



# Living Danube Limes

Valorising cultural heritage and fostering sustainable tourism by  
**LIVING** the common heritage on the **DANUBE LIMES** as basis for a  
Cultural Route



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Cultural Route

Editor in Chief:

ANNA MARIA KAISER, Danube University Krems

Editors:

LINA DIERS, Danube University Krems

GERGŐ MÁTÉ KOVÁCS, Budapest University of Technology and Economics

ZORÁN VUKOSZÁVLYEV, Budapest University of Technology and Economics

RAFFAELA WOLLER, Danube University Krems

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Cover Photo:

Connecting cruise with the reconstructed 4th-century Roman *Lusoria*.

The reconstruction was made by Friedrich-Alexander University Erlangen-Nürnberg within the framework of the Living Danube Limes project. Credit: Ádám Pálvölgyi and Márkó Hamza, Budapest University of Technology and Economics, 2022.

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## Preface

### **The holistic approach of the Living Danube Limes project**

The Living Danube Limes project was designed to put the Roman heritage and the Danube as a connecting water highway and a unique landmark centre stage. The Danube spans more than 2,800 km from the Black Forest in Germany to the Black Sea; along its course, numerous remains and traces of up to 600 years of Roman presence can be found. Cultural heritage, in this case, the Roman heritage, is all about people; it is about the history, identity, values, and pride of past and future generations – but especially of all current inhabitants of the Danube Region.

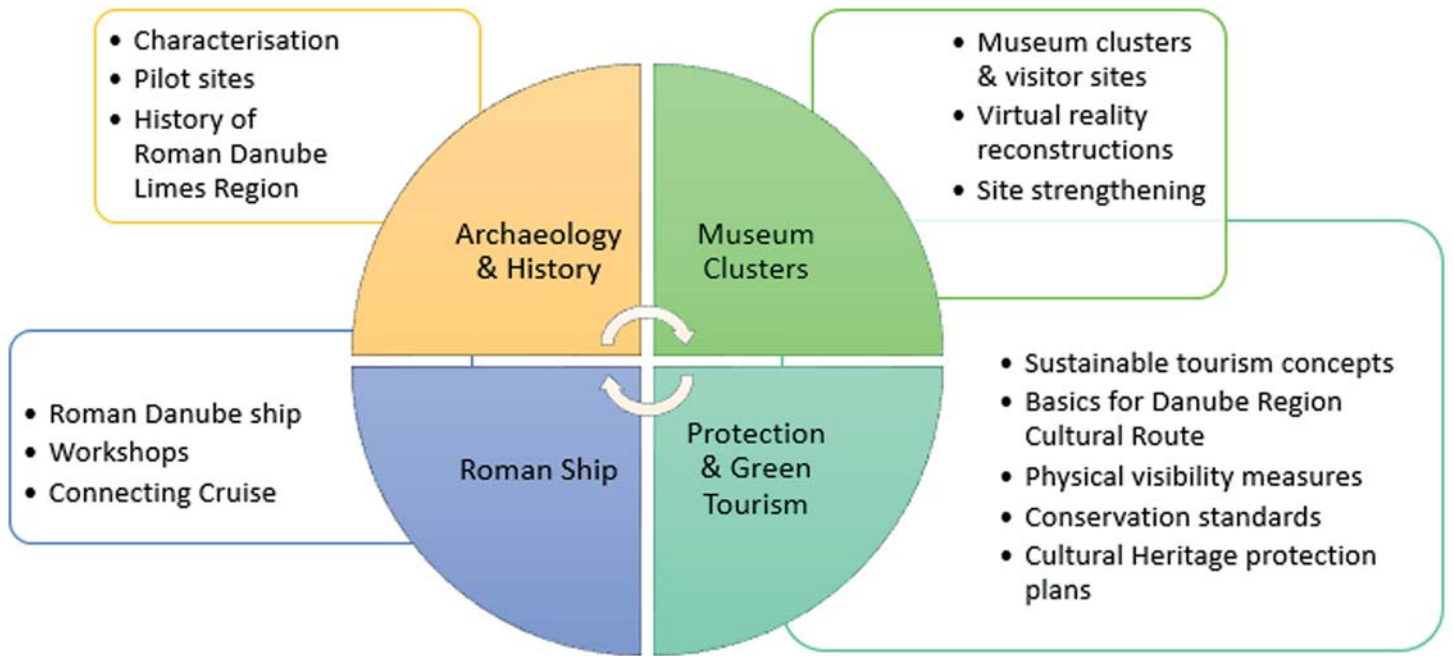
In Living Danube Limes, we decided to use the connecting force of this heritage and the Danube itself to empower these inhabitants to sustainably promote, validate, use and preserve their heritage. The adopted holistic approach starts with research and includes the presentation and preservation of this heritage, the re-living of some of its parts, and the highlighting of others which, after more than 1,600 years, are still an integral part of our lives today. And the approach concludes with connecting: connecting the Danube Region's countries with themselves, but also with their collective Roman history, thus contributing to a stronger region.

This approach is presented in the current volume, the chapters of which discuss archaeology and history, museums' and visitor sites' management, heritage protection, and green tourism. To transport all the knowledge generated in- and outside the project, a Roman Danube ship of the *lusoria*-type, the *Danuvina Alacris*, was reconstructed within its frame. In the summer and fall of 2022, she travelled from Germany to Romania, thus connecting physically the project partner countries and the inhabitants of the Danube Region with their shared history and highlighting the huge potential in sustainable and green tourism along and on the Danube.

The volume at hand brings together contributions from two international conferences and a workshop organised and held within the frame of the project. The topics highlight the holistic approach by which the whole project was created and cite excellent examples of the sustainable use of Roman heritage from Hadrian's Wall to the Danube Limes, including risk assessment and sustainable protection measures for its elements as well as ideas and measures to enhance the visibility of the often invisible archaeological record. Transferring knowledge in museums and visitor sites completes the picture of this unique project.

The current volume also presents the Living Danube Limes partnership, a collaboration connecting the whole Danube Region from Germany to Romania, that unites the knowledge and expertise of professionals in archaeology and history, sustainable tourism and knowledge transfer, as well as in the protecting and safeguarding of cultural heritage for future generations. Without them, it would not have been possible to create and put into practice the holistic approach of the Living Danube Limes project.

Asst. Prof. Mag. Dr. Anna Kaiser  
Lead of the Living Danube Limes project



*The four tiers of the Living Danube Limes project*

## **Facts and Figures.**

### **The description and aims of the Interreg DTP Project “Living Danube Limes”**

“Living Danube Limes” is an EU-funded Interreg Danube Transnational Programme project that focuses on connecting, enlivening, researching, preserving, and highlighting the Roman Danube Limes as an element of the transnational cultural heritage of enormous significance to create a sound foundation for a future European Cultural Route.

“Living Danube Limes” stands for “Valorising cultural heritage and fostering sustainable tourism by LIVING the common heritage on the DANUBE LIMES as a basis for a cultural route”.

Project objectives:

- The project’s main objective is to connect the Danube region through its common Roman heritage. The project seeks to support the preservation of this heritage by creating consciousness for the value of common heritage while respecting local differences and particularities and raising awareness of the Roman Danube Limes, having been not just a network of border fortifications but also a vast trading zone with a lot of mobility.
- The project supports the UNESCO World Heritage nomination of the entire Danube Limes, focusing especially on the nomination process for Croatia, Serbia, Romania, and Bulgaria.
- Another main objective of the project is to lay the foundations for a future European Cultural Route traversing the entire Danube Region.
- Fostering sustainable and eco-friendly tourism by creating tourism strategies specific to the Danube Limes region is another prime objective of Living Danube Limes.

Outputs of the project:

- Over the course of the project, a 4<sup>th</sup>-century AD Roman Danubian ship will be reconstructed using replica Roman tools. The replica ship will cruise down the Danube in 2022 with an international living history crew on board to bring the connecting aspect of the Roman Danube Limes into focus. After the end of the project, the ship will be at the disposal of each project pilot site for one year to serve as an attraction and motivation for further investment into the pilot site.
- Various research gaps will be closed by applying modern non-invasive archaeological geo-prospection methods at chosen pilot sites.
- A Living Danube Limes application will be created to host a comprehensive and easy-to-access archaeological and historical catalogue of the Danube region, merging data gathered

by preceding initiatives with new data gained through the research activities carried out in Living Danube Limes; see [www.livingdanubelimes.eu](http://www.livingdanubelimes.eu)

- Virtual and augmented reality reconstructions of the original Roman Limes infrastructure will be created based on geophysical prospections at the project pilot sites; these will be made available in the Living Danube Limes app.
- Establishing a transnational museum cluster will enhance the joint presentation of the Roman heritage in the Danube Region by creating a better visibility and understanding of the vastness and importance of this connecting historic landscape.

Reaching out to the people – making the common Roman past tangible:

- The project will establish eight national pilot sites with regular public activities such as living history events and workshops on historic crafting methods.
- Physical reconstructions at the pilot sites will complement the virtual reality reconstructions and generate more interest; such events are expected to lead to local follow-up projects and investment.
- Workshops for the dissemination of historic crafting techniques will be organised and documented.
- As a concluding act to the project, a living history cruise will be conducted from Germany to the Black Sea, with a crew comprising members of international living history groups on board the replica 4<sup>th</sup>-century AD Roman ship. The ship and its crew stop at each pilot site to participate in living history festivals, hopefully making way for a vast array of interactions with the public.

Living Danube Limes started in July 2020 and runs until December 2022. The partner consortium consists of 19 project partners and 27 associated strategic partners from Germany, Austria, the Czech Republic, Slovakia, Hungary, Croatia, Serbia, Bulgaria, Romania, and the Republic of Moldova.

The programme-specific objective is SO 2.2 – Foster sustainable use of natural and cultural heritage and resources.

This project has a total budget of € 3,151,121.20, funded by ERDF, IPA II, and ENI-MD.

Funding Institution:

EU Interreg DANUBE TRANSNATIONAL PROGRAMME

Project Duration:

1 July 2020 – 31 December 2022 (30 months)

LEAD PARTNER:

University for Continuing Education Krems, Danube University Krems, Austria



PROJECT PARTNERS:

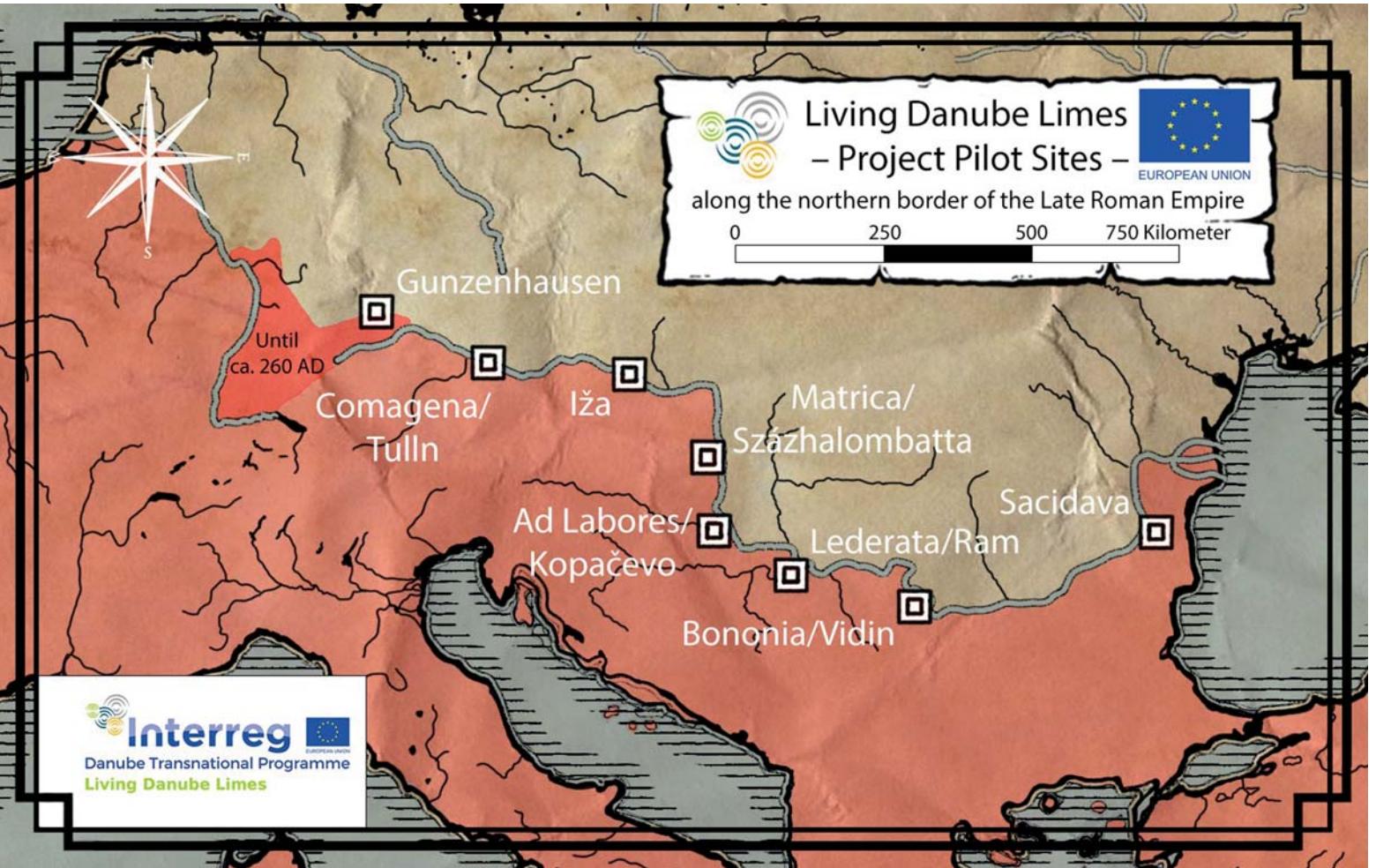
- Friedrich-Alexander University Erlangen – Germany
- Paris-Lodron University of Salzburg – Austria
- University of Architecture and Urbanism “Ion Mincu” Bucharest – Romania
- National Tourism Cluster “Bulgarian Guide” – Bulgaria
- Budapest University of Technology and Economics – Hungary
- Association of Cultural Heritage Managers – Hungary
- Institute of Theoretical and Applied Mechanics, Czech Academy of Sciences – Czech Republic
- Municipal Monument Preservation Institute Bratislava – Slovakia
- Slovak University of Technology in Bratislava – Slovakia
- Ludwig Boltzmann Institute for Archaeological Prospection and Virtual Archaeology – Austria
- Centre for Heritage Interpretation – Bulgaria
- Association of Danube River Municipalities “Danube” – Bulgaria
- Institute of Archaeology of Republic of Croatia – Croatia
- National Institute for Research and Development in Tourism – Romania
- Institute of Archaeology Belgrade – Serbia
- University of Novi Sad, Faculty of Technical Sciences – Serbia
- Ungheni City Hall – Republic of Moldova

## ASSOCIATED STRATEGIC PARTNERS:

Museum of National History and Archeology Constanta – Romania  
Federal Chancellery of Austria – Austria  
Lower Austrian Provincial Government – Austria  
German Limes Commission – Germany  
Institute for the Danube Region and Central Europe – Austria  
Austrian Commission for UNESCO – Austria  
Municipality Tulln on the Danube – Austria  
Museum of Ancient Seafaring – Germany  
City Museum Bratislava – Slovakia  
The Institute of Archaeology of the Slovak Academy of Sciences – Slovakia  
Danube Region Museum in Komárno – Slovakia  
Institute of Archaeology "Vasile Pârvan" of the Romanian Academy, Bucharest – Romania  
The Museum of Vojvodina – Serbia  
EUROPA NOSTRA Austria – Austria  
Roman City Carnuntum – Austria  
Association Community Integration Initiatives – Bulgaria  
Association for Antique Reconstruction "MOS MAIORUM ULPIAE SERDICAE" – Bulgaria  
Society of Conservators of Serbia – Serbia  
Archaeological Museum Zagreb – Croatia  
Galati Municipality – Romania  
Giurgiu City Hall – Romania  
Golubac Fortress Ltd. – Serbia  
Municipality of Veliko Gradiste – Serbia  
German Archaeological Institute – Germany  
Hungarian Society for Urban Planning – Hungary  
Banner János Foundation of Archaeology – Hungary  
Municipality of Calarasi / Municipal Museum – Romania  
Regional Historical Museum – Vidin

For further information, see

<https://www.interreg-danube.eu/approved-projects/living-danube-limes>







**An Example to Follow:  
Benchmark of Hadrian's Wall**





# Hadrian's Wall Events – learning through experience

Nigel MILLS\* and Bill GRIFFITHS\*\*

## **Abstract**

This short article aims to share ideas and experience gained from the joint experience of the authors in contributing to the development and management of major events along Hadrian's Wall over the last 15 years. The events described are all Wall-wide, with the express intention of promoting and celebrating the World Heritage Site as a whole. They range from events with a clear community focus, with little interest in gaining significant press exposure and small budgets, to many stranded blockbusters with casts of thousands and budgets to match. The events have sought to be innovative and experimental, exploring new approaches, testing new ideas, doing things that had not been done before. In some cases, this meant taking a risk with the weather, a judgement and balancing act only too familiar for those who know the vagaries of the British climate.

## **Keywords**

Events, World Heritage, Hadrian's Wall, visitor experiences, project management, arts, artworks

## **Introduction**

Hadrian's Wall is one section of the Frontiers of the Roman Empire World Heritage Site, the other two sections being the Antonine Wall in Scotland and the Upper German – Raetian Limes in Germany. This World Heritage Site is in turn part of the Frontiers of the Roman Empire World Heritage Cluster that currently includes also the Lower German Limes (the Rhine river frontier in the Netherlands and Lower Germany) and the Danube Limes – Western Segment (the Danube river frontier in Bavaria, Austria, and Slovakia).

The Hadrian's Wall World Heritage Site is 135 miles long, from Ravenglass on the Cumbrian coast to South Shields at the mouth of the river Tyne. The Wall itself runs for 73 miles (117km) from Bowness-on-Solway to Wallsend. A string of forts and other military structures extended down the Cumbrian coast, while in the east, the fort of Arbeia controlled the mouth of the Tyne. The World Heritage Site runs through seven Local Authorities. Most of it is privately owned, mainly by hundreds of farmers. All of it is protected as a Scheduled Ancient Monument. There are eleven main Roman sites and museums (managed by five different organisations) open to the public (Figure 1).

This short article is intended to share ideas and experience gained from the joint experience of the authors in contributing to the development and management of major events along Hadrian's Wall

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\* Heritage Consultant

\*\* Head of Programmes and Collections, Tyne and Wear Archives and Museums

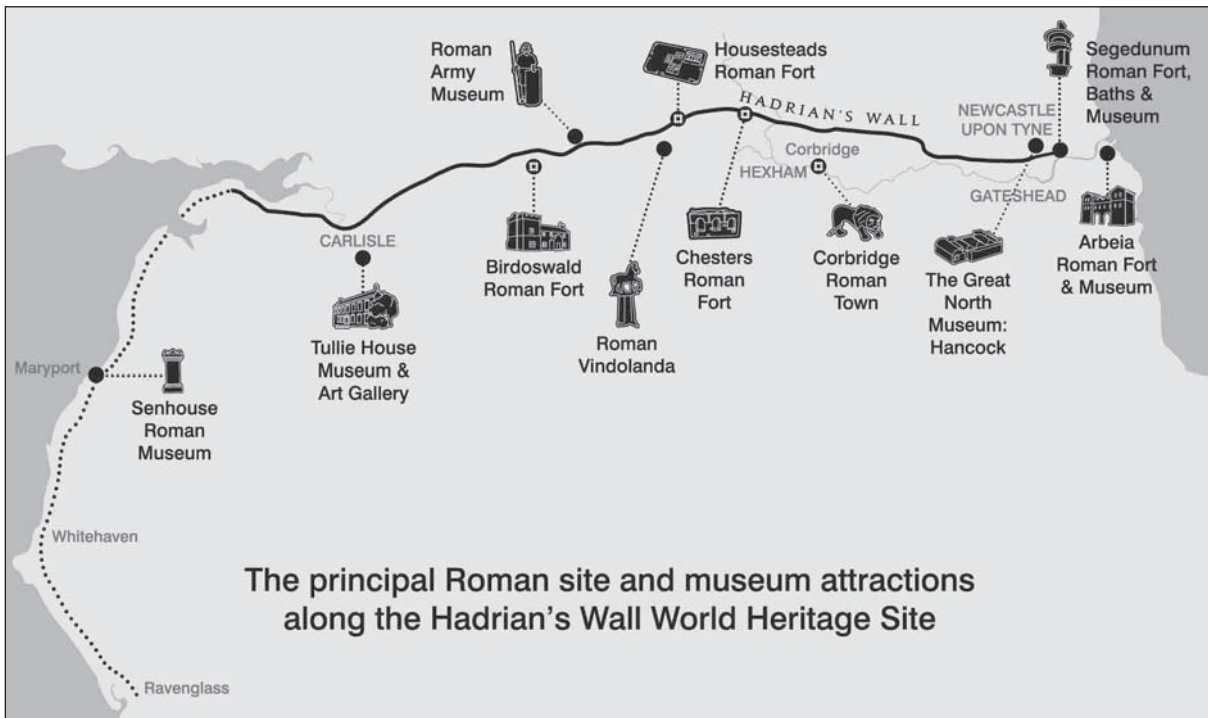


Figure 1. Hadrian's Wall World Heritage Site and Roman attractions © Nigel Mills

over the last 15 years. What distinguishes the events we describe is that they are all Wall-wide, with the express intention of promoting and celebrating the World Heritage Site as a whole rather than any of its constituent parts. The events range from those with a clear community focus, with little interest in gaining significant press exposure and small budgets, to many stranded blockbusters with casts of thousands and budgets to match. In all cases, the funds to support the events have had to be found – at no time over this period has there been a central pot of money available to fund events. In all cases also, the events have sought to be innovative and experimental, exploring new approaches, testing new ideas, doing things that had not been done before. In some cases, this meant taking a risk with the weather, a judgement and balancing act only too familiar for those who know the vagaries of the British climate.

