 3rd century, Bononia was already a significant settlement. During the time of Emperor Constantine I the Great (307-337), the city was fortified with the most powerful fortress system known in the Bulgarian lands, which turned it into one of the major urban centers of the newly formed province of Dacia Ripensis.

DID YOU KNOW?

Between the 4th and the 6th centuries, the main entrance to the city of Bononia is built through the Western Gate. From this Gate ran the "Decumanus Maximus", the main street of the town. Nowadays, it crosses the entire living area of Rakovo in the town of Vidin.

"Bononia – early and late Roman auxiliary fortification; Early Byzantine fortified city" is included in UNESCO's Tentative List of the World Heritage Sites.

BONONIA THE FORTRESS

The Roman military and civil center are fortified with the most powerful defensive system on the Danube bank. Excavations revealed that the fortress has a rectangular shape, extended in a north-south direction, with an area of about 20 ha:

- Nine decagonal round towers with a diameter of around 25-30 m and a wall thickness of 3.7 m were discovered.
- The 10th tower is associated with the defense of the Western Gate of Bononia.
- The walls of the fortress are approximately 4 m wide, and the passage of the western gate is over 5 m.
- The length of the northern wall is about 365 m, and about 600 m for the western one.

ROMAN MILITARY FORCE

Bononia was an auxiliary fort at the time of the Flavians and emperor Trajan. The military unit located here probably was I Ciapadensium, for which historical data are available.

In Late Antiquity, Bononia develops further. At the time of Emperor Constantine I the Great, a cavalry unit was stationed here: Cuneus equitum Dalmatorum Fortensium.

In the 5th and 6th centuries, Bononia experienced devastating invasions by Huns and Avars, but was restored and continued to exist in the Middle Ages when the Bulgarians built the Vidin fortress.

During the Second Bulgarian Kingdom, end of 14th century, Vidin became the center of the Vidin Kingdom, ruled by Tsar Ivan Sratsimir.

Проектът е съфинансиран от фондовете на Европейския съюз (ЕФРР, ИПП и ЕИС).

Image 3: Design and text of the info boards, NTC BG Guide

The information boards are located in several locations in the town of Vidin (at the Western Gate of Bononia and in front of Baba Vida Fortress) providing offline and online visibility for the VR on the Pilot Site for the public, tourists and visitors of the town of Vidin. The QR codes disseminated in several other locations enhance the visibility of the site even more, because these are tourist attractions and a must-see-sites in the town of Vidin: Baba Vida Fortress, Art Gallery, Konaka Museum, Krastata Kazarma Museum, Epigraphic Centre, etc.

The selected visibility measures guarantee dissemination of information about Bononia in a sustainable way, reaching out the widest spectrum of target groups (young people exploring the 3D VR through their mobile phones/other devices, older generations reading about Bononia and seeing the VR panorama on the board and all those who are interested in the Roman history and heritage to explore further the Living Danube Limes application (incl. foreign visitors of the town of Vidin). The size of the boards allowed their placement in several locations in a harmonious and sustainable way with the environment.



Image 4: Information Board at Western Gate of Bononia with 3D panorama and QR codes (NTC BG Guide)



Image 5: Information Board in front of Baba Vida Fortress



Image 6: Small information Board at the Western Gate of Bononia



Image 7: Small information Board (A1 format) at the Entrance of Baba Vida Fortress (Visitor Centre)



4. Visibility Workshop

The workshop entitled “Bononia – Reviving the past through virtual reconstructions” provided interaction between project partners, associated partners, local authorities, representatives of cultural centers and other local stakeholders in looking for the best possible ways to present the Bulgarian pilot site with the 3D virtual reconstructions already developed within the project. Held on 30th June 2022 in Vidin, within the DANURB+ Regional Conference „Creative Danube: Connectivity – the key to overcoming the shrinkage“, after the Living Danube Limes Local focus group, the workshop was attended by 27 participants who actively took part in the discussions.

Participants agreed that one of the most important steps is to have informative sign/s or billboard/s at the findings of the Western Gate of Bononia, in the town of Vidin and other cultural heritage sites, providing information about Bononia as a Roman fortification. An interpretative text for the 3D visualization could be available in Bulgarian and in English, also having the QR code to be scanned and used by locals and visitors of the town of Vidin. Information kiosk or other interactive tool might be placed at the premises of the Museum, providing information about Bononia to locals and visitors of the town of Vidin.

At the workshop we analyzed the state of the visibility measures needed in short- and in long-term, and the visitors' reactions in the debate. Billigual information boards with information about Bononia and the VR panorama turned out to be a great option. During the workshop the possibilities of individual participants as well as the usual technological possibilities of mobile technology were checked (by testing the 3D VR reconstruction of Bononia).

5. Virtual Reality Reconstruction and 3D Models

In parallel with the implementation of the VR on the site a “Danube Limes VR Corner“ was formed at the premises of the Regional History Museum of Vidin through the tailor-made Interactive 43’ kiosk. It displays the Living Danube Limes application, and the VR models can be reached by various technology tools. The kiosk provides the opportunity for gaining further knowledge about the Danube Limes and the Roman heritage, as well as to the various VR reconstructions of other Limes sites.



Image 9: Testing of the interactive kiosk, Living Danube Limes App and VR reconstruction of Bononia

6. Interplay between the 3D Models and Physical Visibility Measure

The 3D model of Bononia is used to attract visitors' attention, as well as to disseminate information about the Roman history. QR codes of the virtual reality reconstruction of Bononia are placed in various key locations and heritage sites in Vidin, thus attracting more attention. The design process of one of the selected visibility measures – the information boards - that provide a physical visibility measure on the site is based on the VR reconstruction of Bononia. On the other hand, the interactive kiosk forming the “Danube Limes VR Corner“ at the Regional History Museum of Vidin is expected to become attraction of the museum, being also a tool for the 3D virtual visualisation of the Bononia fortification system.

7. Further Project Initiatives and Activities Fostering the Visibility of the Pilot Site

Living Danube Limes events and initiatives that enhanced the visibility of the pilot site were the two focus groups, as well as the several pilot sites visits, the visibility workshop and testing of the VR. Large-scale events, such as the Late Antiquity Roman Festival “Bononia Comes to Life“, as well as the arrival of “Danuvina Alacris“ and meeting the international team of rowers further boosted the visibility of the selected pilot site. This was the concept designed by NTC BG Guide for Bononia in a short-term. The long-term plan includes further promotion of the site in parallel to the most recent findings and the created (Living) Danube Limes Museum Cluster network.

8. Existing Synergies Capitalised and New Synergies Generated

Due to the Living Danube Limes project the story of Bononia was further revealed to citizens and visitors of the town of Vidin. The visibility measures will contribute to the promotion of the Roman heritage in a sustainable way. The Late Antiquity Roman Festival “Bononia Comes to Life“ created a model for events with re-enactment elements (such as Roman tools and equipment, Roman games, Roman battles and liturgies, etc.) in this region of Bulgaria.

9. Feedback of Participants

The visibility workshop participants appreciated the opportunity to discuss and test the VR reconstruction of Bononia and to contribute with ideas and inputs about the most suitable visibility measures. During the Late Antiquity Roman Festival, the Mayor of the town of Vidin appreciated the contribution to the development of Vidin as a Roman heritage destination.