

OUTPUT T2.2

Pilot Action (P17)

Report

Title Output T. 2.2
Pilot Actions for preserving and management of natural and cultural heritage and resources developed and/or implemented

Date September 2022

Venue Ram Lederata,
Viminacium Archaeological Park

Implementing partner(s) PP17 IAB
Institute of Archaeology

PP18 FTN
Faculty of Technical Sciences, Department of
Architecture and Urban Planning

Name of Pilot site Ram - Lederata (Serbia)

Project ID DTP3-1-359-2.2

General description:

The archaeological site Lederata, Auxiliary fort and river crossing is one of the largest and most important strongholds on the Danube Limes in Serbia. Together with the nearby Ram fort (Roman road and rock inscription below the Turkish fort) it is a unique archaeological complex that is on the UNESCO Tentative list for the extension of the already inscribed property Danube Limes.

Site covers the wide period from Prehistory to the Middle Ages and is historically related to several sites in the vicinity and adjacent municipalities. Its connection to the Danube, importance of Ram River crossing enormously adds to the site importance.

Dual complex of the Lederata fort and Roman road with rock curved inscription below the Ram fort are among the most prominent site clusters of the Serbian UNESCO Limes nomination.

Although Roman fort covers only one part of the hill, settlement, cemetery, and Celtic oppidum are much larger and cross to the adjacent hills spreading to far wider area that is potential for future archaeological research.

But remoteness of the site from larger cities, hard access and lack of asphalt roads all influenced that site is not popular for visits, was not systematically excavated and not in active presentation. Most important excavations were done between 1983 and 1990, 2012 and 2020.

Walls that were not conserved after these excavations are in a bad shape. Focus was placed on conservation of towers, but buildings in the interior are not in presentable state and need urgent attention. For this region covering of archaeological remains is very important and protective constructions provide advanced possibilities for both presentation and protection. Nearby Viminacium Archaeological Park is the best example for use of these constructions and their functionality in this region and its climate conditions.

Site is safe from flooding, there is only a limited erosion, but major problem is identified in strong winds and systematic looting that is seriously damaging cultural layers. Problem with looting is long lasting and so far only forming of archaeological parks and development of tourism was solution to this problem (example of Viminacium that had similar situation until formation of the Archeological Park). Advantage for the site its presentation and all needed interventions is that complete hill – the core of the site is a public property. Only parts of the cemetery go into the area of the village outskirts and private property areas. Site is more less abandoned and it is not in use even for agriculture so it is free for any potential and needed activity.

Among the identified problems is complete lack of any supporting infrastructure both roads, sanitation and any other buildings that can be set in function of the Lederata site. Another issue is the level of legal protection that forbids any building of the site so all facilities must be temporary objects not dug into the ground – like office containers standing on the surface of earth without any earth works to be made while their

installation. There is a river barge crossing in the near vicinity of this site and transit passenger can be diverted to check for cultural heritage in the area. International river passenger terminal is also planned to be set up in the near vicinity close to the Ram fortress. Large Danube River cruisers with hundreds of foreign visitors will be then able to visit the site.

Adaptation of the old village school into the small archaeological on site museum by the Ram fortress is of enormous importance. This adaptation was done by the municipality of Veliko Gradište with their own budget funding. At the moment special room for VR is being prepared through adaptation of the classroom in order to facilitate VR room for the needs of this project.

The whole Ram and its surroundings offers wide and different elements in long history with variety of Cultural Heritage elements. For us the Roman heritage is focus and the most important one as the professional dealing with antiquity region is a complex and rich with mythology religious and rural elements favorable for wide spectrum of visitors.

Presentation and management of pilot site's heritage is of greatest importance for both local community (as both economic and spiritual resources) national and international heritage as part of the transnational serial UNESCO World Heritage Property Frontiers of the Roman Empire - The Danube Limes.

The main tasks:

1. Analyze situation at the site with different target groups
2. to make it visible, understandable, functionally useable using its
 - a. historical complexity (fort, vicus, cemetery – both Celtic and Roman, at the Ram fort and Turkish),
 - b. the different layers of historical eras (Prehistoric, Roman and Medieval times)
 - c. and its present conditions (access to Danube, tourist facilities, river crossing opportunity)
3. by generating synergies, cooperations of different local, regional, national, and international stakeholders.

For the local level the following steps shall be fulfilled:

- information on the site for visitors shall be placed.
- connections between the pilot site, local Museum and nearby Archaeological Park Viminacium shall be created, to increase the understandability of the site and to make synergy between the potential managing institutions, authorities and the historical site.
- increasing the different local stakeholders' (Municipality, Museum, and the managers of the touristic organizations of the site) cooperation and involvement to the development of the site.
- increase the synergy of the different use of the site and divert transitional visitors of the river crossing to stop and spend some time at the Ram fortress and Lederata pilot site.