One or both of the authors<sup>1</sup> have been directly involved in all the events described. Nigel Mills was formerly Director of World Heritage and Access for Hadrian's Wall Heritage Ltd, then for the Hadrian's Wall Trust (2006–2014). He was a member of the Project Management team for Wall Face and

<sup>1</sup> Any views expressed are simply the opinions of the authors based on their own experience. Any comments regarding aspects of projects that might have worked less well than hoped are not intended as criticism of any of those involved, simply a reflection on things that, in the light of experience, might have been done differently.

Hadrian's Cavalry. He currently works as a heritage consultant. Bill Griffiths is Head of Programmes and Collections for Tyne and Wear Archives and Museums and Chair of the Interpretation and Learning Committee of the Hadrian's Wall Partnership. He was chair of the partnership board for Wall Face and Hadrian's Cavalry and is chair of the partnership board for Hadrian's Wall 1900.

### **The Living Frontier: Thurs 28<sup>th</sup> – Sun 31<sup>st</sup> May 2009**

Budget: approx £200,000, funded primarily by Culture 10

The plan: The plan was to bring the Roman frontier to life through a series of high-quality re-enactment events celebrating the military history of Hadrian's Wall from the Romans to the present day. The programme took place over a weekend, with separate events taking place at different sites, culminating in a multi-period 90-minute pageant in Corbridge featuring around 500 re-enactors. This brought together all performers and re-enactors in a spectacular show of music, drama, and technical wizardry, culminating in the fire burial of a Viking warrior in his longship. The event included bringing together a full century of legionary soldiers (Figure 2) who carried out military drills in front of the Emperor. The main periods represented were the Romans, Vikings, Tudors and Border Reivers, and the English Civil War.

What happened: The programme as a whole was a great success and the sight of a well-drilled century of Roman legionaries was a highlight for re-enactors and the public alike. Downsides were that poor publicity resulted in fewer people than expected attending the final event in Corbridge, and an oversight in the contract with the event production team led to film footage not being available as a project legacy.



*Figure 2. The Living Frontier –  
Roman century in action  
© Hadrian's Wall Trust*

Learning: Make sure your publicity is well planned and organised from the beginning. Think through your contracts and make sure that all the right people are involved. Make sure the project management team includes all the right people and they communicate clearly with each other.

### **Illuminating Hadrian's Wall: 13<sup>th</sup> March 2010**

Budget: approx. £325,000, funded mainly by Culture 10 and ACE

The plan: to create a spectacular line of light from coast to coast on Saturday 13<sup>th</sup> March 2010, following the whole route of the 84 mile long Hadrian's Wall Path (National Trail), from Wallsend in Newcastle to Bowness on Solway. The plan also was to make this a major opportunity to engage local and world-wide communities in celebrating the iconic World Heritage of Hadrian's Wall.

What happened: 1,500 volunteers from around the world lit beacons and flares along the Wall for an hour at dusk (Figure 3). The event was filmed by a helicopter as the flares were lit in sequence from east to west, beginning with a spectacular light show and performance at Segedunum Roman fort, being received by a second spectacular light show and performance in Carlisle and ending with a reception by Roman re-enactors at Bowness-on-Solway. The event received international publicity and reached an audience of over a billion people from around the world generating £3 million regional revenue spend and £5 million in national and international media coverage. Billed as a once-in-a-lifetime opportunity, there have been repeated requests to stage the event again!

Learning: This was almost as big an undertaking as building the Wall in the first place! The logistics of recruiting, training, organising and looking after 1,500 volunteers, getting them all in place at the right time with the right equipment (and food and drink!), making sure they all enjoyed themselves and felt cared for and looked after, ensuring health and safety was managed effectively in a potentially

*Figure 3. Illuminating Hadrian's Wall © Stuart Herbert*



dangerous environment in fading light. Securing permissions from numerous landowners and ensuring the whole event was choreographed and filmed was an immense challenge. It is a credit to all involved that the event was a spectacular success and created unforgettable experiences. It was also helpful that the Gods looked on benignly and the weather conditions were perfect. A legacy DVD recorded the event for posterity. Projected souvenir sales were overly ambitious and many of those involved have a legacy stock of high-quality T-shirts! On the negative side, the event created significant traffic problems along main and minor roads in the Hadrian's Wall corridor, inconveniencing both local people and visitors and resulting in a significant number of complaints.

### **The Queen's Diamond Jubilee: Saturday 2<sup>nd</sup> – Sunday 3<sup>rd</sup> June 2012**

Budget: minimal!

The plan: to lend the gas beacons used in Illuminating Hadrian's Wall to local communities so they could light them to celebrate the Queen's Diamond Jubilee.

What happened: 60 beacons were loaned to 10 communities who had a great time!

Learning: You don't need a lot of money to facilitate an engagement of local communities with national events that fire the imagination. You do need some imagination and a willingness to help.

### **Connecting Light: Friday 31<sup>st</sup> August – Saturday 1<sup>st</sup> September 2012**

Budget: approx. £400,000, funded mainly through the Cultural Olympiad

The plan: Connecting Light was a major digital art installation along the line of Hadrian's Wall, intended for local, national, and international audiences to engage with one of the most significant structures of the Roman Empire. The project was one of the flagship events for the 2012 Cultural Olympiad, celebrating the London Olympics nationwide. Innovative, experimental projects were sought. Artist Zachary Lieberman's inspiration was to create a digital platform by which messages could be communicated the entire length of the Wall. The goal was to communicate the Wall in a modern context and imagine the Wall not as a barrier but as a bridge, as a means of connecting rather than dividing. People would be able to interact at sites along the Wall and as well as all over the world through the internet.

400 tethered weather balloons, each with a two-metre diameter, would transmit digital messages between them, triggering internal LED lights to change colour in response and creating a line of pulsating colours as messages travelled between the balloons. People would be able to interact with the balloons by creating messages and selecting colours either at the site or online – directly controlling the installation.



*Figure 4. Connecting Light © Hadrian's Wall Trust*

What happened: The weather intervened, took out many of the weather balloons, and disrupted the digital communications creating a poor experience for many visitors on the ground. What had seemed to the creative team to be perfectly achievable technically, turned out to be much more complicated than expected, especially with regard to the required robustness and reliability of the installations and digital equipment. Building on the experience of Illuminating Hadrian's Wall, which had proved very popular with volunteers, and mindful of the financial difficulties resulting from the 2008 global financial crash, the decision had been made to charge volunteers a small sum to participate. This backfired with the result that local people and students had to be recruited on a paid basis at the last minute to help install the weather balloons. Their on-the-ground experience was poor, despite strenuous efforts to mitigate the effects of weather and rushed re-organisation. The event managers did a terrific job in recovering from a difficult situation.

Despite these problems, the event achieved positive publicity world-wide, thanks to high-class photos of functioning sections of the installation (Figure 4) and its being part of the Cultural Olympiad.

Learning: In many respects this was an experiment too far! Don't take volunteers for granted, don't charge them for the privilege of taking part, ensure the time and energy and systems are in place to give them all a high-class experience. Ensure the activities and installations can cope with whatever the weather may have in store. Above all, listen to and take good advice.



## Wall Face: 21<sup>st</sup> August – 9<sup>th</sup> November 2014

Budget: approx. £140,000, funded by ACE

The plan: Wall Face was an experiment in partnership working across the Wall, intended as a pilot event for the Hadrian's Cavalry exhibition planned for 2017. All eleven sites and museums along the Wall hosted part of a Wall-wide exhibition, undertaken in partnership with the National Portrait Gallery and funded by Arts Council England, displaying portraits of notable archaeologists and antiquarians who first revealed and protected the monument. This was the first time that the museums of Hadrian's Wall had worked together in this way, creating a basis for future partnership projects. The project also provided an opportunity to experiment with a supporting community and educational arts project and a mobile app.

What happened: The exhibition was a partnership success, giving partners the experience of working together on a joint, Wall-wide venture. The launch event was itself a positive demonstration of partnership working with actor Ben Crompton from Game of Thrones (Figure 5) visiting each of the participating sites for a photo shoot during the course of one day. The exhibition did not attract many



Figure 5. Wall Face – actor Ben Crompton at the launch event © Hadrian's Wall Trust

visitors or the level of publicity achieved for Illuminating or Connecting Light, but that was not the objective. The community/education project was a great success resulting in the creation of legacy education resources (available through the Hadrian's Wall website <https://hadrianswallcountry.co.uk/learning>).

Learning: The partners worked together effectively and found many benefits and much learning from the experience. They also learned from the experience of handling major loans from a national arts institution, demonstrating they could do this effectively and in compliance with all the necessary conservation and legal requirements. The mobile app was a failure, demonstrating to partners the challenges of using digital media to create meaningful visitor experiences.

### **Hadrian's Cavalry 8<sup>th</sup> April – 10<sup>th</sup> September 2017**

Budget: approx. £900,000, funded primarily by Arts Council England with additional support from Carlisle City Council and a private sponsor

The plan: Hadrian's Cavalry was a multi-faceted project with many innovative elements, focused on a dispersed exhibition exploring the role of cavalry regiments in the Roman garrison of Hadrian's Wall (Griffiths 2021) (Figure 6). The exhibition built on the experience gained through Wall Face, with each of the ten museums hosting a different part of the cavalry story, featuring loans from major museums in the UK, Germany, and France. A major re-enactment event complemented the exhibition, bringing together for the first time in 1600 years a full squadron (*turma*) of 30 cavalrymen (Figure 7) to perform exercises known to have been part of the *Hippika Gymnasia*, ritual tournaments performed by the cavalry of the Roman Empire to both practice their skills and display their expertise. (Bishop and Mills 2021). A further major piece of innovation was the commissioning of an art installation, Cavalry 360, at Chesters Roman fort, an important cavalry fort along the Wall (Figure 8). The installation was designed to bring to life the sounds of cavalrymen going about their daily business within the fort (Booth and Nixon 2021).

Other innovative elements of the project included a community arts programme, with artworks displayed at all the participating museums as part of the exhibition (Figure 9), a visitor-focused guidebook to the exhibition, a digital game to be played across the venues, a Cavalry comics cartoon for younger people, produced by young people, and a film commissioned specifically for the exhibition.

What happened: Hadrian's Cavalry attracted world-wide interest and resulted in a 12% increase in visitors to Hadrian's Wall sites over the period of the exhibition. With the exception of the digital game, all elements of the project were delivered successfully and effectively. The project also resulted in several important legacies, featuring on the BBC television "Digging for Britain" series, with a special edition focussed on the project, developing educational resources including embedding of Arts Award learning into partner activities, a legacy film of the *turma* in action and the Cavalry 360 art installation going on tour around the UK.



Figure 6. Hadrian's Cavalry – installing an exhibit © Tyne and Wear Archives and Museums

Figure 7. Hadrian's Cavalry – the turma in formation © Mike Bishop





Figure 8. Hadrian's Cavalry – Cavalry 360 at Chesters Roman fort © Bill Griffiths

Learning: Hadrian's Cavalry resulted in a multitude of positive learning experiences. Perhaps the most important learning and legacy from Hadrian's Cavalry was the positive experience of partners across the Wall working together to deliver a joint programme. Other positives were the highly successful arts and education programme, the "Turma!" re-enactment event as public spectacle and experimental archaeology, and the experience of the Cavalry 360 art installation. An element of concern though was that partners felt exhausted by the intensity of the programme, which deflected them from the "day job". Better resourcing to cover additional work by partners would be needed for a future event of this scale, in addition to the resources needed for project management. An aspiration of the project had also been to engage new and different audiences for the Wall. This was achieved to some extent through the Turma! event and through the Cavalry 360 installation, but less effectively for the core exhibition. The failure of the digital game again demonstrated the challenges of using digital media to add to and enhance the visitor experience.

Hadrian's Wall 1900 (<https://1900.hadrianswallcountry.co.uk/>):

The context: The Hadrian's Wall Management Board has been in existence for the past seven years. It consists of representatives of all the Local Authority partners and key delivery partners along the



*Figure 9. Hadrian's Cavalry – Community Arts project © Bill Griffiths*

line of the World Heritage Site. As the partnership has strengthened it has gained in confidence and is currently developing a ten-year investment plan with partners working in a spirit of co-operation rather than competition. Working on shared endeavours such as Wall Face and Hadrian's Cavalry have helped foster this spirit of co-operation. The 1900<sup>th</sup> anniversary celebrations are born from this spirit of cooperation and a desire for a wider inclusion.

The plan: Partners along the Wall wanted to come together to celebrate the 1900<sup>th</sup> anniversary of the foundation of the Wall, generally believed to be 2022. However, they did not wish to simply replicate the dispersed exhibition model of Hadrian's Cavalry, although they did want to scale up the publicity for the World Heritage Site across this anniversary year. In addition, it was felt that an important aspect of the project should be genuine community involvement. The preceding years had seen an explosion of community-based archaeology along the Wall, such as the Wallquest project managed by Tyne & Wear Archives & Museums, which saw much work take place exploring the line of the Wall on urban Tyneside (Hodgson 2017), and more recently the WallCAP community archaeology project led by Newcastle University (Collins and Shaw 2021), which has seen volunteers recruited to help with presenting, preserving, and studying the Wall.

Ultimately what was wanted was a project in which everyone and anyone could propose their own ideas and participate – this is a festival celebrating 1900 years of a World Heritage Site, rather than a festival of the Romans, so people need to be free to explore the Wall and its many meanings as they choose.

The festival is designed to achieve the following:

- The communities that live along the Wall feel more engaged with it and are better able to utilise it for their benefit;
- Locals act as brand ambassadors for the World Heritage Site;
- National and international publicity is generated to help bring back visitors to the WHS post covid;
- strengthening of the partnership delivery model – not least to ensure success of the 10-year investment strategy;
- better sense of the stories of the frontier;
- skills and networks developed of benefit to WHS.

The Budget: aiming to raise £1,000,000 (with c £780,000 secured at the time of writing), plus funding raised by local groups and agencies to support their own events and initiatives.

What's happening: As ever a real challenge, exacerbated by Covid, is the capacity of the partners. A steering group was formed made up of people, drawn from across and beyond the regular Wall partners, willing to roll their sleeves up to make something happen. Initial funding was used to recruit a small team of freelancers to co-ordinate the project, with their role expanded as further funding has been awarded.

To be part of the festival activity, organisers need to follow a simple set of criteria:

1. Activities are to take place between Hadrian's Birthday (24 January 2022) and Saturnalia (23 December 2022).
2. If the event is physical (rather than virtual/digital) it should ideally take place within 10 miles of one or more of the following:
  - the line of Hadrian's Wall,
  - Arbeia Roman Fort in South Shields,
  - the Cumbrian Coastline from Bowness-on-Solway to Ravenglass.  
(Exceptions can be made to location criteria for proposals of significant relevance.)
3. The event should have appropriate reference to the 1900<sup>th</sup> Anniversary of the Wall, exploring one or more of the overarching themes (ultimately, we are asking people to explore and celebrate what Hadrian's Wall means to them):
  - the people of the Wall from all backgrounds;
  - the environment of the Wall;

- World Heritage Site status;
  - the archaeology and heritage of the Roman Army and Frontiers;
  - 1900 years of history (AD 122 to 2022);
  - life on the Wall;
  - promotion of Hadrian's Wall as a visitor destination.
4. The event should be suitable for a family audience, unless specifically stated otherwise.
  5. The event should consider accessibility requirements to ensure that the broadest audiences are able to experience your activity or event.
  6. The event should consider how to promote diversity and inclusion and engage new audiences and new visitors to the World Heritage Site.

To date over 270 proposals for activity have been put forward. The challenge is to establish which ones will take place, as bodies are supported in finding funding and partners. Proposals include talks, lectures, conferences, publications, historic re-enactments and the like, but also contemporary dance, comedy, crime fiction, brewing, amateur radio broadcasts and so much more. The festival will finish with a wall-wide festival of Saturnalia that is hoped many people will join in with.

Learning so far: Clear communication is a key – as is ensuring an openness to proposals so that people do not feel excluded. However, supporting people to stay connected and feel part of the festival over the course of the year is a challenge that takes time and effort. A further lesson for the project has been the effort required to find funding of sufficient scale in Covid times as funders have understandably been focused on other priorities. This has resulted in more of the time of the steering group being taken up with fundraising and serving the requirements of funders than was originally anticipated. However, the press response to the festival has been phenomenal – possibly because people are looking for good news stories, and indeed things to do “post covid”. This said, the simplicity of a 1900 year anniversary appears to be a major draw. Some press were nervous of covering the festival as we did not have a “thing” or image to sell it with. To this end, the cake produced for the launch was a great help – as well as being tasty (Figure 10)!



Figure 10. Hadrian's Wall 1900 – Cake wall!  
© Bill Griffiths

## Conclusions

Thorough planning and effective project management were key to all the successful outcomes of these events. Archaeology, marketing, and arts events are not natural bedfellows and effective project management means having a project management team that is used to working in a cross-disciplinary way and can listen to, understand, and empathise with all perspectives and facilitate fruitful collaboration. Several of the events clearly demonstrate that, if properly thought through, the arts can be used very productively to engage a wider range of audiences than might be achieved with more traditional approaches to heritage interpretation.

Whilst promotion of Hadrian's Wall has been a key objective of many of these events, it has never been the sole objective. The events have been seen as an opportunity to interpret heritage differently, to test new ideas, to experiment with and develop partnership working, to engage with local communities and to widen audiences for heritage. These other objectives have been most successful when they have formed an integral part of the respective projects rather than being seen as 'add-ons' and it is this integration that has often led to such activities being successful and also providing the most important legacies.

Effective partnership is needed between all the agencies involved. But what is effective partnership and how is it developed? Effective partnership occurs when the agencies work together collaboratively towards a shared goal that they all understand and commit to, with a willingness to understand different perspectives, to be flexible, to adapt, and to put in the time and effort needed. It is not something that magically appears but is built gradually over time and with experience of working and achieving together.

Finally, do not be afraid to be brave and innovative, but do listen to the right advice from people with relevant expertise, learn from experience, and build gradually.

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**From the Black Forest to the Black Sea.  
The Heritage of the Danube Limes**





# Roman Danube Limes in Croatia

Ivana Ožanić ROGULJIĆ\* and Mislav FILEŠ\*\*

The Danube is the second largest European river, lesser only to the Volga. It stretches 2,850 kilometres from the Bavarian Alps to the Black Sea, flowing through Germany, Austria, Hungary, Croatia, Serbia, Bulgaria, Moldova, and Romania, its delta touching the Ukrainian border. In Roman times, the Danube was always considered a natural border. Romans first reached it during the reign of Emperor Augustus (27 BC–AD 14) in their conquest of the early principate when the river Danube marked the border between the new province of *Raetia* and the *Barbaricum* to the north. The Greek historian, Strabo, mentions that Tiberius, Augustus' successor on the throne, discovered the source of the Danube while campaigning in *Germania Superior*. The Danube marked the border of many Roman provinces, including *Germania Superior*, *Raetia*, *Noricum*, *Pannonia*, *Moesia*, and *Dacia*. One has to be reminded that many of the provinces mentioned above underwent multiple administrative re-organisation during classical Antiquity and that they were founded in different periods, with the youngest province being *Dacia*, also known as *Dacia Traiana*, named after its conqueror, the Roman emperor Trajan (AD 98–117) in AD 106.

What would be known as the province of *Pannonia* in the first century was first mentioned and even conquered to some extent by Romans during Augustus' campaign in *Illyricum* 35–33 BC, with a successful siege and capture of Segestica (to become the Roman town *Siscia*), marking the northernmost point of Romans' military conquest during the campaign. *Siscia* became a substantial military base for controlling western Pannonia during Augustus's reign. The conscription and levying of tribute for the war with the Marcomanni sparked a significant revolt of indigenous tribes in *Illyricum* in AD 6. The uprising was named "the Great Illyrian Revolt" or "Bato's War" since the leaders of the tribes leading the revolt were Bato of the Daesitiates and some allies and Pinnes of the Breucii. Tiberius quenched the revolt in AD 9, and by its end, the province known as *Illyricum* became divided into *Dalmatia* and *Pannonia*. In the first half of the 1<sup>st</sup> century AD, Romans did not start to fortify their eastern border at the Danube but relied on alliances with vassal tribes; at that time, Dacian tribes, dwelling east of the Danube, represented the most significant threat. The first large-scale development projects to fortify the Danube Limes can be dated to the time of the Flavian dynasty, with a culmination in the next century, during the reign of the Roman emperors Trajan and Hadrian. During the reign of Emperor Trajan (AD 98–117), *Pannonia* became divided into two separate regions, *Pannonia Superior* and *Inferior*, with *Carnuntum* and *Aquincum* as provincial capitals. The reasoning behind this administrative division lay in the looming threat represented by barbarian tribes, mainly Quadi and Sarmatians, left of the Danube. The second half of the 2<sup>nd</sup> century AD is

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\* Dr. sc., Institut za arheologiju, Jurjevska ulica 15, 10000 Zagreb, Croatia. iozanic@iarh.hr

\*\* mag. archeol., Institut za arheologiju, Jurjevska ulica 15, 10000 Zagreb, Croatia. mfiles@iarh.hr

marked by a constant threat, border conflicts, and incursions by barbarians – mostly Marcomanns, with Quads and Sarmatians a close second. In a brief period of peace and prosperity during the reign of Septimius Severus, primarily due to the support of Pannonian provinces in the civil war from which he emerged victoriously, they enjoyed a short era of respite. With the end of the Severian dynasty, however, Pannonian provinces were pushed back in the turmoil of internal strife and conflict known as the crisis of the 3<sup>rd</sup> century AD. This internal crisis of the Empire provided the tribes on the Danube border with an opportunity to raid and pillage unrevenged; the most infamous raids are linked to the Carpi tribe and the Sarmatians in AD 242 and 260. The province of *Pannonia Inferior* also became a scene of battle between Emperor Galien and the usurper, Ingenuus. The crisis of the 3<sup>rd</sup> century concluded with Emperor Diocletian's rising to power, whose reforms managed to preserve the Roman Empire for another century and a half more. Under Emperor Diocletian (AD 284–305), the provinces of *Pannonia Superior* and *Inferior* became divided into four smaller provinces: *Pannonia Prima*, *Secunda*, *Valeria*, and *Savia*. Unfortunately, Diocletian's reforms only managed to preserve that much. If available sources, such as the reports by a contemporary historian, Zosimus, can be trusted, *Pannonia Secunda* became a venue for the largest battle of late Antiquity. The combatants of the battle were Emperor Constantius and the usurper, Magnentius, both Romans. Sources mention 54,000 casualties and a Pyrrhic victory for the legitimate emperor, Constantius. Such an enormous body count weakened all other efforts to defend the Roman border of the Pannonian provinces, and, from the end of the 4<sup>th</sup> century to the fall of the Western Roman Empire in AD 476, barbarians invaded the territory of the Roman Empire, countless times, even settling there – the invasions of Huns and Ostrogoths in the 5<sup>th</sup> century AD represent the highest point of this process.

Compared with other countries sharing the Roman Danube Limes, the Croatian section is relatively short, spanning only 188 kilometres and comprising a system of forts, watchtowers, and fortified cities, all well-connected by a road network.

Batina is the northernmost site in the Croatian section of the Roman Danube Limes. The site is located on a small hill overlooking the river Danube; it was recognized as a Roman site by early antiquaries and historians already in the 18<sup>th</sup> century. Its Roman name comes from "*Notitia Dignitatum*", and the site has been identified as "*Ad Militare*". Only several excavation campaigns have been carried out there, revealing the site once had been a Roman military fort. In recent years, non-destructive survey methods have been used to enhance our understanding of the relics buried there. The survey revealed, along with the fort wall, the headquarters building with an apsidal sanctuary, officers' apartment, barracks, and several other structures, still unidentified buildings, which might be granaries or workshops. The overall layout of the walls and buildings inside the fort enabled us to date the structure to the reign of Emperor Antoninus Pius (AD 138–161). The construction of this fort might have been a task carried out by the *cohors II Asturum*. Each new excavation near this Roman military site led to new findings related to its Roman history: the discovery of a cemetery and several V-shaped ditches significantly enhanced our concept of the Roman presence on this site and its hinterlands. Hopefully, new research will further our understanding. South of Batina or *Ad Militare*, one reaches Zmajevac, attributed to the Roman name "*Ad Novas*". A possible smaller Roman fortification was identified in its territory but has

never been excavated. However, the largest known cemetery of the Danube Limes, with 175 burials from the 4<sup>th</sup> century AD, was found in the territory of today's Zmajevac.

Further south of Zmajevac or *Ad Novas*, the next Roman site is Dragojlov Brijeg – any attempts to identify its Roman name have been unsuccessful. Only one excavation session has been carried out on this site, yielding evidence indicating that it was a Roman fort. Buildings with several rooms and preserved floors were unearthed, along with a number of graves from Late Antiquity. A brick with the seal of the *cohortis I Ulpiae Pannoniorum* identified the military unit that possibly garrisoned the fort when it was constructed. All sites mentioned above, together with Lug (*Albanum*), sit on the main road along the Danube that connected a major settlement, Osijek (*Mursa*), with all forts in a local road network, enhancing supply and communication between forts along the limes. Several sites were identified along this road system where watchtowers might have existed. The Limes Road led through today's Baranja region, left of the Drava River, where the still-standing remains of a Roman bridge, with foundations, still present and recorded in an underwater archaeological survey, were identified. The bridge connected a significant civic settlement, *Mursa*, with an intricate system of forts and watchtowers to the north, positioned along the banks of the Danube, also showing the strategic importance of the Roman colony. Osijek (or the Roman colony, *Aelia Mursa*) lies only about 20 kilometres away from the Drava-Danube confluence. The river could only be crossed at existing fords in this area, the location of the Roman bridge being perhaps one of them. The existence of the bridge was known to historians from the 18<sup>th</sup> century on. Several protruding bridge piles remained visible in the bed of the Drava until the 20<sup>th</sup> century when they were removed due to an upswing in river transport in the 20<sup>th</sup> century and became stored in the Archaeological Museum in Osijek. Today, the Museum's collection keeps several hundred architectural stone fragments, including a Roman altar built into the bridge. An underwater survey of the bridge was conducted in 2008; in the course of that, four of the six bridge piles were recorded. Furthermore, the campaign recovered a stone relief fragment depicting the sleeping Ariadne from the silt. A similar motif, based on a Hellenistic original, was popular in the Roman Empire from the 2<sup>nd</sup> century BC. The relief is made of stone; the bolts for fastening it to the bridge are still in place. The bridge's construction may be linked to the foundation of the Roman Colonia of *Aelia Mursa* by Emperor Hadrian. Probably many similar reliefs are still preserved under the river silt; hopefully, further underwater research will provide a better understanding of the Roman bridge. The strategic value of the settlement is also reflected by previous Celtic settlements in the area in the first several centuries BC. A Roman stone inscription mentioning *Legio II Adiutrix* conducting works in *Mursa* in AD 133 dates the possible founding of the colony. We know that Emperor Hadrian toured the provinces along the southern and eastern Mediterranean coast in AD 128 and made his way back via *Illyricum* in AD 133, most probably visiting and participating in the colony's founding. Through its existence, *Mursa* served as a supply centre for the nearby limes, providing forts and watchtowers with food and equipment as the major civilian settlement in their vicinity.

Following the Danube further south, the next Roman fort is Dalj, located below the confluence of the Drava River. The Roman *castellum*, *Teutoburgium*, was built in Dalj in the 1<sup>st</sup> century AD, thus being

probably the oldest Roman fort in the Roman limes. Dalj or *Teutoburgium* is a site rich in uncontexted finds. Unfortunately, a brickyard was opened in Dalj in the 19<sup>th</sup> century, and clay extraction probably destroyed at least a part of the Roman fort. Several graves were also excavated on the site, but the fort's exact location has never been identified. Several possible forts and watchtowers are situated along the banks of the Danube below Dalj; the most notable among them is the fort of *Cornacum*, built along the edge of a plateau on Popino Brdo in Sotin. Besides, this section of the Roman Danube Limes comprises several other possible watchtowers.

The last Roman site of the Roman Limes in Croatia is today in the town of Ilok; below that, the river Danube continues its flow towards Serbia. It is assumed that a Roman *castellum* was located in the upper town of Ilok; the Roman site there has been identified as *Cuccium*. Some Roman architectural relics were built into the local medieval castle. Archaeological excavations in the courtyard of the Palace of the Dukes of Ilok discovered remains of Roman buildings from the 3<sup>rd</sup> century AD, while the eastern cemetery, located at the same place, was dated to the first third of the 1<sup>st</sup> century AD. The necropolis comprised the graves of members of Roman auxiliary military units. Several development-led excavations in diverse parts of the town yielded ceramic water pipes, and the start of the Roman water pipeline was discovered on Principovac hill.

Roman Danube limes is a Roman border system consisting of forts and watchtowers connected with an intricate road network with major settlements in its approximate vicinity. In Croatia, the Danube today marks a border the same way it did in the periods from the first century AD to the fall of the Western Roman Empire. Several sites in Croatia have been identified with Roman sites mentioned in sources, such as *Notitia Dignitatum* and *Tabula Peutingeriana*. Besides, we know of a few more, the names of which have yet to be discovered, from the same period. New technologies, primarily non-destructive survey methods and remote sensing, helped researchers deepen their knowledge of the sites along the Croatian part of the Roman Danube limes. Hopefully, in the near future, the UNESCO nomination of the Croatian section of the Roman Danube limes will help raise awareness of this monumental logistical achievement of the Roman Empire.

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# Histria – The Romanian Pompeii on the Coast of the Black Sea

Mircea Victor ANGELESCU\*

## **Abstract**

Istros / Histria is one of the best-studied colonies on the shores of the *Pontus Euxinus*, the Black Sea. It was the first urban settlement on the territory of today's Romania, founded by Milesians in the middle of the 7<sup>th</sup> century BC. Its late Roman population deserted it in the middle of the 7<sup>th</sup> century AD due to the pressure of migrating people and the gradual silting of its port.

The international academic community considers this settlement to be a site of key importance for the research of the Greek colonisation of the Black Sea area.

The relics making up the cultural landscape of Histria are numerous and very complex. They have already entered the contemporary collective memory, especially since the beginning of systematic excavations in 1914. Dating to all relevant phases of Antiquity (archaic, classical, Hellenistic, early Roman, late Roman), Histria's *temenos*, with numerous temples dedicated to a plethora of worshipped deities, is unparalleled in the Black Sea region. The ancient city also comprises well-preserved and significant monuments (civil basilicas, baths) from the early Roman era and an impressive number of monumental Christian relics.

Today, Histria is known as "Pompeii of Romania". More than a hundred archaeological campaigns have been carried out in its territory since 1914 (Angelescu 2019).

## **Keywords**

Istros, Histria, Black Sea, colonisation

## **Historical outline**

Histria was founded by Ionian Greeks from Miletus in a location that provided excellent conditions for a harbour (Figure 1). There is no archaeological evidence pointing to the inhabitation of the area before the arrival of the Ionian settlers. As Pseudo-Skymnos (ca. 766–770) wrote, "*The city of Istros took its name from the river Istros. It was founded by the Milesians at a time when the army of barbarian Scythians had crossed into Asia, pursuing the Cimmerians fleeing the Bosphorus*" (Pseudo-Skymnos GGM, v. 766–770). This account accords with Eusebius of Caesarea (Eusebius, ed. Helm, 95 b), who stated that "*in 657 BC, during the 33<sup>rd</sup> Olympiad, the city of Istros of Pontus was founded*". This dating is

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\* Scientific Director of the Archaeological Site Histria, Institute of Archaeology "Vasile Pârvan", Str. H. Coanda no. 11., Bucharest, Romania.

The Institute of Archaeology "Vasile Pârvan" is an associated strategic partner in Living Danube Limes.  
mircea.angelescu@gmail.com



Figure 1. Remains of the Late Roman city of Histria viewed from west, with the Black Sea in the background

confirmed by the oldest ceramic finds from Histria, dating about 630–620 BC, and the discovery of Greek ceramic findings proving the existence of a first settlement, probably an *emporium*, preceding the colony.

Despite the long history of archaeological investigations, the 60 hectares of land hiding the remains of the archaic Histria (7<sup>th</sup> and 6<sup>th</sup> centuries BC) are still barely excavated today. Yet, we know that the oldest temples and altars, together with their architectural decoration, are in the sacred zone (Alexandrescu et al. 2005, 93–155) located around a huge depression in the local bedrock (Figure 2). From the start, the primary sources of Histria's income were its port connecting



Figure 2. The Greek sacred area (7<sup>th</sup> to 6<sup>th</sup> centuries BC)

the city with the Mediterranean world and the surrounding trade-related facilities. Hence, the gradual silting of the port had grave consequences in later centuries. The flourishing Hellenistic city of Histria (Angelescu 2017, 5–7) came under Roman influence as a result of the campaigns of M. Terentius Varro Lucullus, who conquered all cities in the Western Pontic area in 72–71 BC, while Crassus' campaign in 29–28 BC brought about the actual beginning of the early Roman period in Histria.

### Early Roman Histria

Histria became transformed from a succession of Archaic, Classical, and Hellenistic strongholds into an important Graeco-Roman fortress and city in the 2<sup>nd</sup> and 3<sup>rd</sup> centuries AD.

The *redactio in formam provinciae*, the official incorporation of the Dobrudja region into the Roman province *Moesia*, took place between AD 68–96, but the province, and thus its Black Sea coastal colonies only became fully organized and regulated in territorial and administrative matters under the reign of Emperor Trajan. In the 1<sup>st</sup> century AD, Histria retained many of its Hellenistic structures within the walls of the Hellenistic enclosure, though a modest neighbourhood comprising houses of civilians already overlapped the initial archaic sacred zone at that time. Archaeological excavations revealed a street network designed according to Hellenistic tradition, with buildings constructed in *opus graecum*, a huge *horreum* (agricultural warehouse) built in the port, and a thermal bath complex referred to as *Termae I* (Figure 3). During Hadrian's reign, a new city wall



Figure 3. The thermal bath complex "Termae I"



Figure 4. Histrian bronze coin with the representation of Neptune and the lighthouse, issued during the reign of Severus Alexander (AD 222–235)

was built with three gates on its western front; the new wall enclosed an area of about 30 ha. The street network east of the acropolis' former (Hellenistic) fortification remained in use, while west of it, a new, differently oriented street system emerged, which aligned with the extramural basilica and the monument conventionally called *Termae II*. Besides, other buildings were also erected at this time: an important civil basilica on the main square and a sanctuary (its one-time function has not yet been unrevealed) close to the early Roman fortification. The two ditches in front of the Hadrian-time fortification were levelled; west of it, a living quarter with simple houses and a terracotta workshop were established. This is one of the most prosperous periods in Histria's history, as attested by both epigraphic documents and the abundance of *spolia* (reused remains of earlier monuments) used for the reconstruction of the city's fortification after the massive Gothic destruction of the settlement (*excidium Histriae*) in the middle of the 3<sup>rd</sup> century AD. Before this major destruction, however, the peace established by Trajan and his successors was interrupted once: in AD 170, the Costoboci tribe is known to have made swift raids to the south, reaching Greece. They destroyed many Roman cities on the way, including Histria, where the port and the gymnasium suffered great damage (Historia Augusta, Vita Marci, 22, 1; Pausanias, 10, 34, 5). Two inscriptions from Histria refer to this attack and mention the reconstruction of the harbour facilities in its aftermath – events of great interest as Histria essentially depended on its port. The fact that two locally issued coins feature the so far not located lighthouse of Histria's harbour (Figure 4) attests to the importance of the harbour in the life of the city, as does the fact that the port's silting played a crucial part in the eventual downfall of the settlement.

## The silting of the port

Histria and the southern Danube Delta region, in general, experience the most complex environmental dynamics on the entire western coast of the Black Sea. Predominant winds and waves in this area come from the northeast and approach the coastline at an oblique angle, generating a strong southward current that deposits massive amounts of silt (ca. 1 million m<sup>3</sup> / year) along the coastline. This landscape is dominated by the 867-km<sup>2</sup> Razim-Sinoie Lagoon, where, amongst others, the Acropolis of Histria is located.

Geoarchaeological studies demonstrated that the depositing of sand and mud by the southward sea current was the fastest during the first centuries AD. The port installations became covered by millions of tons of silt since; thus, no trace of the ancient gulf can be seen on site today. Already in Roman times, the water in the lagoon became shallow, thus it could no longer be used by large ships. Sea depth is estimated to have been between two and fifteen metres, and the shrinking of the harbour's water surface was striking: from 8.1 hectares in the 7<sup>th</sup>–6<sup>th</sup> centuries BC to 3.6 hectares in the Hellenistic period (3<sup>rd</sup>–1<sup>st</sup> centuries BC), 2.7 hectares in the 1<sup>st</sup>–2<sup>nd</sup> centuries AD, and only 0.5 hectare in the 6<sup>th</sup>–7<sup>th</sup> centuries AD (Angelescu 2018, 354).

Before the loss of its port and numerous waves of destruction in the late Roman period, Histria had gradually developed into a typical city of the Roman Empire's eastern part. Detachments of the *Legio XI Claudia*, the Flavian fleet of *Moesia*, and the cavalry unit of the *ala II Hispanorum et Arvacorum* were stationed in Histria, mainly as a first line in the defence of the coastal *Limes*, to fend off the attacks of the Bastarnae tribes. The presence of units of the *Legio XI Claudia* in Histria must be considered jointly with the interpretation of some buildings as *horrea* that bear witness to the tax *annona militaris* having been collected there for the Roman imperial army. Histria kept its rank as *civitas stipendiaria*; its importance is also proven by its inclusion in the great itineraries of the time – the *Itinerarium Antonini* and the *Tabula Peutingeriana*.

## Late Roman Histria

The last fortified wall of Histria, erected during the reign of emperor Probus in the second half of the 3<sup>rd</sup> century AD, enclosed an area of only 7 ha and was built in haste, as attested by the absence of proper foundations (the builders used transversely placed column shafts for a makeshift foundation, see Figure 5) and the considerable number of *spolia*, most of which are architectural ornaments, inscriptions, and theatre benches. Later – after suffering another wave of destruction – the fortress was rebuilt during the reign of Constantine the Great. The enclosure wall was rebuilt and extended, including new towers and bastions on the western side; the main gate's towers were doubled with two outer bastions. More importantly, the city expanded by establishing two new quarters in the northern and southwestern corners, including a new *horreum* in the north and the so-called “economic quarter” in the southwest.



*Figure 5. A tower from the 3<sup>rd</sup> century AD, with a foundation made of transversally placed column shafts*



*Figure 6. The Late Roman fortification and city as seen from the south*

Following the period of Constantinian reconstructions, the raids of migrant tribes resulted in an extensive demolition of the city. This difficult age is dominated by the effects of the two Gothic wars (AD 367–369 and 376–378) that marked the beginning of the era of Barbarian invasions on Roman territory. The famous battle of Hadrianopolis on 9 August AD 378, where Emperor Valens was defeated by the Goths and lost his life (Ammianus Marcellinus, 31, 13, 1–16), marked the beginning of a troubled age. Histria suffered further and severe destruction, which initiated one of the darkest periods in the history of the fortress (archaeologically, represented by the stratigraphical layers III A and III B). The most spectacular evidence of Histria's decline may be the expanding extramural necropolis, which gradually reached under the walls of the fortress of the time. As a result of the raids, the inhabited area of the city shrunk to about one-third of its greatest



extent, and the population decreased from around 15,000-20,000<sup>1</sup> to only a few thousand, who found a place to settle and live in a smaller area (of only 5 hectares) engirded by a newly erected city wall.

It was under the Christian emperors Anastasius (AD 491–518), Justin I (AD 518–527), and Justinian (AD 527–565) that Histria saw its last phase of prosperity, marked in the archaeological record by the construction of the extramural basilica and the episcopal basilica, both heralding the triumph of the Christian faith.

The last demolition of Histria dates to the end of the 6<sup>th</sup> century AD. Archaeological excavations have revealed that the central episcopal basilica and all other basilicas, together with the city's fortified wall and other important buildings, were destroyed at the same time. Later, modest dwellings that still retained an urban character were installed above their ruins (Figure 6). With this, the former city began its final transformation into nothing more than a simple hamlet with huts and walls but without a foundation. This hamlet may have been abandoned by its last inhabitants towards the end of the 7<sup>th</sup> century AD, when in AD 681, Constantine IV Pogonate (AD 668–685) was forced to accept Moesia's occupation by Asparuch's Bulgarians, thus ending thirteen centuries of Greek and Roman settling in Histria.