For the global level, the following steps shall be fulfilled:

- the site shall be connected to thematic clusters (sites from the transnational serial UNESCO World Heritage Property Frontiers of the Roman Empire - The Danube Limes – on both National and international levels)
- the different touristic sectors’ synergy shall be increased (cruise tourism, bicycle tourism, and the potential of the site)

Agenda

Based on the aforementioned necessary objectives, the following activities were implemented in relation with the Serbian Pilot Site Ram – Lederata with the following partners and stakeholders:

	Objectives - phases	Activity	Deliverable
PREPARATORY PHASE	1. survey of the historical features of the site and its present urban and touristic conditions	Learning interaction no. 1	DT.1.2.
		Learning interaction no. 2.	DT.1.2.
		Collection of materials for the VR reconstruction	Within D.T.1.2.
		Preparation of VR of the site	D.T.2.3.1.
DISSEMINATION PHASE	2. improvement of the visibility of the site	Implementation of virtual reality reconstruction on the pilot site	D.T.2.3.2.
		External events	D.C.3.3.
	3. creating synergies and cooperations prior to the improvement of the visibility, the preservation and management of natural and cultural heritage	LFG Event 1	D.C.3.5.
		LFG Event 2	D.C.3.5.
		Roman Danube Limes Day	
		Visibility Workshop	D.T.3.4.2.
		Museum Cluster	
Preparatory meetings for the Connecting Cruise			

Participating Partners and Stakeholders:

During the aforementioned activities the following partners and stakeholders were involved:

Objectives phases	Activity	Description
1. survey and benchmark of the historical features of the site and its present urban	Learning interaction no. 1	PP IAB PP FTN ASP Municipality Veliko Gradište Viminacium Archaeological Park Regional Museum of Požarevac

and touristic conditions	Learning interaction no. 2.	PP IAB ASP Municipality Veliko Gradište Viminacium Archaeological Park Regional Museum of Požarevac
	Collecting data for the creation for the Virtual model	PP IAB
2. improvement of the visibility of the site	Preparation of VR of the site	PP17 IAB AP Municipality Veliko Gradište
	Implementation of virtual reality reconstruction on the pilot site	PP 17 IAB PP18 FTN AP Municipality Veliko Gradište Viminacium Archaeological Park Regional Museum of Požarevac
	External events	PP IAB PP FTN ASP Municipality Veliko Gradište
3. creating synergies and cooperations prior to the improvement of the visibility, the preservation and management of natural and cultural heritage	LFG Event 1	PP IAB ASP Municipality Veliko Gradište Regional Museum Požarevac
	LFG Event 2	PP IAB ASP Municipality Veliko Gradište Regional Museum Požarevac Viminacium Archaeological Park
	Roman Danube Limes Day	PP IAB PP FTN Viminacium Archaeological Park
	Visibility Workshop	PP IAB PP FTN RAREI Tourist Organization of Serbia PP IARH
	Museum Cluster	The Museums and Visitor Centers that has already joined to the Museum Cluster, therefore the formation of synergy has begun: Museum of Vojvodina City Museum Novi Sad Museum of Srem National Museum of Serbia City Museum Belgrade Centre for culture Grocka Museum of Požarevac Archaeological Museum of the Iron Gate (Branch of the National Museum of Serbia) Museum of Krajina, Negotin
	Preparatory meetings for the Connecting Cruise	Ministry for Internal Affairs –Border police Port Management Agency Port Authority Belgrade River Police Local port Authorities Novi Sad, Smederevo, Veliko Gradište, Kladovo, Prahovo Tourist Organization of Serbia Tourist Organization of Belgrade Tourist Organization of Veliko Gradište Tourist Organization of Golubac Tourist Organization of Kladovo Tourist Organization of Negotin

		<p>FTN Municipality of Novi Sad Municipality of Golubac Municipality of Grocka Municipality of Kladovo Center for Culture Grocka Center for Culture and Library Kladovo Museum of Vojvodina Novi Sad National Museum Belgrade Rowing club Danubius 1885 Novi Sad Rowing club Partizan Belgrade Rowing club Smederevo Viminacium Archaeological Park</p>
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Preparatory phase:

For the related objectives the following preparations were fulfilled

Objectives phases	Activity	Description
1. survey and benchmark of the historical features of the site and its present urban and touristic conditions	Learning interaction no. 1	IAB made research on the history of the site and its present rural and touristic conditions with the involvement of the Municipality Veliko Gradište (ASP), Museum of Požarevac. The result: research summaries and development plans exhibited during the 'Implementation of VR of pilot site (D.T.2.3.2.).
	Learning interaction no. 2.	IAB made research on the history of the site and its present rural and touristic conditions with the involvement of the Municipality Veliko Gradište (ASP), Regional Institute for protection of cultural Heritage. The result: research summaries and development plans exhibited during the 'Implementation of VR of pilot site (D.T.2.3.2.).
	Collecting and shaping data for the creation for the Virtual model	IAB Collected and shaped data for the creation for the Virtual model. Reinterpretation of some results was also done that will result in future scientific papers due to change of understanding of certain buildings and features previously excavated. Reinterpretation and the data were needed for VR (D.T.2.3.1.) and presented at VR Implementation (D.T.2.3.2.).
	Preparation of VR of the site	The VR Lederata Auxiliary fort was created by STUBA based on the data collected by IAB.



High school and local focus group visit Lederata fort



High school and local focus group visit Ram fort



High school and local focus group visit Lederata fort



Local focus group visit local archaeological museum and has presentation of the Living Danube Limes Project.



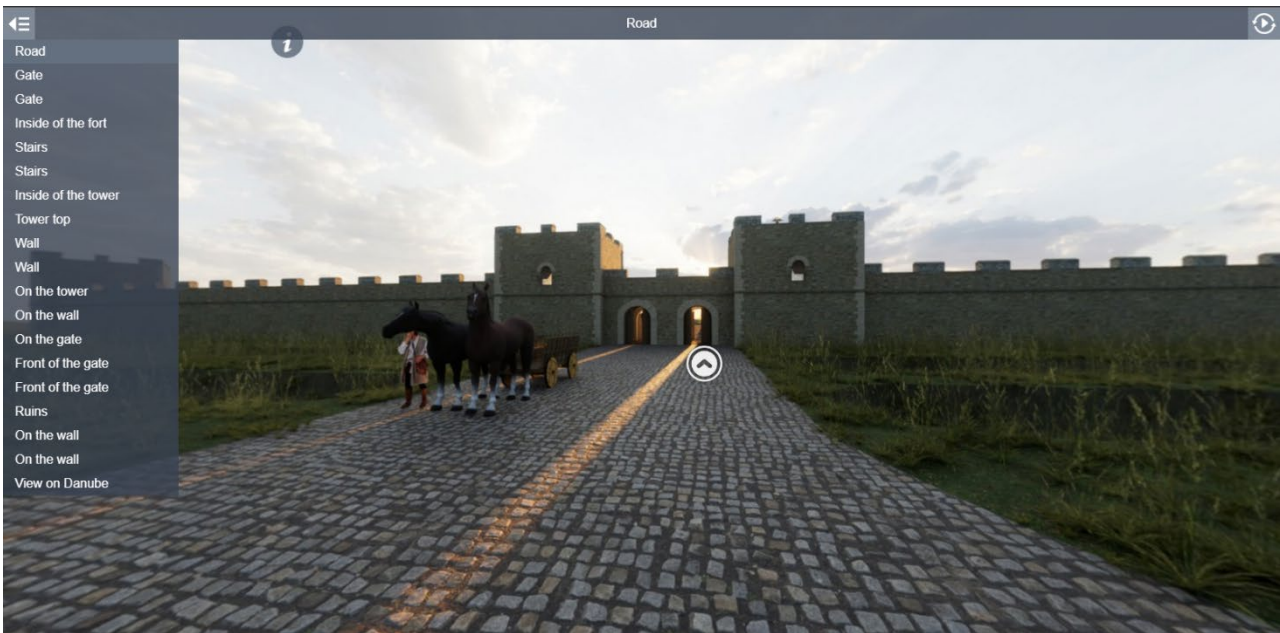
Lederata fort plateau from the drone. Damage inflicted by the looters and the density of the percent of damage is clearly visible. Aerial image from January 2020



North west corner tower of the Lederata fortress. Situation before and after clearing vegetation.



Larger classroom adapted into the mail museum hall suitable for lecture and different temporary presentations



VR Reconstruction of the Lederata fortress- sren shot of the VR Room computer



Plan of the Communications and site areas (plan of the IAB and Municipality Veliko Gradiste)

1. Hinig path to the site
2. Road access to the site
3. Location of the museum set up in the old school
4. Location of the future international river passenger terminal planned to be set up in 2023-2024

Implementation and Testing approach:

The Virtual Reality Implementation has been realized in two forms.