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# Risk Assessment and Sustainable Protection of Historical Sites





# Protection of Cultural Heritage in Romania.

## Raising Awareness and Presenting Cultural and Administrative Solutions

Mihaela SIMION\*, Margareta ARSENESCU\*\* and Decebal VLEJA\*\*\*

### **Abstract**

Protecting the national cultural heritage in Romania is a priority of cultural and administrative policies. The means to achieve that, provided by a successful approach, involve coordination of efforts on both European and international levels and short and/or long-term planning. These are aimed at bringing cultural heritage elements into the limelight and developing archaeological tourism, thus making the archaeological sites part of not only the cultural life but also the economic and administrative network of local communities. Raising awareness is one of the current preventive measures; therefore, law enforcement agencies have been warned of the perils endangering the integrity of archaeological sites. National-level administrative measures – that have become mandatory by today – not only involve regulation of archaeological research but are aimed at putting archaeological sites centre stage and including them among the well-managed and financially fully covered cultural heritage sites.

The Roman historical monument of *Troesmis*, Tulcea County, is one of the most important archaeological sites of the Romanian section of the *Danube limes*. In the absence of coherent administrative measures, however, it was exploited in the past, and several looted finds – cultural goods of great historical value – became subject to illegal international trafficking. The most important amongst these was the *Lex Troesmensium*, a bronze tablet stolen and sold but eventually returned to Romania; its story is described in the current paper. Its example shows that the active involvement of local and government authorities is the key factor in preserving the national cultural heritage as part of European and global history.

### **Keywords**

Cultural Heritage, illegal antiquities trafficking, raising awareness, *Troesmis* fortress, Roman Constitution

### **Protection of cultural heritage: national and global strategies**

The protection of the cultural heritage of each country has been and remains a priority of joint actions aimed at preserving its elements. The first step in achieving effective heritage protection was establishing a coherent legal framework that proved to be essential in turning the public attention to the problem. That proved to be a key to preserving the relics of our written and unwritten history that are, besides being the record of a nation's past, also parts of humankind's universal, global history.

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\* PhD, National History Museum of Romania, mihaela.simion98@gmail.com

\*\* Cultural heritage protection specialist, m\_arsenescu@yahoo.com

\*\*\* PhD, National History Museum of Romania, vdecebal@yahoo.com

Romania is a European country with a long and eventful history. Due to its strategic location, it has often been exposed to various geopolitical influences. Archaeological research, often born out of curiosity and the desire to acquire considerable income through trade, added an extraordinary impetus to the national characterisation and development of Romania in the 19<sup>th</sup> century, leading, eventually, to the emergence of a need for a state-level framework and the institutionalisation of the field. The first measures provided a regulation of archaeological research and the appropriate handling of the recovered elements of the archaeological heritage to profit from their cultural rather than financial value.

Understanding that the irreversible loss of history is equivalent to the loss of national identity, the Romanian academic community and the government's law enforcement agency responded proactively to the threat. Romania has signed all international regulations of cultural heritage protection and has acted permanently, within both European and international agencies, to implement the recommendations or provisions stipulated in these conventions, directives, or Codes of Ethics developed under the auspices of UNESCO, UNIDROIT, ICOM, ICCROM, the United Nations, the World Customs Organization, the Council of Europe, etc.

According to official statistics, Romania is an important source of illegally obtained valuable cultural and especially archaeological goods (Brodie et al. 2019, 102). Illegal excavations on several pre-Roman and Roman archaeological sites represent the main threat to Romania's cultural heritage – the lands of the country are full of exceptionally well-preserved but unexplored sites. Illegal activities hamper the possibility for these sites to be recognized as historical monuments, thus making impossible a proper handling and utilisation of the related findings, often of exceptional scientific and museographical value (see <https://politiaromana.ro/ro/obiecte-furate> for the national database of stolen cultural objects of the Romanian Police).

The looting of archaeological sites, some part of the UNESCO World Heritage List, is a destructive act, the occurrences of which are recorded by the Romanian law enforcement authority. Looting and destroying archaeological sites often involves organized crime-related operations linked to international networks illegally trafficking archaeological findings and selling them in Europe or the USA (Lazăr and Condruz 2007, 25–27).

A diversification and increase in demand for particular findings in the illicit antiquities market led to the emergence of sophisticated trafficking mechanisms both countrywide and internationally. This web of illegal activities involves, besides an illicit trade of antique objects, e.g., money laundering.

According to the data registered by Romanian authorities, more than 4,000 mobile items of cultural heritage have been reported as stolen. This number is topped by more than 5,000 ancient artefacts, e.g., ceramic vessels or coins, that have disappeared or have been destroyed by illegal excavations (see the official INTERPOL database of stolen artworks at <https://www.interpol.int/Crimes/Cultural-heritage-crime/Stolen-Works-of-Art-Database> and the Romanian Police's national database of stolen cultural objects with more references related to coin treasures trafficked from 1996 to the present).



Beyond general statistics, the most severe crimes against cultural heritage are those directly related to the archaeological heritage – theft from archeological sites or museums, illicit trafficking of antiques, or the destruction of historical monuments.

Theft concerns the object itself as a repository of various scientific data. Archaeological objects may have the same historical value regardless of their raw material. Knowing a finding's find context, however, is essential for accessing the historical information it incorporates; with that, objects can be appropriately classified and dated, potentially distorting our understanding of the historical reality.

Thus, removing archaeological objects from their historical context without applying the correct scientific method can cause irreparable damage to historical research and is directly related to destroying the historical monument.

Moreover, in the absence of detailed data on what had been looted, it becomes almost impossible to determine with certainty the type, number, and characteristics of the objects stolen from archaeological sites. As a result, it is very difficult to identify the origin of the stolen archaeological objects that enter the antiquities market. Expert opinion and the soundness of material evidence in criminal investigations are essential elements in the success of international legal procedures aimed at restoring objects representing the archaeological heritage of a particular country.

The destruction of historical monuments on archaeological sites by looting is a relatively common crime in Romania, one that concerns various relic types, including above-ground, underground, or even underwater monuments. The acts are reportedly often committed by specialized groups – criminal organisations – equipped with advanced detection devices. The members of these groups, directly or indirectly, smuggle the stolen archaeological findings via international networks to the illicit antiquities market, which has an ever-increasing demand for such artefacts as antiquities are considered a stable investment with a long-term profit guarantee.

Judicial authorities have generally responded to such actions promptly and effectively, and the results correlate with the efforts of those responsible for protecting cultural heritage.

On the European level, this response became realized through the organization and support of joint actions under the coordination of EUROPOL and with the direct support of INTERPOL and the WCO. Within the framework of several European action plans in 2015–2021, law enforcement agencies from the Member States and third-party countries such as the USA, Switzerland, Bosnia and Herzegovina, Montenegro, Northern Macedonia, Turkey, etc., carried out extensive measures to combat any form of threat against movable and immovable elements of the cultural heritage.<sup>1</sup>

Although the annual reports provided by INTERPOL focus on the movable cultural assets that have been subject to crime, they also reveal that when an archaeologically relevant cultural asset is

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<sup>1</sup> <https://www.interpol.int/News-and-Events/News/2021/More-than-56-400-cultural-goods-seized-and-67-arrested>, <https://www.interpol.int/News-and-Events/News/2022/52-arrests-in-operation-across-28-countries-targeting-trafficking-in-cultural-goods>.

concerned, the related archaeological site is usually also directly affected by the illicit actions (e.g., in 2020, 49% of all stolen artefacts representing the cultural heritage of the European INTERPOL member states were archaeological goods, with 14 % of that being numismatic material).<sup>2</sup>

The greatest danger to cultural heritage is “antique laundering”, a fraudulent manoeuvre designed to conceal the origin and dubious provenance of illegally obtained archaeological objects. It aims to create an illusion of legality by injecting the objects into the legitimate flow of traded antiques. That especially applies to public sales on the internet, which dwell between legality and illegality. Hence, “antique laundering” is difficult to prove as a criminal action, despite being legally recognized by all states affected by the related trade operations and prosecuting such activities.

In the framework of international criminal prosecutions initiated by Romania in the last 15 years, the successful application of the provisions of the *1970 UNESCO Convention*, the *1995 UNIDROIT Convention*, the *European Convention on Mutual Assistance in Criminal Matters signed in Strasbourg in 1959, its 1978 Additional Protocol*, the *European Convention on Laundering, Search, Seizure, and Confiscation of Crime signed in Strasbourg in 1990*, and the *Convention on Mutual Assistance in Criminal Matters between the Member States of the European Union, concluded in Brussels in 2000* resulted in the returning of thousands of archaeological findings appearing on illicit antiquities markets in the USA, the UK, Ireland, France, Switzerland, Italy, Belgium, the Netherlands, Germany, Austria, Poland, and Bulgaria (see Millenia Opes). In turn, Romania has contributed to the identification of valuable cultural goods that had illegally been trafficked into the country and has secured their restoration to their European countries of origin.

Cultural goods and artefacts are endangered by natural factors and a series of actions initiated and carried out by humans. Underfunding and neglect of heritage sites, illegal metal detection surveys and excavations and illicit trade in cultural goods are the primary dangers threatening to destroy our cultural heritage.

The illicit trafficking of cultural goods – although not a new phenomenon – has dramatically increased during the past few years, especially in areas affected by armed conflicts and natural disasters. While the destruction, theft, and trafficking of cultural goods can come from a lack of awareness, it is mainly motivated by profit. It is also often linked to a specific ideology that seeks to destroy the collective memory and dismantle people’s identities; this mainly applies to situations created by or related to military conflicts.

Scientific research in well-structured national and European projects that are adequately funded and well-coordinated represents the primary means of saving and enhancing elements of the archaeological heritage and creating a coherent network of archaeological and cultural heritage

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<sup>2</sup> <https://www.interpol.int/Crimes/Cultural-heritage-crime/Protecting-cultural-heritage> and *Assessing Crimes Against Cultural Property 2020. Survey of INTERPOL Member Countries*, September 2021, provided online by INTERPOL.

sites that, ultimately, may prove to be pivotal for the economic and social development of their micro- and macro-regions.

In this sense, the launch of concerted national and international actions for the protection and promotion of the archaeological heritage and the adequate protection of cultural resources from destruction and theft is a priority of the international community and requires the support of scientific and financial bodies.

Joint international projects make these actions more effective and the results more groundbreaking. The costs of inaction are higher than those of action, and the losses suffered by cultural heritage can be significant for local, regional or international factors of culture, economy, and identity.

One of the most useful tools for both law enforcement agencies and civil society is the *Red List of Cultural Objects at Risk* series. The latest of the 18 issues published to date is dedicated to South-East European countries, and its role is to expand their capacity to protect cultural heritage through the contribution of government authorities and civil society.

Besides, the *ID-Art* application, a new tool INTERPOL had developed and made available to the interested community, is an important step in stopping systematic aggression against cultural heritage.<sup>3</sup>

International conventions, official documents of European or international bodies, and cooperation between scientific and judicial communities in a broad and organized framework may successfully create the basis for joint, concerted actions based on new technologies for researching, registering, inventorying, and, thus, enhancing cultural heritage.

### **The Odyssey of a Roman constitution document**

One of the most significant border sites of the Romanian section of the *Danubian limes* is *Troesmis*. Troesmis is located in Tulcea County in Dobrudja, on a high terrace on the right bank of the Măcin arm of the Danube river, about 2.5 km north of Turcoaia village and about 15 km south of the town of Măcin, at a point called "Iglita". The archeological site consists of two fortifications and at least one extended settlement (civil and/or military); a necropolis of considerable size was identified on the plateau between them (Figures 1 and 2). From a chronological point of view, the two fortifications (conventionally called the *Eastern fortress* and the *Western fortress*) were in use during the 4<sup>th</sup>–6<sup>th</sup> centuries AD, while the settlement/settlements were occupied between the 2<sup>nd</sup> and 7<sup>th</sup> centuries AD, as attested by the richness of the archaeological material, especially ceramic finds, and architectural elements, that are still visible today on-site.

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<sup>3</sup> <https://www.interpol.int/Crimes/Cultural-heritage-crime/ID-Art-mobile-app>. The ID-Art application allows direct access to the INTERPOL database of stolen works of art.

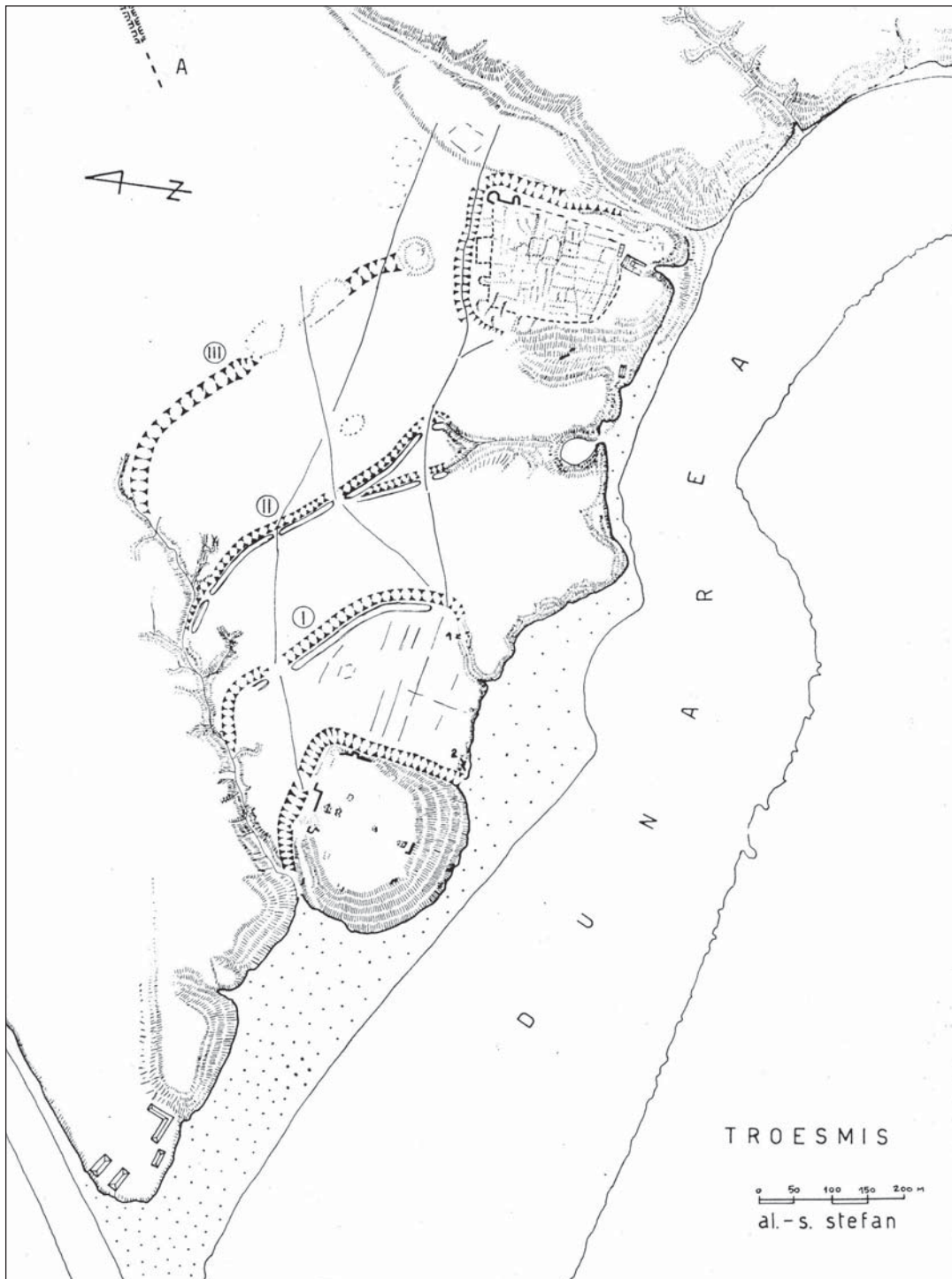


Figure 1. Aerial photo-based survey map of the area of Troesmis (Stefan 1971, 47, fig. 10)



Figure 2. Aerial photo of Troesmis, 2022. Red square marks the place of the illegal excavations in 2002. Based on <https://earth.google.com/web/search/Turcoaia/@45.14554097,28.19096022,41.66063524a,2043.46213317d,35y,-0h,0t,0r/data=CigiJgokCYdltiuLVzBAEYVItiuLVzDAGXaKJBpMcj5AIRxAwW3XHVDA>

The toponym *Troesmis* was first mentioned by Ovidius in *Epistulae ex Ponto* (IV, 9, 78–79) in the context of the events of the year AD 15. However, based on his accounts, it is not possible to determine whether the place was, at the time, a Getic fortification or a garrison of the Odrysian kings with whom Getic tribes had close ties.<sup>4</sup>

While here is still no archaeological information about pre-Roman or early Roman settlements at Troesmis, historical sources attest to the *Legio V Macedonica* (AD 101/102–161) and, possibly, detachments of the *Legio I Italica* having been stationed at Troesmis, most likely in the Trajan era and up to the Marcomannic wars (AD 165–180). Towards the end of the reign of Marcus Aurelius (AD 161–180), one of the settlements at Troesmis is known to have received the status of *municipium* (Alexandrescu–Gugl 2015, 251–252).

The fortifications became abandoned in the 7<sup>th</sup> century AD, simultaneously with similar events recorded in other fortresses/fortifications of the late Roman defensive system of the Danube limes and Dobrudja, due probably to some attacks of Avars and Slavs and a political crisis that shook the Eastern Roman Empire.

E. Engelhard, a representative of France, draw the attention of the European Danube Commission to the archaeological site *Troesmis*; he also initiated research in the area in 1860. Two further French archaeological missions followed the first campaign, in 1865 and 1867. Unfortunately, these early

<sup>4</sup> For an overview of the ancient sources, see Dorutiu-Boilă 1972.

investigations at the end of the 19<sup>th</sup> century focused exclusively on identifying and extracting inscriptions. Hence, very little stratigraphic, descriptive, or chronological data was recorded (Alexandrescu–Gugl 2014, 292, note 7).

Extensive archaeological research was also carried out by teams coordinated by Gr. G. Tocilescu from the National Museum of Antiquities in Bucharest in 1890 and 1898 and by E. Coliu in 1939. However, the field documentation of these excavations, except for the inscriptions published by Gr. Tocilescu, became lost (Tocilescu 1882; Tocilescu 1902). The first stratigraphic observations in the area were made in 1977–1978 during rescue excavations, which allowed the identification of elements of an early and a late Roman settlement, some 10<sup>th</sup>–13<sup>th</sup>-century AD relics, and medieval tombs.<sup>5</sup>

The historical monument site was included in the *List of Historical Monuments* (code TL-I-s-A-05952 – 01-04)<sup>6</sup> as an archaeological site of national interest. After the rescue excavations in 1977–1978, no further authorized archaeological excavations were carried out.

The archaeological site “Fortress of *Troesmis* / *Cetatea Troesmis*” in Turcoaia includes a medieval settlement (8<sup>th</sup>–12<sup>th</sup> centuries AD, Early Medieval period), the *Troesmis* citadel complex, a Roman settlement (Late Roman period) and a related Roman necropolis (1<sup>st</sup>–7<sup>th</sup> centuries AD).<sup>7</sup> Currently, it is subject to protection according to the provisions of the legislation for the protection of historical monuments and archaeological sites.<sup>8</sup>

In the early 2000s, there was an initiative to resume archaeological research in the protected area of *Troesmis* with the financial support of a cultural NGO from Bucharest. In the absence of a person responsible for maintaining research standards, coordinating preliminary research, and exploring the possibilities for a future scientific project (appointed by the ICEM Tulcea, the County Museum, the manager of the archaeological site by law), the diagnostic investigations carried out in the summer of 2002 quickly turned into destructive, machine-aided excavations that affected an area of over 2 ha in a depth of 30–40 cm on the plateau between the two fortifications.

As a result, a vast amount of archaeological findings (ceramic fragments, ancient building materials, and metal objects, including coins) became displaced and separated from their original context. While the damage was being done, the academic community was not aware of the machine-aided operations in the area of the presumed civilian/military settlement at *Troesmis*, but shortly after that the transcription of two new tablets caught the eye of European epigraphers. The related publication was by a W. Eck, Professor of Ancient History at Cologne University, Germany; it comprised the

<sup>5</sup> For the history of *Troesmis* and the state of research, digital research, and geomagnetic prospections, see Alexandrescu and Gugl 2014; 2015.

<sup>6</sup> List regulated by the *Order of the Minister of Culture and Cults no. 2260/2008 regarding the approval of the Methodological Norms for classification and inventory of historical monuments*, text published in the Romania Official Gazette, Part I no. 540 of 17 July 2008.

<sup>7</sup> <https://patrimoni.ro/images/lmi-2015/LMI-TL.pdf>, 444–448.

<sup>8</sup> *Law no. 422/2001 regarding the protection of historical monuments*, republished; *Governmental Decision No. 43/2000 regarding the protection of the archaeological heritage*, republished.

transcriptions of two previously unknown epigraphic documents in Latin, which the author attributed to a *lex municipalis* of the city of *Troesmis*, Province of Lower *Moesia*. Apparently, the related findings were part of a private collection. In 2005, the same information on the same epigraphic texts was published alongside a sales advertisement on eBay, which offered two bronze *tabulae* and provided not only a brief description but also photos of the objects and their texts.<sup>9</sup>

From a scientific point of view, the two *tabulae* were clearly an extraordinary discovery as they were, at that time, unique for the 2<sup>nd</sup> century AD in the Lower Danube region. In 2006, the two artefacts became the property of a notorious art and antique dealer in the United Kingdom, who tacitly accepted a fake provenance document that dated the initial purchase by the seller to a date before the signing of the 1970 UNESCO Convention for the protection of cultural heritage.<sup>10</sup>

The publication of the descriptive data and the photographs of the two artefacts in 2011 provoked a strong reaction from the Romanian judicial authorities. As a result of joint Romanian-British efforts, both *tabulae* were returned to Romania at the beginning of 2015. The two archaeological artefacts were subject to a highly arduous criminal investigation, and by the final decision (no. 388/2020) on 11 June 2020 of the Alba Iulia Court of Appeal, the judge ordered their “special confiscation”. This verdict was based on the indisputable evidence that the *tabulae* were stolen from the archaeological site of *Troesmis* and were illegally sold by a Romanian citizen known to and sentenced by the court.<sup>11</sup> The trafficking of 145 gold coins and two shield bosses (*umbones*), all dated to the 2<sup>nd</sup>–1<sup>st</sup> centuries BC and stolen from other archaeological sites protected by the law, were also part of the same legal investigation and prosecution.

From a scientific point of view, the two archaeological artefacts are part of the *Lex Troesmensium*, the municipal law of the Roman city of *Troesmis*. This legal act, issued by the emperor, contained essential data on political institutions, their functions, and the relations between them. The document is of exceptional value for the research of the Roman legal system and the organization of municipal life in Roman times, most of all because it completes and confirms information in similar texts discovered throughout the Roman Empire, e.g., on different sites in the province of *Baetica* in southern Spain (see *Lex Ursonensis*, the colonial law of the Colonia Iulia Genetiva/Urso as well as the municipal laws of Irni (*Lex Irnitana*), Malaca (*Lex Malacitana*), and Salpensa (*Lex Salpensana*)).<sup>12</sup>

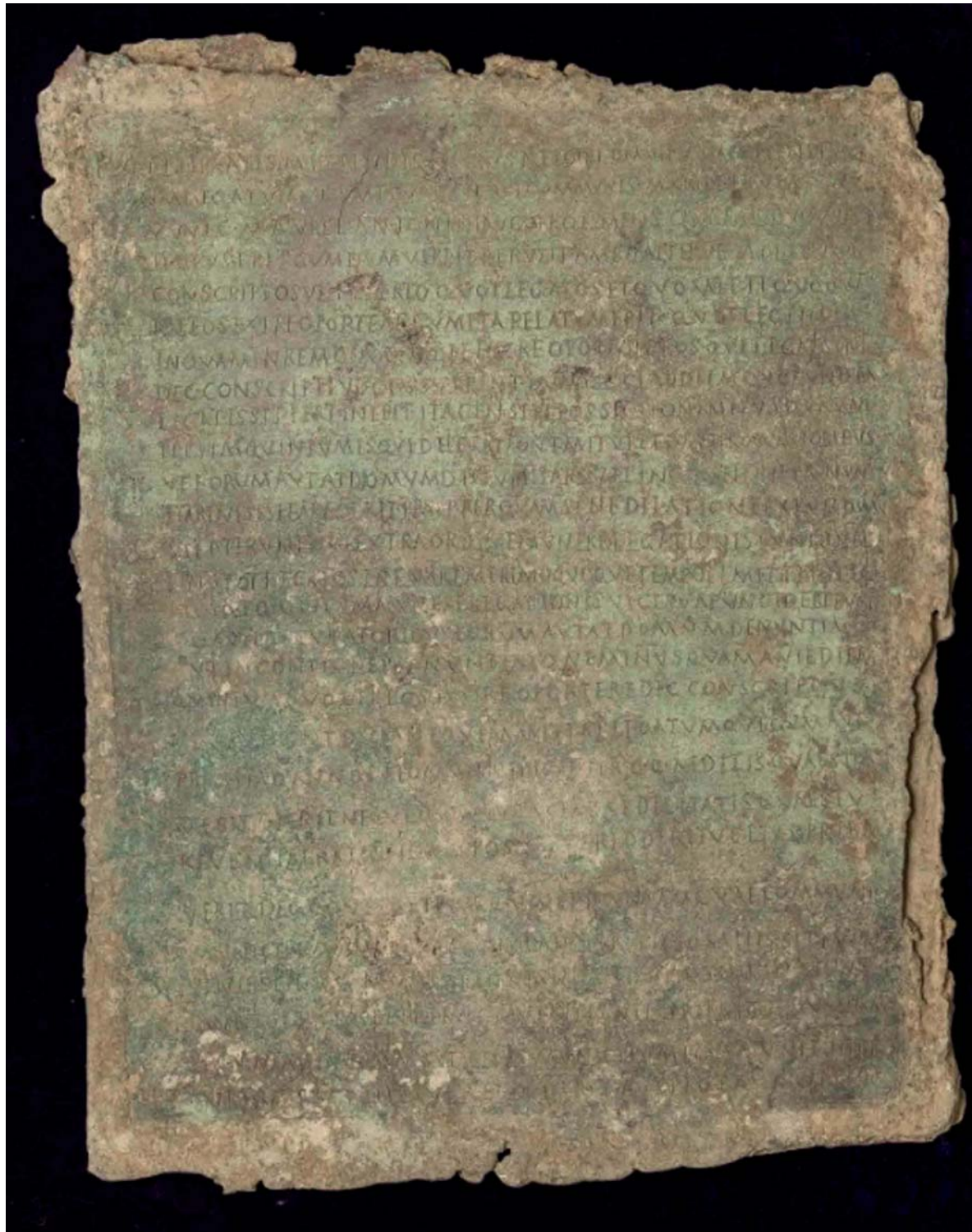
The two *tabulae* from *Troesmis* were part of a much larger document (a complete Roman municipal constitution probably consisted of about 90 such plates) and are considered representative of the

<sup>9</sup> For the first information related to the *tabulae*, see Eck 2013.

<sup>10</sup> *Convention on the measures to be adopted to impede and stop the illicit import and export operations, as well as property transfer of the cultural assets*, adopted by the General Conference of the United Nations Organization for Education, Science and Culture in Paris on 14 November 1970.

<sup>11</sup> [https://portal.just.ro/57/SitePages/Dosar.aspx?id\\_dosar=9700000000100160&id\\_inst=57](https://portal.just.ro/57/SitePages/Dosar.aspx?id_dosar=9700000000100160&id_inst=57) and [https://portal.just.ro/57/SitePages/Dosar.aspx?id\\_dosar=5700000000028647&id\\_inst=57](https://portal.just.ro/57/SitePages/Dosar.aspx?id_dosar=5700000000028647&id_inst=57).

<sup>12</sup> For the transcription and interpretation of the *tabulae*, see Eck 2013; Eck 2014. See Eck 2016 for a complete discussion of the similarities between the *Lex Troesmensium* and the four discoveries from southern Spain.







*Figures 3–4. The two tabulae from Troesmis, Tulcea County, Romania, returned to the country from the United Kingdom in 2015 (photos by M. Simion, an expert involved in the related legal case)*

evolution of municipal legislation. Contrary to the other known municipal laws which date to the Flavian period, the tabulae from Troesmis capture the chronological phase at the end of the 2<sup>nd</sup> century AD (177–180). Furthermore, they are also unparalleled for this region of the Roman Empire. The preserved part of the document contains the full name of the city: *Troesmis, Municipium M(arci) Aureli Antonini et L(ucii) Aureli Commodi Aug(ustorum) Troesm(ensium)*.

Currently, the two exceptional epigraphic assets are classified as elements of the National Cultural Heritage, a legal National Treasure category, and are exhibited at the National Museum of History of Romania (Figures 3–4).

The events of 2002–2015 were a strong signal, marking the need for a change of attitude in the way of administration, protection, and scientific exploitation of some unexplored or insufficiently researched Roman sites. It has also become clear that it is necessary to reveal the full potential of these sites to make them eligible for tourism, thus contributing to local and regional economic development.

The Roman fortresses of the Lower Danube *limes* are currently in the focus of the *LIMES Project*, which aims to prepare detailed documentation for the monuments making up the Roman border on the territory of today's Romania. The Roman *limes* is the largest coherent historical monument in Romania, the territory of which incorporates the longest section – over 1,000 km – of the unique UNESCO monument “*Frontiers of the Roman Empire*” (FRE).<sup>13</sup>

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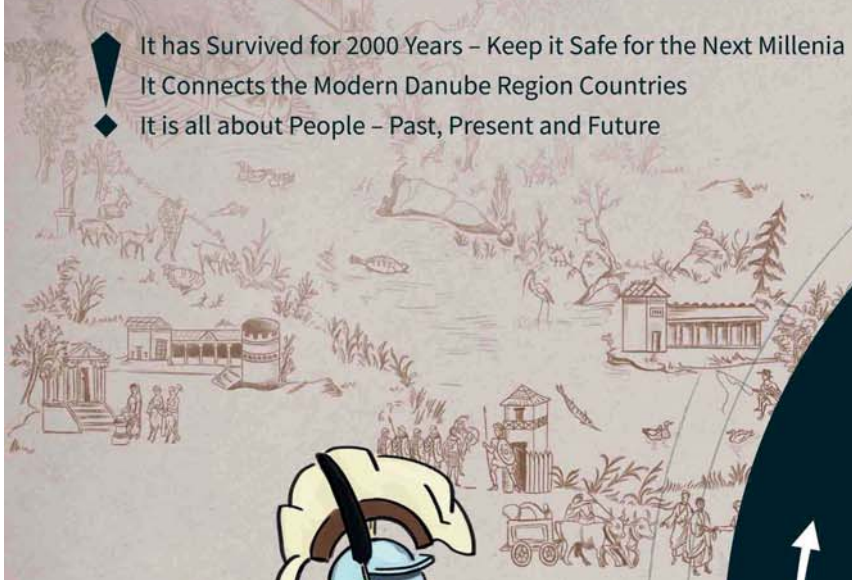
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- Restoration





# Cultural Heritage Management Plans and Disaster Risk Management

Peter STRASSER\*

## **Abstract**

Within the management of cultural heritage sites, disaster risk management plays a crucial role. While Cultural Heritage Management Plans will provide guidelines and an action plan for the protection, development, and promotion of a given heritage site, Disaster Risk Management Plans shall provide guidance for the elimination and mitigation of risks which endanger cultural heritage. Disaster risk management addresses real and potential dangers and foresees actions which shall be undertaken before a disaster occurs (preparatory work) and during a threat takes place (disaster response). Disaster risk management constitutes a complex task. However, due to the various risk scenarios, disaster risk management can only provide guidelines and not a "ready-made recipe". The challenging character of rescue provisions and -operations can be demonstrated by evacuation procedures of museum collections.

## **Keywords**

Cultural property protection, cultural heritage/disaster risk management plans, World Heritage, disaster risk assessment/reduction, museum collections

## **Introduction**

During the last couple of years, concepts for the protection of cultural heritage were widened. While the definition of cultural heritage was characterised by an expansion of the term "cultural heritage" through a broadening of the understanding and perception of cultural heritage, the protection and management of built heritage were greatly influenced by an all-inclusive approach. The all-inclusive approach follows a comprehensive understanding of cultural heritage by highlighting its interconnectivity with many aspects of society and the environment. The development of this approach was influenced by management methods for larger protected areas in the field of nature (e.g., national parks), where the inter-relatedness between nature and human activities was taken into consideration already in the 1960s. Moreover, some twenty years later, UNESCO-World Heritage standards (while also emphasizing the close links between culture and nature) contributed largely to the promotion and implementation of this approach on a global level. The obligation to submit a cultural heritage management plan already as an integrated part of the nomination of a property

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\* Danube University Krems (Austria), Department for Building and Environment.  
peter.strasser@donau-uni.ac.at

(of natural or cultural heritage),<sup>1</sup> which was imposed by the World Heritage Committee in 2005<sup>2</sup>, had a far-reaching influence on the worldwide notion of management standards for built heritage. Meanwhile, cultural heritage management plans (CHMPs) are not only applicable at World Heritage sites but perform an important role also for heritage sites without UNESCO (or other) branding.

CHMPs refer within their fields of action also to disaster risk management, which should be addressed in the management plans. Consequently, while CHMPs will stipulate what to do next on the basis of the action plan (which is an essential part of any management plan), the creation of Disaster Risk Management Plans (DRMPs) is the (possible) outcome of an action plan.

### **A) Cultural Heritage Management Plan**

Cultural Heritage Management Plans (CHMPs) shall enable the protection, development, and promotion of cultural heritage sites. As a guiding principle, CHMPs shall serve two important factors at the same time: the well-being of humans and the protection of cultural heritage. Consequently, during the drafting of the plans the “3 P Approach”<sup>3</sup> should be implemented, which means that a CHMP should 1) be people-centred, 2) be place-based and 3) consider the integrated policy framework. In order to achieve this approach, during the drafting exercise of the CHMP (and afterwards) the following guiding principles have to be put into focus of the drafting efforts: 1) think broad & apply an all-inclusive approach, 2) consider sustainability at all levels and 3) use a participatory approach during the drafting procedure and the implementation of the CHMP. The drafting of a CHMP must not represent an isolated activity but has to take into consideration demands, e.g., of community participation. Moreover, three conditions have to be met during the drafting procedure: 1) support by the political bodies for the drafting of the plan, 2) consent among the drafting team and 3) enough financial and human resources for the drafting exercise. Besides this diversity in management, as every built heritage is of a different character, the CHMP has to be drafted individually with limited use of the “copy and paste” method.

During the drafting procedure, a revision and monitoring procedure vis-à-vis the implementation of the CHMP has to be foreseen: the implementation of the plan itself should be monitored by a supervisory council, and the regulations and proposed actions have to be subject to regular assessments. The assessment should form an integrated part of the CHMP itself. Finally, in case of irregularities during the implementation period, a prepared risk mitigation mechanism should be in place, which shall reduce adverse impacts and damages.

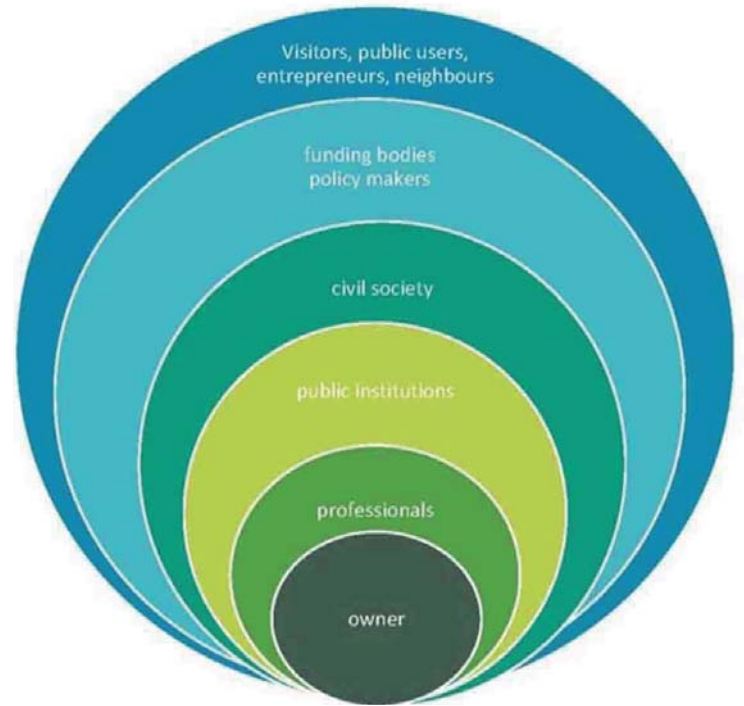
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<sup>1</sup> Operational Guidelines for the Implementation of the World Heritage Convention, para 132, chapter 5 (WHC. 05/2, 2 February 2005), <https://whc.unesco.org/archive/opguide05-en.pdf> (accessed 21 June 2022).

<sup>2</sup> World Heritage Committee, Decision 6 EXT.COM 5.1, Revision of the Operational Guidelines for the Implementation of the World Heritage Convention (29 June-5 July 2003), <https://whc.unesco.org/en/decisions/6165> (accessed 21 June 2022).

<sup>3</sup> OSCE – Mission in Kosovo: Guidebook on Standards for Drafting Cultural Heritage Management Plans. Pristina 2020, p. 31, <https://www.osce.org/mission-in-kosovo/461188> (accessed 16 June 2022).





*Figure 1. Stakeholders involvement:  
Who of these stakeholders should be involved,  
during which step, and to which extent?  
(Graphics: OSCE-Guidebook, p. 36.)*

Although CHMPs will serve sites of different sizes, architecture, construction, and age, their structure follows a uniform model:

- Identification, description and history should provide fundamental information about the site and its characteristics. In order to avoid later discrepancies or lack of information, the description should be undertaken with the most possible accuracy. The description part shall contain the following essential parts which serve as a basis for the analysis:
  - Description
  - Stakeholders: who will be involved in the implementation of the CHMP?
  - Significance of the site: why is the site important? What does it cover that other sites do not offer?
  - Vision: what do we want to achieve for the site in a short-, middle- and long-term perspective?
- The analysis of the available information has to be undertaken under consideration of the appropriate setting, which consists of the administrative, legal, and social environment of the cultural property. It shall reflect the legislative situation and the structure (and carrying capacity) of the administration under consideration of the available resources (staff, budget, and infrastructure) once the CHMP will be implemented. The analysis will be undertaken with further emphasis on future fields of action (e.g., conservation, community participation, tourism, promotion, and – as in our case of special relevance – regarding disaster management).

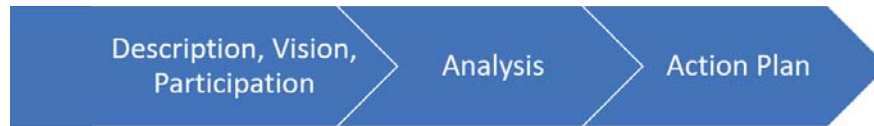


Figure 2. The workflow and structure of a cultural heritage management plan (Graphics: author)

- The analysis leads to the next step, which constitutes the crucial part of the CHMP, the elaboration of the Action Plan. A CHMP without an Action Plan would just represent a collection of data and its analysis but would not indicate any follow-up and elaboration of further steps. Once the individual steps are agreed upon and the financial basis of the individual actions is identified, the Action Plan will contain the “homework” to reach the demands that were formulated in the vision.

## B) Disaster Risk Management

One of the tasks identified in the analysis as an action point could be the elaboration of a Disaster Risk Management Plan (DRMP). A possible approach, which indicates the necessity for a DRMP, is, e.g., the identification of potential or real threats in the analysis, whose occurrence and extent of potential damages should be further assessed and consequently reduced.

### 1) Disaster Management Circle

Disaster Risk Management constitutes principally a permanent task, as “after the disaster is before the next disaster”. Consequently, the disaster management circle consists of three steps: the preparatory phase, disaster response, and the post-disaster mitigation phase.

#### **Preparatory Phase**

The preparatory phase serves several purposes:

- launching of a policy which will enhance cultural property protection, including the adoption of the relevant legislation,
- capacity-building to create institutions which engage in disaster risk preparedness, launch



Figure 3. The “Disaster Management Circle” consists of three steps: the preparation- and prevention phase, the disaster response phase in which the threat occurs, and the recovery- and re-assessment phase. Consequently, disaster risk prevention management constitutes a permanent task (Graphics: author)

awareness-raising campaigns, and provide adequate training to staff from disaster-response units,

- undertaking of risk assessment,
- drafting of Disaster Risk Management Plans (DRMPs),
- set-up of protection measures (preparation of registers, indication of endangered objects, indication of escape routes, availability of packing- and wrapping materials),
- constructing of shelters and other emergency-storage facilities, and
- providing of training opportunities (including regular rescue exercises).

**Disaster Response Phase**

During the disaster emergency phase, trained specialised disaster response units (like fire brigade, police, military forces, and specially trained staff of cultural heritage institutions) react to disasters. After the rescue of visitors and staff, they protect cultural property.

**Post-Disaster Mitigation Phase**

During this phase, the damage will be assessed and repair work undertaken. An important part constitutes the re-assessment of the preparatory measures and emergency responses. At the end of the assessment, the existing Disaster Risk Management Plan shall be updated.