Firstly, on a VR temporary boards on the site, secondly, within a VR Room at the local Archaeological museum in Ram village.

1: The installation of the VR board on the site.

June 2022, 13:30 (see: D.T.2.3.2)

Target group: general public.

Way of implementation: online and offline material with the methodology of gamification.

Environment of installation: as the part of the visibility workshop (see: D.T. 3.4.2.)

Description (see: D.T.2.3.2):

A newly designed Info board was created for the project. The Board is prepared containing information regarding the site involved institutions and QR codes that provide links to the VR reconstructions online.

The temporary info board contains:

- Short and basic site info
- Institution logos
- QR codes linking visitors to the VR reconstructions.
- the website of the Living Danube Limes project can be reached by a QR code

The participants of the placement of the VR Board:

- Researchers of the IAB
- Representatives of the municipality Veliko Gradište
- Tourist Organization of Veliko Gradište
- Representatives of local community

The reason for the choice: the board provides offline and online visibility for the VR on the Pilot Site for the public.

This way of implementation provides an easy way to give information on site for the widest spectrum of target groups). The material can be developed and easily changed a flexible way other QR codes can be added, and the size of the board expanded. The size of the board does not interfere with the visual lines of the Roman architecture. Until the forming of the Archaeological Park there is a chance for damage or destruction of the boards by vandals or looters, and temporary boards are easy and cheap to replace. After the regular guard service is set up the temporary boards will be replaced with permanent one containing the same or expanded information. Therefore, this VR tool is completing the understanding and visibility of the pilot site.

2: Implementation of the VR within the VR ROOM at the Ram local museum

Set up and opened in September 2022

Target group: experts, local public authorities, general public.

Way of implementation: online and offline material with complex supporting material available on the 2 VR Computer stations.

The VR Room and museum will stay opened without time frame (until equipment is in function).

The reason for the choice: the VR Room provides both online and offline visibility for the VR reconstructions. Stations can be upgraded with new materials and software providing expansion of available materials and covering potentially wider audience. Setting of the room next to the main exhibition hall provides both archaeological (real deal materials) with virtual and digital info providing complete set of knowledge for all age visitors.

1: The installation of the VR board on the site:

Temporary info boards were installed at the site due to the ongoing problem with looters. Permanent info boards will be set as soon as the problem is resolved. Looters tend to damage or destroy everything related to the tourist presentation. After forming of the Archaeological Park Lederata and setting up permanent guard service we are looking into the general change of situation.

FRONTIERS OF THE ROMAN EMPIRE - THE DANUBE LIMES

Roman Auxiliary Fort and ancient river crossing
 nominated to the UNESCO World Heritage site, Ref.: 6475

LEDERATA

1st- 6th century AD



Design of the info boards with QR code to access the VR Reconstruction of Lederata

2: Implementation of the VR within the VR room in the small archaeological museum in Ram.”

A newly designed VR Board was created for the project.

Opening of the VR Room was set later than it was planned by the project in order to provide municipality with time to renovate rooms and facilities in school and set up the museum.

Museum rooms, toilets, and offices were adapted from the budget of Municipality Veliko Gradište. School originally was not connected to internet so municipality provided new internet connection dedicated for the needs of museum.

Equipment for the VR Room was acquired from the funds of the Living Danube Limes project.

In the VR Room two computer workstations were set with large screen TV instead of monitors. It is planned that when info center is set on the site of Lederata one of the workstation will be moved there. Large screen TV were chosen instead of monitors so that groups of visitors, especially children can participate together in exploring of the virtual fort.

VR Room is dedicated only for the presentation of the pilot site Lederata

- the Virtual Reconstruction of the monument can be reached by a QR code
- the website of the Living Danube Limes project can be reached by a QR code

Computer workstations are directly connected to the website and Virtual reconstruction of the site and there is no need for the use of QR codes within the VR Room.

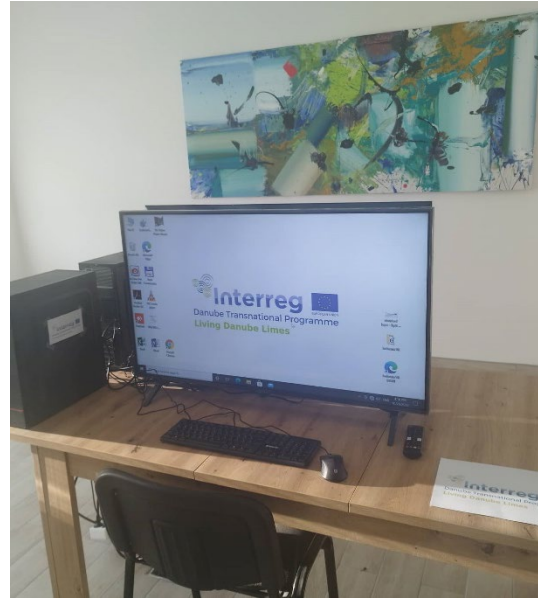
For the opening two classes of local schools and one class from the high school tested equipment and provided feed back for upgrading presentation and facilities within the VR room and the main museum hall.