**2) Cultural Property Risk Assessment**

Risk assessment for cultural property (e.g., for monuments, but also archives, libraries, and museums) constitutes a crucial activity during the preparatory phase.

Figure 4. For each of the three phases of emergency management clear tasks are provided (Graphics: author)

Phase	Tasks
Preparatory phase	<ul style="list-style-type: none"> <li>- policy launching</li> <li>- capacity-building for institutions</li> <li>- risk assessment</li> <li>- drafting Disaster Risk Management Plans</li> <li>- setting-up of protection measures</li> <li>- construction of shelters</li> <li>- provide training</li> </ul>
Disaster response phase	Response to emergencies by specialised units
Post-disaster mitigation phase	<ul style="list-style-type: none"> <li>- Assessment of the damages</li> <li>- repair and Rehabilitation</li> <li>- re-assessment of the response- and emergency measures</li> <li>- Revision of the disaster management plan</li> </ul>

The procedure follows three steps:

1. Identification of potential and real threats,
2. analysis of these threats, and
3. final assessment of the situation.

The identification phase enlists real and potential threats. Methods to identify them are, e.g., asking the staff about their observations, checking archival records concerning damages (e.g., correspondences with insurances), and consulting records about anomalies of weather occurrences and chronicles of local history. Also, the inspection of the exhibition and storage rooms in archives, libraries and museums and other heritage sites will provide an overview of the potential and real threats.

During the analysis, it will be asked what can happen. This entails a categorization of the threats:

- Cause of the threat: Are the threats natural disasters or caused by humans? (in the latter case, are they caused intentionally or by accident?)
- How does the threat occur? Suddenly or steadily (e.g., process of decay?)
- When does the threat occur? Once? Regularly?

*Figure 5. The “risk level matrix” correlates the probability of occurrence (vertical column on the left) with the severity of impact (horizontal line at the top). By knowing both parameters (probability and severity), the level of risks (low – medium – high – very high) can be assessed (Graphics: Massey University – University of New Zealand, <https://www.massey.ac.nz/massey/learning/colleges/college-business/school-of-communication-journalism-and-marketing/risk-assessment-form.cfm>, accessed 14 June 2022)*

Likelihood	Consequence				
	Minor	Moderate	Significant	Major	Severe
<b>Almost Certain</b> Is expected to occur	Low	Medium	High	Very High	Very High
<b>Likely</b> Will probably occur in most circumstances	Low	Medium	High	Very High	Very High
<b>Possible</b> Could occur at sometime	Low	Medium	Medium	High	Very High
<b>Unlikely</b> Event hasn't occurred but it could in some circumstances	Low	Low	Medium	Medium	High
<b>Rare</b> Exceptional circumstances only	Low	Low	Low	Medium	Medium

In the final risk assessment, the impact of the disaster will be evaluated:

- What is the probability of occurrence? Practically never or possibly all the time?
- What extent of damage (severe or light) will be the result of the threat? Does the threat usually lead to a catastrophe? A catastrophe constitutes a situation which cannot be mastered anymore by the local population.
- How frequently can disasters occur (number of occurrences/year)?

The extent of a possible risk can be assessed through a risk level matrix by placing the probability of occurrence in relation to the extent of the damage. As a result, three risk levels can be identified (low, significant, and high).

### **3) Scenarios of Threats in a Museum**

On a practical level, the identification of risks in a museum can show the following result: there are threats of sudden occurrence (e.g., fire) or of a permanent, steady nature (e.g., decay of cultural property due to lack of maintenance). The threats, which occur suddenly, are caused either by natural impacts or human behaviour (in the latter case, they can be caused either accidentally or intentionally). Natural impacts are, e.g., fires, floods, landslides, tsunamis, earthquakes, storms and thunderstorms. Human-caused threats are – besides careless damaging and demolition – intentional crimes such as theft and burglary, vandalism, terrorism, destruction, chemical threats, and cybercrime as a particularly modern form of attack against cultural property.

#### ***Threats in Museums – an Exemplary Overview***

The following overview will briefly highlight the risks that may endanger a museum, its staff, visitors, and collections. The issues raised do not constitute a final selection or evaluation but provide a basis for further assessment and discussion.

#### ***Threat: Fires***

During the assessment, a series of questions have to be raised, and the answers analysed in order to obtain the risk level: where can a fire break out: inside/outside of the museum? Is there dangerous infrastructure nearby the museum, like petrol stations and industrial plants? Is the building subject to a higher probability of fire (e.g., wooden architecture)? Are there flammable items in the museum? Does the exhibition (or workshop) display or provide dangerous demonstrations with fire? Is there an appointed warden specifically responsible for fire hazards? Are fire/smog detection, warning and fire-extinguishing systems in place? Is there an evacuation plan for visitors, staff, and cultural goods? Are escape routes established and indicated? Are warning instructions – also in foreign languages – available? With regard to firefighting, are fire extinguishers and adequate water sources available? Are the firefighters trained and do they know the location? Did they already visit the premises of the

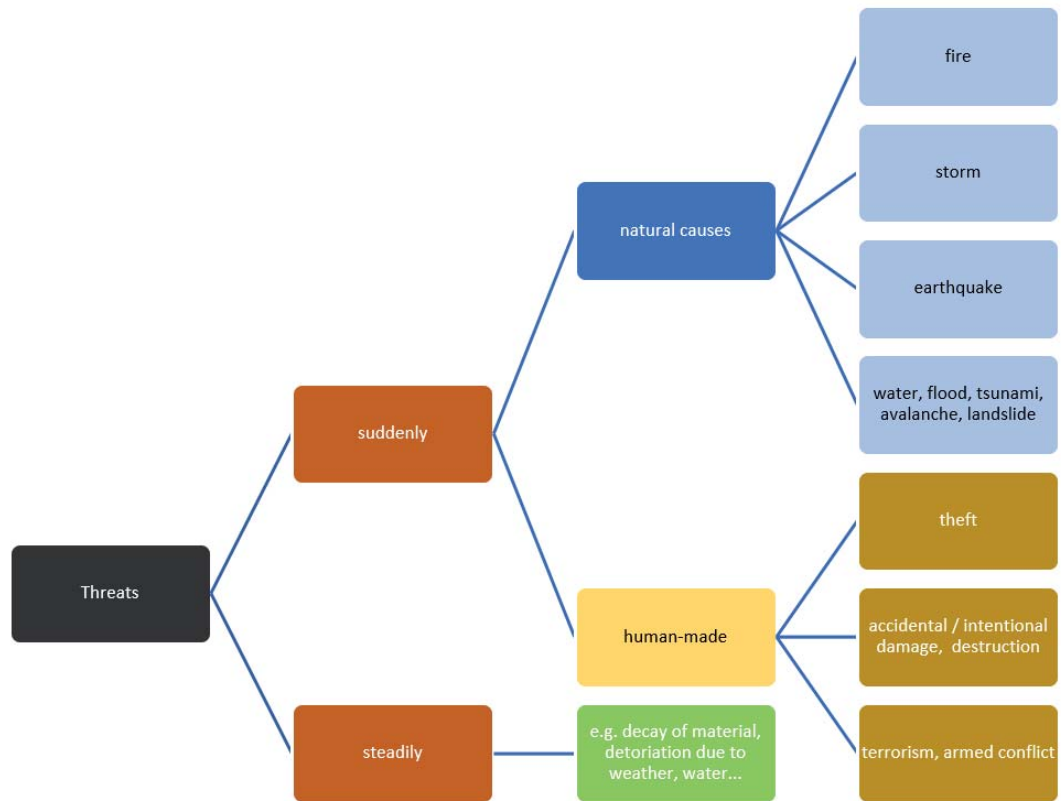


Figure 6. The categorization of threats according to their way of occurrence (suddenly or steadily) and origin (natural causes or human-made). With the latter one, intentional and accidental causes can be distinguished (Graphic: author)

museum (both the exhibitions and storage facilities)? Do the firefighters know the security chief of the museum? Is access for the fire brigade cars, helicopters, etc. possible? Is there a radio/telephone connection that will also work in the case of a disaster?

### **Threat: Earthquakes**

The threat of an earthquake goes in hand with the threat of fire, which likely follows an earthquake. Consequently, fire-precaution measures have to take earthquakes into consideration as well. During an earthquake, vibrations, falling items, and collapsing shelves, display cases, walls, and ceilings can cause severe mechanical damage. During an earthquake, time will not allow rescuing goods, priority has to be given to the life of humans. However, during the preparatory phase, attention should be paid to the stable fixation of displayed and stored goods.

***Threat: Floods, Landslides, Tsunamis***

In the case of floods, landslides, and tsunamis the questions to be asked are: where is the origin of the threat (outside/inside of the museum compound)? Does the water come as a flood caused by rain, river, underground water or by the canal system? Furthermore, is there the possibility of a leak in the building (which is likely the case in old buildings)? Is there an evacuation plan in place? Does the plan foresee different speeds for the evacuation of the goods (fast or slow evacuation depending on the threat: how much time is available to protect the goods from water)? Are there prevention or mitigation measures concerning goods that are particularly sensitive to being exposed to water? How can one deal with damages caused by water (e.g., paper, which requires a special treatment after it got wet)?

***Threat: Chemical Hazards and Handling of Dangerous Goods***

Where are chemical items stored (outside or inside of the museum)? Who is dealing/working with chemicals in the museum? Does this person have adequate training and protection equipment? Are there protection measures in force and safe storage conditions provided? Are the chemicals labelled and properly stored? Are protective suits available? Does the fire brigade know about the chemicals and has information about the chemicals easily available?

***Threat: Damages and Destructions by Visitors, Vandalism, Terrorism, Armed Conflicts***

It was only some months ago, when the probability of an armed conflict in the European context, which can endanger cultural property, seemed to be unimaginable. Meanwhile, the threat of war for humans and cultural property became reality again. However, not only wars can cause threats to cultural property, but also during “daily life” damages and destruction can occur. Damages by careless behaviour can be caused by unattended children and overly active school classes during their visits to cultural sites like museums. In addition, the touching of objects (as a practical approach for a touchable museum) will have adverse impacts on the state of conservation of cultural goods. However, these incidents might be foreseeable to a higher extent as intentional damage and destruction through vandalism and terrorism because damages can be expected with certain categories of visitors. Certain categories of cultural heritage (e.g., religious buildings, objects with a high symbolic character) might be subject to attacks. This has to be taken into account when assessing the potential threat to collections, museums, libraries or archives which could be considered politically sensitive or house single objects that could be considered offensive in the light of certain ideologies. The risk analysis should be undertaken regularly as temporary exhibitions, as well as the changing political situation, can affect the level of threat. To mitigate risks of damage or destruction, the checking of visitors at the entrance and restrictions to enter the exhibition with certain goods (e.g., bags, umbrellas) are common standards today. While video surveillance is a helpful instrument, the threat of terrorism cannot be omitted totally. It has to be remembered, however, that in the frame of terrorist attacks and armed conflicts the saving of human lives deserves absolute priority.

**Threat: Thefts**

Theft of cultural property represents an emerging threat due to growing demands in the (clandestine) art market. In order to assess the risk of theft, e.g., in a museum, the responsible person for security affairs should assess the exhibition and the storage rooms with the "eyes of a thief". Moreover, the following scenarios should be taken into consideration: which are the most attractive items to be stolen, both in the guarded space for exhibitions and the locked but unguarded depot? Which time would be most convenient to commit a theft, during the day with visitors around (who could distract the guardians) or during the night (when the thief is not disturbed)? Moreover, one should take into consideration that thefts often occur in combination with other crimes and can cause collateral damages: (armed) robbery can affect staff and visitors, while a burglary can lead to damage to the exterior and interior of the building. Once theft has occurred, investigations of the art market (e.g., internet and auction houses) have to be undertaken.

**Final Risk Assessment and Risk Management**

After the steps of both the analysis of the threats (what can happen?) and the risk assessment (which of the scenarios are likely and in which intensity can threats occur?), the planning phase has to be initiated. Here, it is most important to 1) determine the measures and 2) determine to what extent those have to be taken in order to avoid or at least mitigate the risks. While for every risk scenario, adequate measures can be identified and elaborated, it must be decided which of all possible measures should be implemented or integrated into the DRMP. The technical feasibility might be in contrast to the financial, logistical, and time-related available means. Moreover, some threats can never be omitted completely (e.g., war, terrorism, earthquakes). Finally, the decision on how and to which extent any given risk should be taken into consideration in the DRMP has to be made at the management level.

**4) Disaster Risk Management Plan (DRMP)**

The DRMP constitutes an instrument to mitigate or even omit risks that might endanger cultural property. The DRMP shall foresee two categories of measures:

- prevention measures and
- emergency measures.

Prevention measures have to be undertaken during the preparatory phase. Their aim is to reduce the probability that an emergency occurs but also to reduce the damaging impact of a threat. Emergency measures will be set as a response to an ongoing threat.

The design of prevention and emergency measures depends on the following parameters:

- the category of the threat,
- the duration of the impact,



- the probability of occurrence, and
- the extent of the damage.

With regard to the extent of damage, certain threats will lead to excessive damage: e.g., fire will not only burn material but also cause indirectly further damage through the water used for extinguishing it. Also, earthquakes cause damage not only through shaking the ground but also through the subsequent outbreak of fires. Consequently, emergency scenarios for fires and earthquakes have to consider comprehensive rescue measures.

Besides these multi-faceted risks, DRMPs shall contribute to the overall disaster risk management. While the CHMPs generally focus on cultural heritage which should be protected, the DRMPs should provide coordination measures with super-ordinated disaster risk strategies (e.g., at state level) and plans and concepts that were established for the cultural heritage site specifically (e.g., visitor and staff safety concepts, maintenance, and regular intervention plans for collections).

### ***The Structure of a DRMP***

A DRMP is not only a “booklet” but should preferably consist of a set of documents and equipment. Therefore, the DRMP should form part of a kind of “cultural property emergency box”. Instead of a bound book, a ring file with pages that can be easily replaced by updated versions is more appropriate to keep the information updated. Moreover, some equipment should complement the cultural property emergency box: a set of keys for the crucial doors (and also for the key box), a hand lamp, a camera, IDs for the proper identification of the emergency staff, and high-visibility jackets that should also indicate the function for cultural protection – preferably in conjunction with the emblem of the 1954 Hague Convention.

The DRMP itself can be structured as follows:

- Operation chart, applied in case an irregularity gets noted. The notice of such an irregularity does not mean that the DRMP has to be launched in its entirety. A certain occurrence (e.g., a display case that is suddenly without illumination) could be met with maintenance measures without triggering an actual emergency. The operation chart will indicate the subsequent steps to be undertaken, e.g., the notification of the head of security or a member of the emergency team. In order to inform the appropriate persons, the DRMP shall also contain
- a list of members of the emergency team to be contacted in an emergency,
- emergency phone numbers,
- a list of useful phone numbers of persons that are not part of the emergency team but might contribute to solving an emergency situation with expertise, tools, and equipment,

- plans of the cultural heritage site (e.g. a museum), including
  - escape routes,
  - positions of the (prioritized) objects,
  - an access map to the buildings and their components,
- prevention-, mitigation, and rescue measures.

### ***Rescue Measures***

Rescue measures, of course, mostly depend on the nature of the incidents, but the time, staff, and equipment available to initiate rescue operations are important factors, too. For collections, evacuation is an appropriate means of disaster response.

### ***Evacuation of Collections***

Evacuation of collections may constitute the most sophisticated operation for the management of a museum. When initiating an evacuation in a museum, the following questions must be addressed:

- Does the situation allow an evacuation at all? Keep in mind that the life of visitors, staff, and rescue personnel has the highest priority.
- Which objects have priority, i.e., need to be rescued first?
- With regard to the ranking, a priority list has to be established as a preparatory measure. "Priority" stickers can be attached to the objects in question already during the preparatory phase.
- The priority of objects to be evacuated depends on several factors. It has to be assessed (well before an incident occurs), whether their priority is based
  - on contractual agreements,
  - on material-specific issues, or
  - on historical, cultural or idealist aspects.
- How much time is available? It makes a difference if a couple of days remain (e.g., if there is a forecast of a flood in a couple of days due to heavy rain) or only a couple of minutes (e.g., if the building is already on fire). The question of time determines if a wider evacuation can be undertaken or if only the most precious objects can be rescued by specialised staff, e.g., by a fire brigade with protective respirators.

The execution of an evacuation plan has to be trained beforehand. Its logic has to be understandable also for the rescue staff, who are not familiar with cultural heritage or the management of cultural heritage institutions (e.g., a fire brigade). It remains to the discretion of the museum's management if the "priority" labels should be fixed already before any occurrence of a disaster or just during the rescue operation. In the first case, these labels could serve thieves and other perpetrators as indicators of what is valuable. During the exercise, it has to be verified if objects can fit through the doors or

Figure 7. ICOM Austria prepared the label “Priority Kulturgut Evakuierung” for museum items. It can be attached to objects which deserve a priority evacuation (Photo: <http://icom-oesterreich.at/page/icom-plakette-zur-evakuierung-von-kulturgut>)



have to be disassembled. During a flood, it could be an alternative to carry items up to a higher floor instead of transporting them to a shelter outside the museum complex. Also, the structure of the depot of cultural goods at a museum can be designed in accordance with the order of evacuation in case of an emergency: the first objects to be evacuated can be stored in the first row of the depot shelving. There are many other aspects which should be considered during an evacuation of a museum:

- Who will take the objects out of the building? Can this only be done by museum staff or also by other persons?
- Is there a kind of interim depot to store the objects before their transport to a shelter will take place, or will they be loaded directly into trucks?
- If an interim depot exists, is this interim depot guarded and who will guard it?
- In order to prevent thefts and other losses during storage in the interim depot and transport, the staff has to be equipped with easily visible ID cards. Moreover, an inventory of all objects has to be prepared before they are sent off to the shelter.
- Who will transport the goods to the shelter? Are the transport capacities quickly available? Is there a need for transport under specialised conditions? (e.g., refrigerated transport vehicles for wet books and archival material)
- Although this might seem marginal at first glance, the availability of rest places and refreshments for the evacuation staff is, finally, a vital part of rescue missions as well.

While the disaster risk management plan will outline the scenario of an evacuation, training through regular rehearsals is essential. Only through reality scenarios can the feasibility of the planned rescue measures be verified. The results of the assessments have to be regularly integrated into the disaster plans.

## Concluding Remarks

Within the management of cultural heritage, disaster prevention and mitigation play a crucial role. A cultural heritage management plan (CHMP) will place disaster risk management in the context of other fields of action as part of the proper management of cultural property. However, while these plans can provide a good starting point for any disaster measures, their testing under real scenarios is essential. Regular rehearsals provide not only new experiences but underline a key principle of disaster risk management for cultural heritage: it is a coordination task and teamwork-oriented!

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The Swiss "Bundesamt für Bevölkerungsschutz" (Federal Office for Civil Protection, Berne/Switzerland) publishes its review "KGS Forum" (with summaries in English) and much other relevant information (e.g. manuals, guidelines) about cultural property protection at <https://www.babs.admin.ch/de/aufgabenbabs/kgs/prints.html#ui-collapse-53>.

# Risk Assessment and Sustainable Protection of Cultural Heritage in Changing Environment

Alessandra BONAZZA\*

## **Abstract**

This paper presents an overview of the agendas, results, and impacts of the Interreg Central Europe ProteCHt2save project, which was completed in 2020 and constitutes an important milestone in up-to-date protection measures for cultural heritage, a topic that the Interreg Living Danube Limes project also builds upon. The main objective of the Interreg Central Europe ProteCHt2save project was to contribute to the improvement of capacities of the public and private sectors to mitigate the impacts of climate change and natural hazards on cultural heritage sites, structures, and artefacts. The project focused primarily on the development of feasible and tailored solutions for building the resilience of cultural heritage to floods, events of heavy rain, and fire. ProteCHt2save outputs aimed at improving protection, management, and sustainable use of the cultural heritage, as well as to prepare measures and plans in case of emergencies, by means of ICT solutions and tools (Web-GIS and decision support tool, best practices manual, handbook) for risk management and protection of cultural heritage in Central Europe. Pilot actions selected on the base of risk-prone areas and cultural heritage vulnerabilities fostered the implementation and the assessment of the developed strategies, improving the disaster risk management plans and policies in many CE Municipalities.

## **Keywords**

Climate change, vulnerability, Web GIS tool, risk mapping, preparedness

## **1. Introduction**

Central European countries are characterized by a high concentration of monuments, cultural districts, and built and natural heritage to be preserved. The level of the existing institutional framework for the promotion of cultural heritage and creativity is improving, but there are still emerging problems that should be solved, such as 1. lack of coherent action plans, mechanisms for cooperation between the various types and levels of administration; 2. small popularization of knowledge concerning the protection of monuments and cultural heritage in general; 3. frequent legal changes in the field of cultural heritage management. In addition, the most recent scientific research has acknowledged that climate change is an inevitable reality that must be addressed to minimize its impact on different sectors. One of these sectors is cultural heritage in terms of historical buildings and landmarks, which could be affected by increased rain, flooding, drought, or other changing climatic conditions. Examples for this category in Central Europe are the UNESCO site of the historical center of Ferrara in Italy and the larger cultural territory of the Bielsko-Biala District in Poland (Figures 1 and 2).

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\* Institute of Atmospheric Sciences and Climate, National Research Council of Italy. a.bonazza@isac.cnr.it



*Figure 1. Rainstorm in the historic center of Ferrara (Italy) in September 2019 (@estense.com, <https://www.estense.com/?p=802125>)*



*Figure 2. The Roman Catholic church of the Exaltation of the Holy Cross in the Bielsko-Biala District, a ProteCHt2save case study in Poland (courtesy of ProteCHt2save partners Bielsko – Biala District and Regional Development Agency Bielsko-Biala)*

In spite of the widely recognized increased impact of climate change particularly in relation to the intensity and frequency of hydro-meteorological events, only a very small number of cultural heritage institutions have available emergency plans dedicated to the evacuation of cultural properties in the case of natural disasters, and even fewer have preparedness plans (Bonazza et al. 2018). ProteCHt2save applied a holistic approach to tackle risks not already considered and/or issues not effectively developed by previous projects following a “management spiral” approach for increasing the resilience capacity of cultural heritage to climate change. The issue was approached on three levels of spatial scale: a territory or area, a building or complex of buildings, and materials and artefacts. Events associated with hydro-meteorological and climatic extremes (heavy rain/storm and flood) were taken into account. Monumental complexes with related collections located in urban and coastal areas were of primary consideration. A reduction of the natural complexity of the issue was achieved by means of the identification of the most critical characteristics. The present-day knowledge of climatology and the vulnerability of cultural heritage has been critically elaborated and harmonized, and consistent information based on a wide range of available climate data sets have been integrated to suggest and set up policies and recommendations at the local and regional level (Cacciotti et al. 2021; Bonazza et al. 2021). Indeed, ProteCHt2save went beyond the state of the art by developing preparedness measures and emergency plans based on the identification of risk-prone areas and cultural heritage criticalities. Through an action learning process and feedback evaluation with pilot sites in the participating regions, the developed emergency plans have been defined and their adoption by the Municipalities involved in the project has been encouraged. In addition, the transnational character of the proposed solutions ensured their transferability to other regions in Central Europe. Since the beginning, ProteCHt2save sought and carried out synergies with other projects mainly focused on the protection and safeguarding of cultural heritage at risk. A joint event with the project funded by DG-EAC “Safeguarding Cultural Heritage from Natural and Man-Made Disasters” has been organized at the Danube University in Krems (Austria) in 2018, which also included the participation of H2020 and JPI-CH projects (HERACLES, PROTHEGO). In addition, contributions from other projects (such as LIFE-RainBo, Interreg central RUINS, Cheers Alpine Space) were comprised by all international conferences organized in the framework of the project. The major aim of these coordination activities was to foster the increase and transfer of knowledge on the state of progress of the research on the topic, the identification of the still-existing gaps and needs of stakeholders, the capitalization of the results already achieved, and the prioritization of the subsequent activities.

The ProteCHt2save project was co-funded by the Interreg Central Europe program with a contribution of €1.787.110 (Total budget: €2.150.549), and was developed by an EU consortium composed of the following ten institutes and organizations: National Research Council of Italy – Institute of Atmospheric Sciences and Climate (IT); Institute of Theoretical and Applied Mechanics of the Czech Academy of Sciences (CZ); University for Continuing Education Krems Danube University Krems (AT); Bielsko – Biala District (PL); Regional Development Agency Bielsko-Biala (PL); Municipality of Ferrara (IT); Municipal District Praha – Troja (CZ); Government of Baranya County (HU); City of Kaštelna (HR); Municipality of Kocevje (SL).

## 2. ProteCHt2save Outputs and Results

Outputs and results produced in ProteCHt2save aimed at an improved protection and management and a sustainable use of the cultural heritage, as well as at its valorization in a changing environment. First of all, a **Web-GIS tool** for risk mapping has been developed to support policy and decision-makers in the development of measures and strategies of preparedness with short and long-term perspectives, aiming at the protection of cultural heritage in Central Europe that is exposed to extreme events linked to climate change (particularly heavy rains, floods, and fires due to drought periods) (available at <https://www.protecht2save-wgt.eu/>). The Web GIS tool visualizes the euro-mediterranean regions on 25-km-resolution interactive risk maps (1987–2016) referring to heavy rain, flooding, and drought. In addition, risk maps with a spatial resolution of 12 x 12 km for the same climate extreme events are available for two future 30-year periods (2021–2050 and 2071–2100). They are compared to reference maps representing data from 1976–2005 and apply both stabilized and pessimistic scenarios (Figure 3; compare to Sardella et al. 2020).

A **decision support tool** has been produced for the analysis of the critical points (physical and managerial) determining the vulnerability of cultural heritage (particularly monumental complexes and museums in historic centers) as well as a **manual** of good and bad practices for the management of cultural heritage at risk, which aims to support policy and decision-makers (Drdácký M. 2020). A **rate of vulnerability** has been determined for each pilot site in the target regions and integrated into the Web GIS tool for risk assessment (Bonazza et al. 2021; Cacciotti et al. 2021).

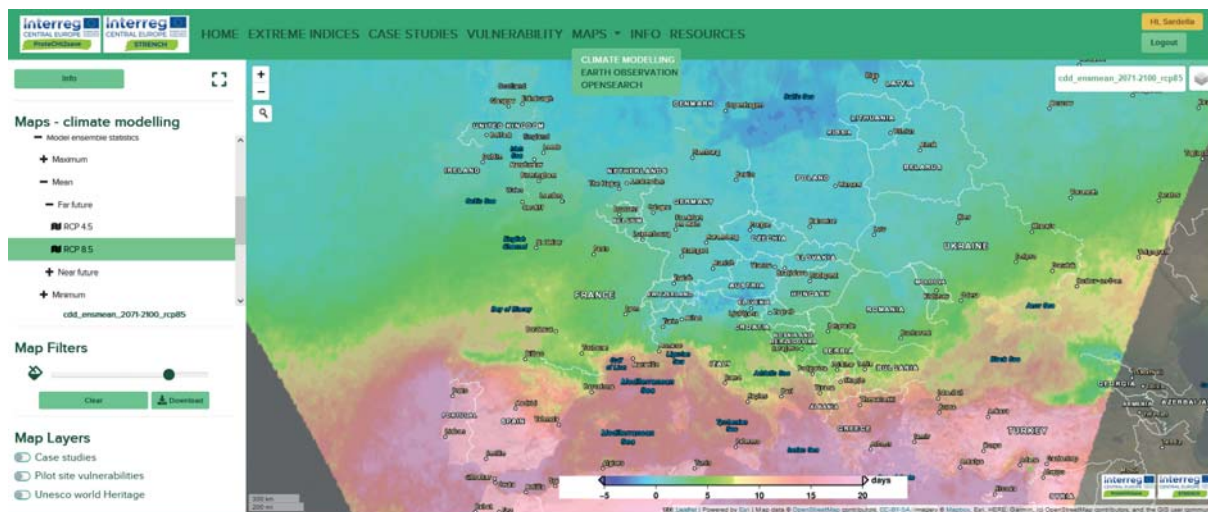


Figure 3. Projection in the far future (2071–2100) of the CDD climate index (maximum number of consecutive dry days), pessimistic scenario (RCP8.5) (<https://www.protecht2save-wgt.eu/>). The CDD climate index is applied for mapping the likelihood of the occurrence of drought periods



Transnational cooperation has been fundamental for both the identification of still existing barriers and gaps that are present at the territorial level in the involved regions and the development of coordinated actions to be undertaken to overcome them. It has been fundamental for the testing at the pilot sites, the definition of the transnational strategies for cultural heritage in emergencies, and the setting up of a **cultural heritage rescue team** (Figure 4; compare to Bonazza et al. 2022). As far as the project outcomes' sustainability is concerned, all tools are available for free, in particular:

- A Web-GIS tool for risk mapping for Cultural Heritage Protection in Central Europe under special consideration of cultural heritage that is exposed to extreme events linked to climate change (particularly heavy rains, floods, and fires due to drought periods); a subscription to this tool is possible at <https://www.protecht2save-wgt.eu/>.
- A study on rate of vulnerability as determined for each of the 7 pilot sites, integrated into the Web-GIS tool for the risk assessment.
- A decision support tool for the analysis of the criticalities determining the vulnerability of cultural heritage.
- A manual of good and bad practices for the management of cultural heritage at risk to support policy and decision-makers.

Figure 4. A simulation exercise for preparedness for heavy rain events on the square of the San Giorgio Cathedral in Ferrara, Italy (as part of the activities performed at pilot sites in the framework of the ProteCHt2save project)



- A manual for cultural heritage managers.
- A handbook on transnational rescue procedures.
- A knowledge transfer video game named "*CHRT: Vltava Rising*" to support the establishment of cultural heritage rescue teams; the video game is available on online platforms and common app stores.

Moreover, the protection and promotion of cultural heritage achieved in ProteCHt2save contribute directly to many of the Sustainable Development Goals adopted by the United Nations in the Agenda 2030 (SDGs 11, 13, 8, 4, 10, 5, 16, 3, 17).

### **3. ProteCHt2save Impacts and Benefits for Target Groups**

By the development of the foreseen outputs during its project life cycle, ProteCHt2save resulted in an improvement of the capacities of Central European municipalities in strengthening the resilience of cultural heritage to flood, heavy rain, and drought impact linked to climate change. This has been achieved by the implementation of innovative tools (e.g., Web-GIS tool for risk mapping, risk maps, manual for mitigation and adaptation, decision support tool for the identification of criticalities, manual of good and bad practices, cultural heritage rescue team), strategies, and action plans (e.g., transnational strategies for cultural heritage protection in emergencies, local emergency plans, preparedness strategies) for the management of cultural heritage at risk, based on a deep understanding at the local level of the environmental, cultural, and managerial context of the heritage sites under analysis. The target groups (such as policy and decision-makers responsible for disaster mitigation and safeguarding of cultural heritage assets, public authorities, the scientific community, and citizens and local communities) benefited from: i) an increase in the awareness of the still existing gaps in the protection of cultural heritage, ii) tools for the management of cultural heritage in emergencies, and iii) preparedness measures and evacuation plans specifically dedicated to the safeguarding of cultural heritage that is exposed to extreme climate conditions (flood, drought, heavy rain). Particularly the municipalities involved in the project have committed to integrating the transnational strategies developed and tested at the pilot sites and specifically dedicated themselves to the protection of cultural heritage in their local plan of risk management through coordinated and agreed actions. This has been ensured by signing a Memorandum of Understanding among the municipalities involved in the project. The inclusion of transnational strategies for cultural heritage protection in the existing plans for risk management and reduction is recommended to reduce the rate of the cultural heritage's vulnerability to climate change. As a final result of the project, seven institutions adopted the setup strategies for the protection of cultural heritage in the risk-prone areas of the target regions to integrate the existing plans and programmes towards the prevention of floods, heavy rains, and drought periods. The setup strategies were tailored on the basis of the needs and constraints of the target areas. In addition, seven institutions from the target regions were supported and trained for the development of innovative management models based on the use and application of the tools developed in the project.

The inventory of existing archives, maps, databases, and model outputs for risk evaluation and the development of local maps for risk management included in the Web-GIS tool will have an impact mainly on the Municipalities, which will share the tool and its potential with the dedicated offices. The political level and the decision-makers involved in the training for the Web-GIS tool and local focus groups engaged in the diverse communication activities ensured the adoption of the methodology for the identification of risk areas, the political support, and the institutional-level follow-up. The involvement of sectoral agencies, service providers, and public authorities at different levels was a prerequisite for the development of the decision support tool for the harmonization of data related to cultural heritage vulnerability since they provided input and data for its institutional and financial support.

The manual of good and bad practices for cultural heritage protection in the risk management process setup has been developed based on the collaboration with rescue departments, civil protection agencies, and institutions for the preservation of cultural heritage buildings. The document can be shared with other partners outside the project and in Central Europe and it can be enriched with new examples and data collected in follow-up projects.

The transnational strategies for cultural heritage protection in emergencies and the handbook will be easily transferred to other municipalities/regional authorities since floods and heavy rains are threatening almost all the city centers across Europe today, of course, including those with a significant cultural heritage. The need of preserving the cultural heritage of the areas mentioned above, especially also from the perspective of promoting tourism, is considered pivotal from the political and institutional point of view, and funds devoted to promoting tourism can be considered as acting in synergy with those allocated for cultural heritage protection. In addition, the signed Memorandum of Understanding will have an impact already in a mid-term perspective, fostering collaboration and ensuring the application of specific actions by the decision-makers.

## **Acknowledgments**

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**Improving the Visibility of Historical Sites along  
the Danube Limes**





# The hidden traces of the Roman auxiliary fort of Matrica in Hungary

## Historical value and current potential<sup>1</sup>

Zsuzsanna Emília KISS\*, Gergő Máté KOVÁCS\*\* and Zorán VUKOSZÁVLYEV\*\*\*

### **Abstract**

Százhalombatta is one of the youngest industrial towns in Hungary; it celebrated its 50<sup>th</sup> anniversary in 2021. The archaeological site of Százhalombatta/*Matrica*, however, has a much longer history than that, a history that even predates the foundation of the Roman military installations of Matrica. Roman Matrica is located in the southern part of Százhalombatta, a town established in different periods: today, its fabric is interwoven with the relics of an 18<sup>th</sup>-century settlement, a modern town with post-war Socialist blocks, and areas of industrialisation from the 1970s. The term ‘Százhalom’ literally means “one hundred tumuli”, referring to the Early Iron Age (7–6<sup>th</sup> centuries BC) tumulus field at the northern fringes of the town.

Yet, the historical value of the heritage site is not limited to the Iron Age since it was connected to an important route also during the Roman period. As an auxiliary *castellum* on the so-called *ripa*, the *limes* route near the Danube, it had a border function in a strong network of settlements lining up along the road and the river.

The town’s anniversary and the Living Danube Limes project presented possibilities to develop the site, bringing together millennia of history, scientific research, 21<sup>st</sup>-century tourism incentives, and protective measures to bring back the Roman site centre stage. Involving different target groups and connecting them with diverse aspects of scientific research, tourism and living history may offer new possibilities not only for well-known historic sites of Hungary but also for areas rarely in the spotlight. The present article outlines these possibilities and the current potential of the Roman cultural heritage in Százhalombatta.

### **Keywords**

Százhalombatta, Matrica, auxiliary *castellum*, monument preservation

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<sup>1</sup> Budapest University of Technology and Economics, Faculty of Architecture, Department of History of Architecture and Monument Preservation, Műegyetem rkp. 3. K 282, 1111 Budapest, Hungary.

The Budapest University of Technology and Economics is a project partner in Living Danube Limes

\* Lecturer

\*\* Ph.D., Research Fellow

\*\*\* Ph.D., Associate Professor

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## 1. Roman Matrica

The *castellum* of Matrica was built in the first development phase of the Pannonian Limes (1<sup>st</sup>–2<sup>nd</sup> centuries AD). The demand for constructing a military camp at this point of the river Danube arose after Emperor Trajan's (AD 98–117) conquest of Dacia when the Sarmatians attacked Pannonia (Soproni 1985). As the site is located on a lower terrace of the Danube instead of a hilltop or high plateau, it bears no significant topographical characteristics. Still, Matrica and its auxiliary fort became a strategic point, not least because their location facilitated river crossing. However, there was a high plateau north of Matrica; its main occupation phase can be dated to the Iron Age. The time of Matrica's construction can be narrowed down to AD 106–118/19 (Borhy 2014, 49). It became the third in the line of auxiliary *castellums* south of the legionary fort of Aquincum (besides Nagytétény/*Campona* and Érd), with a fort that featured a palisade wall constructed of compacted soil and timber and was certainly in use between AD 106–179. Conclusively, compared to other parts of Pannonia, the area of Százhalombatta was occupied quite late by the Romans (Visy 1988, 57–58).

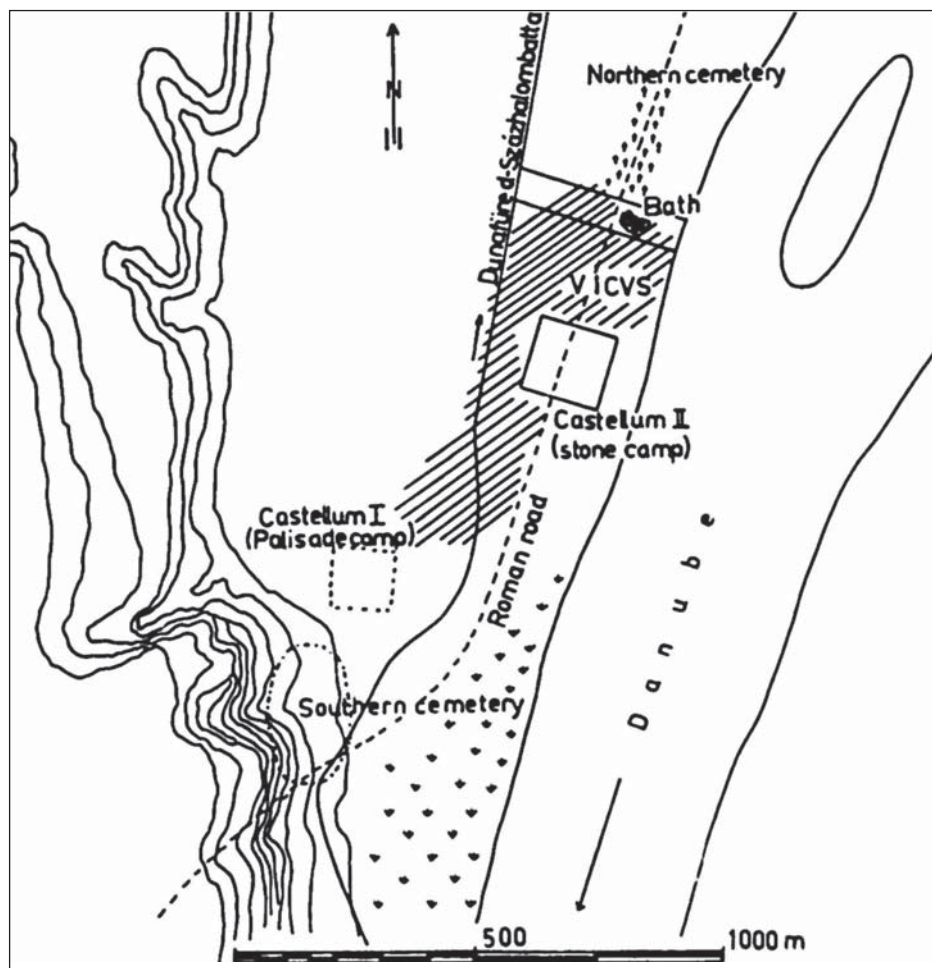


Figure 1. The castellum, the vicus, the Roman baths and the cemetery of Matrica on a map of the Dunafüred district of Százhalombatta. (J. Topál: The southern cemetery of Matrica, Budapest, 1981, 8)

A *vicus* was located along a secondary road leading to the *main limes* road that most probably ran through the military camp. The ruins of the baths, which are still visible today, are thought to have been used by both soldiers of the *castrum* and inhabitants of the *vicus* (Kovács 1996, 56). There may have been several *villas* near the camp, but locating them has remained a task for future excavations (Figure 1).

By the late Roman period, the tripartite defensive system of Pannonia became fully developed. This system consisted of internal fortifications west of the Danube, legionary and auxiliary camps and watchtowers along the Danube, and a Sarmatian system of fortifications, the so-called 'Csörsz Trench' or 'Devil's Trench,' in the Barbaricum east of the Danube (Borhy 2014, 132–133). Barbarian attacks, however, became more frequent, and the population of Matrica abandoned the settlement after a while; finally, in the 5<sup>th</sup> century AD, the military camp became occupied by the Huns.

The identification of Matrica is based on both written sources and archaeological findings. According to the *Itinerarium Antonini*, Matrica was located "XXIII Roman miles from Aquincum", while the *Notitia Dignitatum* mentions Matrica as a garrison (Kovács 1996, 44). In addition to these sources, two archaeological findings prove that the remains at modern Százhalombatta are identical to the Roman site of Matrica: a tile with *Matri(ca)* stamped on it and an altar from the 3<sup>rd</sup> century AD dedicated "for the safety of *cives Romani* of the *territorium* of Matrica, by Aelius Victor, a veteran of the *legio II Adiutrix*", erected in AD 267 or 268 (Figure 2) [... *pro salute*] / *civerom[an]/or(um)* (sic) *terr[it]or[i] / Matr[ic]ensium*, / *Ael[ius] Vic[t]or, vet[er]anus [leg[ionis]] / II Ad[i]utricis], / Pater[no] .....*] (Soproni 1998, 15).