The Museum and exhibition with the VR Room is planned to stay opened permanently as part of the presentation of the future UNESCO World Heritage site. Local museum is planned to be set up after inscription as the small UNESCO info center.

Museum is managed at the moment by the Tourist organization of Veliko Gradište. After formal foundation of the Archaeological Park Lederata new manager will take over and management of the museum.

Opening of the VR Room was presented on the National TV RTS 1 Dnevnik 1 and 2 / Prime time on 24th September 2022 by the reporter Aleksandra Stanković and Požarevac correspondence team.





Adaptation of the old school classrom into the museum VR Room

Dissemination

For the related objectives the following disseminations were fulfilled:

2. improvement of the visibility of the site	Implementation of virtual reality reconstruction on the pilot site	1: A newly designed VR Board was created for the project IAB. 2: The VR reconstruction is available online to wide public without limitations
	External events	The principles of the project and the Pilot Site was disseminated within several external events: <ul style="list-style-type: none"> 1. INTERREG ISTER workshop 1, - target groups: experts and national officials 2. INTERREG ISTER workshop 2 - target groups: experts and national officials 3. Danube limes day – wide public 4. RAC / TRAC 2020 archaeological conference 5. 1ST INTERNATIONAL CONFERENCE WITH WORKSHOP - SCIENCE FOR CONSERVATION OF THE DANUBE LIMES, Viminacium JUNE 27TH - JULY 1ST, 2022 Presentation Danube Limes in Serbia: On the Way to a UNESCO World Heritage Site – Problems, Challenges and Solutions with special accent to the activities of the Living Danube Limes Project
3. creating synergies and cooperations prior to the	LFG Event 1	Special event was organized in order to present project goals and plans for the local experts and public.
	LFG Event 2	Special event was organized in order to present project goals and plans for the local experts and public.

improvement of the visibility, the preservation and management of natural and cultural heritage	Roman Danube Limes Day	Roman cultural heritage was presented during Living history event dedicated to the Roman food and games – some of the most important elements of the Roman way of life. Serbia does not have a reenactment group dedicated to the Roman Empire and Danube Limes Day was organized with the help of FTN and Archaeological Park Viminacium who provided venue, animators and costumes, Roman food and board games.
	Visibility Workshop	Visibility workshop was organized as the online event. IAB, FTN and IARH from the project partners participated. From external experts we had RAREI from the project INTEREG ISTER. Participants were from Tourist organizations and Agencies, representatives of municipalities and local culture institutions from the Danube region.
	Museum Cluster	In parallel with the formation of the Museum cluster, the synergy and the visibility of the museums were strengthened.
	Preparatory meetings for the Connecting Cruise	IAB and FTN organized a series of meeting in preparations for the connecting cruise. All institutions involved in local organizations were engaged and coordinated by IAB and all venues were checked and designated. Promotional materials were distributed among national and local tourist agencies and organizations. Within the meetings the principles of the project was presented, the importance of the roman heritage was highlighted as well as its touristic potential, UNESCO nomination and the Pilot Site were noted – therefore the visibility of the different, related sites were improved.

Target groups:

Integration and use of the Output by the target group:

Number and profile of participants in total: 17

Target groups reached through the pilot action:

Target groups (in accordance to AF section C.2.2)	Target value	Institutions/interest groups/key persons present at the event
local public authorities	6	Municipality of Novi Sad Municipality of Grocka Municipality of Veliko Gradište Municipality of Golubac Municipality of Kladovo Municipality Negotin
regional public authorities	1	National Park Djerdap
national public authorities	1	Ministry for Internal Affairs – Border police
higher education and research education/training centres and schools	1	Veliko Gradište High School
SME (small and medium enterprises)		
general public	2	Inhabitants of Ram Village Inhabitants of Veliko Gradište



interest groups including NGOs	3	Tourist organization of Veliko Gradište (Director) Museum of Požarevac (Director) Regional Institute for Protection of Cultural Monuments
international organisations under national law		
international organisations under international law		
sectoral agencies	1	Tourist Organization of Serbia (International Referee)
infrastructure and (public) service providers	2	Port Management Agency Srbija Vode