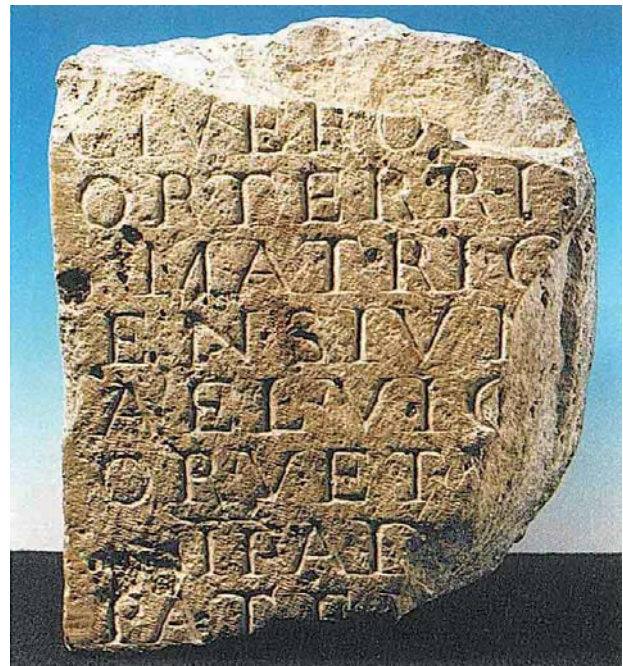


Figure 2. Roman altar with a mention of Matrica  
(third line from above)  
(after Soproni 1998, 15).

Around AD 178, during the great Marcomannic-Sarmatian war, the first timber fort was destroyed and later rebuilt in stone in the same place, with similar extents. A brick of the *cohors milliaria Maurorum*, found at the northern gatehouse of the stone *castellum*, hints at the general reconstruction's date and the involvement of this particular military unit in the works.<sup>2</sup> The camp's area was 155 x 155 m, and the thin fort walls were reinforced with a four metre-wide internal earthwork and piers (Kovács 1996, 45). Such internal piers were rare in Roman forts but can be observed occasionally in the territory of Pannonia, e.g., in Aquincum and the camp of Celemantia (Leányvár) (Kovács 1996, 46).

A military *vicus* was located northwest of the fort. Merchants, craftsmen, and the soldiers' families settled there, together with the local Celtic population that preserved their identity, at least in their names, even at the beginning of the 3<sup>rd</sup> century AD. Under the reign of Hadrian (AD 110–138), the settlement was provided with its own land (*territorium*) managed by an organization consisting of Roman citizens and elected officers. An altar excavated in the territory of the *vicus* has recorded this fact, with an inscription containing the term "*veterani et cives Romani consistentes*" (Kovács 1996, 51–52).

## 2. Research history of Matrica

The first excavated structure in the area of Matrica was the Roman baths. Its relics were known and recorded by Gyula Kereskényi and Flóris Rómer already in 1872 (Hajnóczi and Mezős 1992, 72), while today, that is still the only visible structure on-site. The first comprehensive excavation, focusing mainly on unearthing the southern and western gates, was conducted by Árpád Dormuth in 1943. The results were not published, although the Székesfehérvár Museum has preserved most field notes and sketches and the finds. During a rescue excavation in 1953 in the area of the military *vicus* north of the camp, András Mócsy cleaned and sketched the trench made by Dormuth at the southern corner turret and published his results in 1955 (Mócsy 1955). Judit Topál excavated the southern cemetery of Matrica between 1971 and 1974 (Topál 1981a; Topál 1981b). In 1973, the ruins of the baths, excavated by Károly Sági, Judit Topál, and András Mócsy in 1972, received a protective roof that was constructed based on a design by Gyula Hajnóczi and Gyula Istvánfi from the University of Technology in Budapest (Hajnóczi and Mezős 1992, 72).

In 1993, Péter Kovács initiated a full-scale project to excavate the area of the military fort (Kovács 1993; Kovács 1994–95; Kovács 1995a; Kovács 1995b; Kovács 1995c; Kovács 1996; Kovács 1999). Until 1996, the most important findings were the eastern and northern gates (*porta principalis dextra* and *porta decumana*), the northwestern corner tower, the *porta praetoria*, and the headquarters building of the camp (*principia*). In addition, when cutting through the road around the *principia*, they found

<sup>2</sup> Originally, it may have been placed in the basilica before the entrance of the *aedes*. Earlier, a base (of Maximinus Thrax) erected by cohort milliaria Maurorum Maximiniana was found by "the entrance of (the last century) ramparts" (in the area of the headquarter-building) by Gy. Kereskényi. It may also have stood in the basilica. See Kovács 1999, 70.

a 3 m wide and 25 cm thick rammed pebble road with a foundation similar to the *via praetoria*. The rescue excavations in the area of the military *vicus* have been completed; the works recovered many objects and building materials, with a shrine (*aedes*) found under the late 18<sup>th</sup>-century Napoleonic rampart (see below) among them.

### 3. Visible relics

While the walls of the Roman fort still stood high in the 18<sup>th</sup> and 19<sup>th</sup> centuries, the fort, the *vicus*, the surrounding roads, and the cemeteries all became buried by today. Besides some ramparts erected during the Napoleonic wars, the only archaeological structures still visible above ground are the remains of the Roman baths north of the military camp (Figure 3). The 0.5–1 m high wall remains clearly outline the baths' layout. In the 1970s, the ruins were covered with a protective roof.

Findings from the archaeological excavations in Matrica are exhibited in the Matrica Museum in Százhalombatta (Figure 4). One of them is the tombstone of a military trumpeter's family from the 3<sup>rd</sup> century AD, found 800 m west of the Roman military camp, by the foot of the loess plateau next to the *castellum* (Soproni 1998, 25). The tombstone's inscription (Figure 5) reads: "*To the spirits of the dead. Claudius Ingenuus, the trumpeter of the cohort Maurorum, and his wife Flavia Paulina erected*

Figure 3. The remains of the Roman baths in Matrica with their protective roof structure.  
(photo: Zsuzsanna Emília Kiss, 2021)





Figure 4. Ornamented cornice from the exhibition of the Matrica Museum in Százhalombatta. (photo: Zsuzsanna Emília Kiss and Gergő Máté Kovács, 2021)

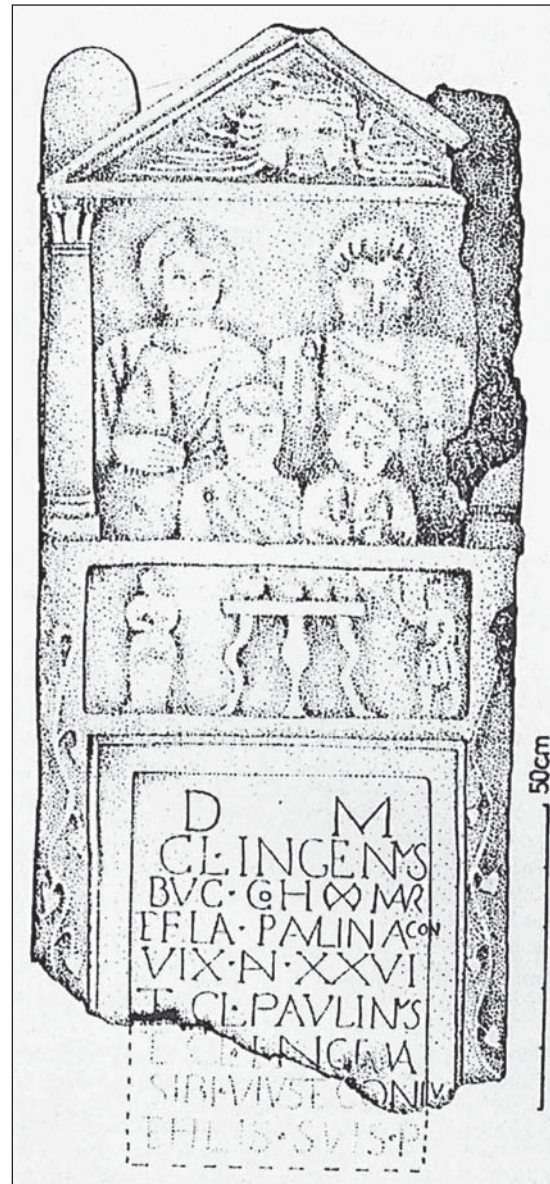


Figure 5. Tombstone of the family of a military trumpeter from Matrica. (after Soproni 1998, 25)



Figure 6. Roman re-enactors in the garden of the Matrica Museum  
(© Matrica Museum, 2016)

for themselves and their children Claudius Paulinus and Claudia Ingenua during their lifetime" *"D(is) M(anibus) / Cl(audius) Ingenu(u)s / buc(inator) coh(ortis) (milliariae) Maur(or)um / et Fla(via) Paulina con(iunx) / vix(it) an(nos) XXVI / et Cl(audius) Paulinus / et Cl(audia) Ingenua / [sibi vivus et c]oniu(gi) / [et filiis suis p(osuit)]."*

The open-air Archaeological Park of the Matrica Museum was opened in 1996 as the first interactive site presenting prehistoric monuments in Hungary (Jerem *et al.* 2014). The importance of prehistory for the area is demonstrated by the name 'Százhalombatta,' with 'Százhalom' literally meaning 'one hundred tumuli,' referring to the Early Iron Age tumulus field in the town's surroundings. In the 3.5-hectare-large park, visitors can personally experience prehistoric life during family days with craft activities and workshops. In addition to the authentic reconstructions of prehistoric buildings, the park also hosts archaeological experiments involving prehistoric techniques and replica tools. The Archaeological Park has a unique role in interacting with the public and addressing a variety of target groups interested in experiencing history (Figure 6).

#### **4. Presenting the invisible**

Besides the already introduced ways of presenting this less-known Roman site, recent projects opened up outstanding possibilities for the town of Százhalombatta.<sup>3</sup> These projects include the UNESCO World Heritage nomination process of the eastern part of the Roman Danube Limes and collaboration in diverse international projects, including participating in the creation of cultural routes. One of these projects is the Interreg Danube Transnational Programme project, “Living Danube Limes”, sponsored by the EU. The project involves partners from ten Danube countries; by applying a holistic approach, it aims at implementing a multitude of measures to protect the elements of the historic infrastructure and develop the touristic potential of the 2000-year-old Roman heritage along the Danube. The work on each site along the historic Danube route becomes realised through a collaboration of experts and students in tourism, different fields of living history, researchers, archaeologists, urbanists, and architects (Kaiser and Woller 2021). At Százhalombatta, this cross-cutting approach connects Roman history to the 21<sup>st</sup> century and opens up new possibilities not only for well-known Roman sites in Hungary, such as Aquincum (Budapest), Brigetio (Szőny), or Lussonium (Paks-Dunakömlőd) but also for ones that are rarely in the spotlight, because, for example, they cannot offer that much to be seen (Figure 7).

Due to the proximity of the river and local sports facilities, Matrica today is a popular recreational area, despite being almost 3 km from the administrative centre of Százhalombatta. The involvement of the sites of Matrica and Százhalombatta in the Living Danube Limes project may accentuate the central character of the area on a local and regional level, especially when utilising its identifying character as manifested in cultural and health-related attractions. As a result, local and regional tourism is expected to increase. Using the embankment along the Danube as a bicycle path could improve the accessibility of the archaeological site. The main strong point of the site compared to the city centre is its natural environment, while, in terms of special identification, it has a complex historical role: not only the establishment of the Roman camp but also the potential (but, eventually, untapped) role of the area in the Napoleonic Wars and World War II relate to the narrow Danube crossing, which always gave strategic importance to the place. Utilizing a site rich in Roman monuments for recreational purposes could increase the community’s daily interest in it and create opportunities for targeted periodic events.

The presentation of the camp area may be enhanced by utilizing the site’s natural elements, for example, the high trees in the forest strip along the Danube. The dominant spatial position of the Napoleonic ramparts today may be counterpointed by built elements and linear structures. Landscaping, for example planting higher trees, can be used to outline the area of the Roman camp, thus making the buried archaeological structures visible. The structure of the diagonal rampart could be visualized very well by plants installed in a line parallel to the Danube, interrupted by openings at adequate points. It is recommended to visualize the raster system typical to Roman camps by adding

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<sup>3</sup> The Iron Age Danube Route is an already existing cooperation where the Iron Age heritage of Százhalombatta is involved.





*Figure 7. The almost invisible traces of the Roman fort of Matrica  
(photo: Zorán Vukoszávlyev, 2021)*

micro-architectural elements that identify the main roads (*cardo* and *decumanus*) and some distinct functional parts of the area, such as the soldiers' barracks and the campus core. However, the built elements must be designed not to be too massive, as the interior area of the camp can also be turned into a pedestrian space and an open space suitable for outdoor cultural events. Besides, existing built elements of the environment (sports fields and rowing club facilities connected to the site in the north) affect the placement of new buildings and installations. Additional outdoor recreational and sports equipment for different age groups could be installed there, possibly in a way to mirror the spatial system of the Roman camp.

The combined effect of applying the landscaping and urban planning tools described above could make the camp and its surroundings a well-identifiable area, attractive not only for locals but also for tourists. By combining already established activities in the archaeological park and the Matrica Museum, the educational visualization of the otherwise invisible structures of the Roman fort, and the daily use of the site as a recreational area, the attendance of the site and on-site events could be increased.

## **5. Research and education**

Within the Living Danube Limes project framework, each partner country with a connection to the Danube selected a pilot site to be the main focal point for implementing the project's holistic approach. Activities at these sites include archaeological geoprospecting (geophysical surveys), sustainable tourism strategy development, VR reconstructions, facilitating cooperation between museums and visitor centres, and various re-enactment events.

Since the Hungarian pilot site is Százhalombatta, both professional archaeologists and experts from other concerned fields (e.g., tourism) worked there to implement the project’s approach, combining monument preservation and architecture, while university students got acquainted with its historical values and current development potential.

Between 3 and 5 November 2021, the Ludwig Boltzmann Institute conducted a magnetometer survey on the Hungarian experimental site Százhalombatta-Dunafüred, where the former auxiliary camp, the vicus, and the surroundings of the Roman baths are located. The evaluated data generated

Figure 8. Important touristic sites and possible visiting routes in connection with the area of the castrum (analysis by students of the design course: Virág Kiss, Kata Váczi and Martin Takács. Supervisors: Balázs Halmos and Ákos Zsembery, 2021)



Walking route in Százhalombatta:

1 Szent István Square



2 'Matica' Museum



3. Ancient stone bridge



4. Sport center



5. Lake for boats



6. Harbour for ferry



7. Archaeological center



8. Roman castrum



9. Visitor center



10. Roman castrum





Figure 9. A comprehensive development plan for the site.

1: Roman Baths, 2: Piers, 3: Look-out towers, 4: Running path; 5: Promenade; 6: Ruins of the castrum; 7: Open-air stage; 8: Bridge; 9: Parking area, 10: Café and toilets, 11: Park, 12: Sports facilities, 13: Service areas, 14: Sport centre, 15: Residential areas, 16: Restaurant, 17: Water sports centre (by students of the design course, Márk Dimitrov, Júlia Lázár and Péter Nagy. Supervisors: Balázs Halmos and Ákos Zsembery, 2021)

during the survey will be used for VR modelling of the site's structures that will be integrated with additional data by the project participants in an open-access Living Danube Limes application.

In university education at BME, the site of Matrica was involved on several levels: in courses for graduate students in Hungarian and English and as a project-based course within the postgraduate



*Figure 10. Visualisation of a student's proposal plan for a sustainable, non-destructive utilization of the site of Roman Matrica (Júlia Lázár, 2021)*

programme for engineers specialized in monument preservation. During a university course, students carried out a true-to-form survey of the Roman baths' remains in Százhalombatta with a TLS laser scanner and designed development options for the surroundings of the ruins. During another regular course, students worked on the comprehensive mapping of the former *castrum* and *vicus* area of Százhalombatta and designed development plans for the place, considering its historical values and present-day environmental conditions (Figures 8–10). Following the holistic approach of the Living Danube Limes project, students also had an opportunity to visit the site and consult the town's chief architect, archaeologists, and heritage experts. These measures, carried out within the framework of the international cooperation in the Living Danube Limes project, enrich our knowledge of the former fortress of Matrica. As a result of the surveys, a new architectural feature was identified in the camp area: a building at the western wall of the *castrum* near the Danube, with a rectangular floor plan and two rows of pillars running through the middle of the floor. This architectural layout shows that the building was of high quality and, hence, important. Earlier excavations could not cover the entire fort area; the new visual data confirming previous archaeological discoveries and the finding of this new and prestigious building contribute to the picture of a well-equipped camp. The project also shows the younger generation's commitment to the Roman heritage by involving university students. Local residents, stakeholders, and local and regional touristic organisations may be involved via on-site workshops that may be an optimal way to raise their attention and zoom in

on the hidden cultural heritage of Matrica, thus arraying the interest of the public besides that of the academic world.

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# The Danube Limes – A Roman Territorial Museum

## Visibility Measures and Physical Reconstruction at Archaeological Sites

Ana-Maria MACHEDON\*, Georgică MITRACHE\*\*, Dragoş DORDEA\*\*\* and Bogdan ISPAS\*\*\*\*

### **Abstract**

The historical landscape of the ancient frontier of the Roman Empire along the Danube contains many archaeological sites throughout several European countries and, thus, represents a vast open-air historical museum on a European geographical scale. Hence, one of the main aims of the project *Living Danube Limes – Valorising cultural heritage and fostering sustainable tourism by living the common heritage on the Danube Limes as the basis for a Cultural Route* focused on the possibility of disclosing the hidden archaeological heritage of the ancient frontier to the public and bringing it back to life.

The research led by the UAUIM (“Ion Mincu” University of Architecture and Urban Planning) team explored different strategies to enhance the visibility of archaeological sites and developed concepts for non-invasive and reversible physical reconstructions of elements of the ancient world to make it possible for today’s people to comprehend and live the historical heritage. The developed methods include analytical tools that support the determination of the most suitable interventions and a catalogue of applicable non-invasive physical reconstruction methods.

The research focused on the significance of the territory (referred to as the sum of all elements constituting a specific area) as well as landscape heritage and its contextualization as a base for understanding history.

All kinds of interventions were designed around the principle of preserving the landscape, local identity, and historical authenticity while also creating grounds for a future Cultural Route and utilizing local, regional, national, and international perspectives.

### **Keywords**

Territory, landscape, authenticity, local identity, reversibility

## **1. The territory of the Danube as part of history**

Throughout history, the territory has always influenced human action. Landscape features and natural limits, like mountains, rivers, woods, seas, etc., have determined the shape of empires, countries,

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\* Lect. Dr. Arch. UAUIM. ana\_machedon@yahoo.com

\*\* Prof. Dr. Arch. UAUIM. georgica.mitrache@uauim.ro

\*\*\* Lect. Dr. Arch. UAUIM, dragosdordea@yahoo.com

\*\*\*\* Asist. Arch. UAUIM, bogdan\_ispas@yahoo.com



*Figure 1. The pilot site of Sacidava (photo: Dragoş Dordea, 2021)*

human settlements, and constructions. Natural limits were transformed into frontiers, became a stage for armed conflicts during wars and invasions, and strategic areas for military settlements, surveillance, and protection.

For Europe, the Danube represents such a natural geographical limit, one that became a frontier between states and empires at various times throughout history. The Danube Limes was part of an extensive network of border systems from Hadrian's Wall in Great Britain to the northern parts of Africa and the Near East.

The historical landscape of the Roman Empire's ancient frontiers contains many archaeological sites, including military buildings, infrastructural elements (bridges, roads, and harbours), and civil settlements. All these structures directly connect with the territory they are set in. Their evolution over time was strongly influenced by the factor that led to their establishment: the relationship with the Danube, a river that, paradoxically, was both a solid natural border separating various regions in Europe and a corridor connecting them. Therefore, understanding an archaeological site's conformation always has an important political-territorial and historical-geographical component, which is especially true for the Danube and the Roman Danube Limes.

### **1.1. The Danube Limes – A Roman territorial museum**

From a geographical point of view, all archaeological sites of the Danube Limes are interconnected and were born out of common premises: the relationship with the Danube, the evolution of a defensive system continuously shaped by military interventions, and the unparalleled connecting power of this important corridor. Therefore, the complex system of fortifications should become, on an international scale, a territorial museum open for exploring Roman history – by including it in a new European Cultural Route based on the Danube as a connecting element.

The French philosopher, Paul Virilio, formulated the idea of considering conflict areas with their ruins and military constructions as open-air museums of history (Virilio 1994, 27). The idea took shape during his exploration of the French coast, upon discovering abandoned German bunkers from the Second World War. On a much larger scale, the Danube Limes can also be considered a complex museum featuring, beyond Roman archaeological sites, a palimpsest comprising interwoven relics of ancient and more recent cultures and civilizations, and reflecting diverse local identities that are all connected through the Danube.





*Figure 2. The landscape at the pilot site of Sacidava (photo: Dragoş Dordea, 2021)*

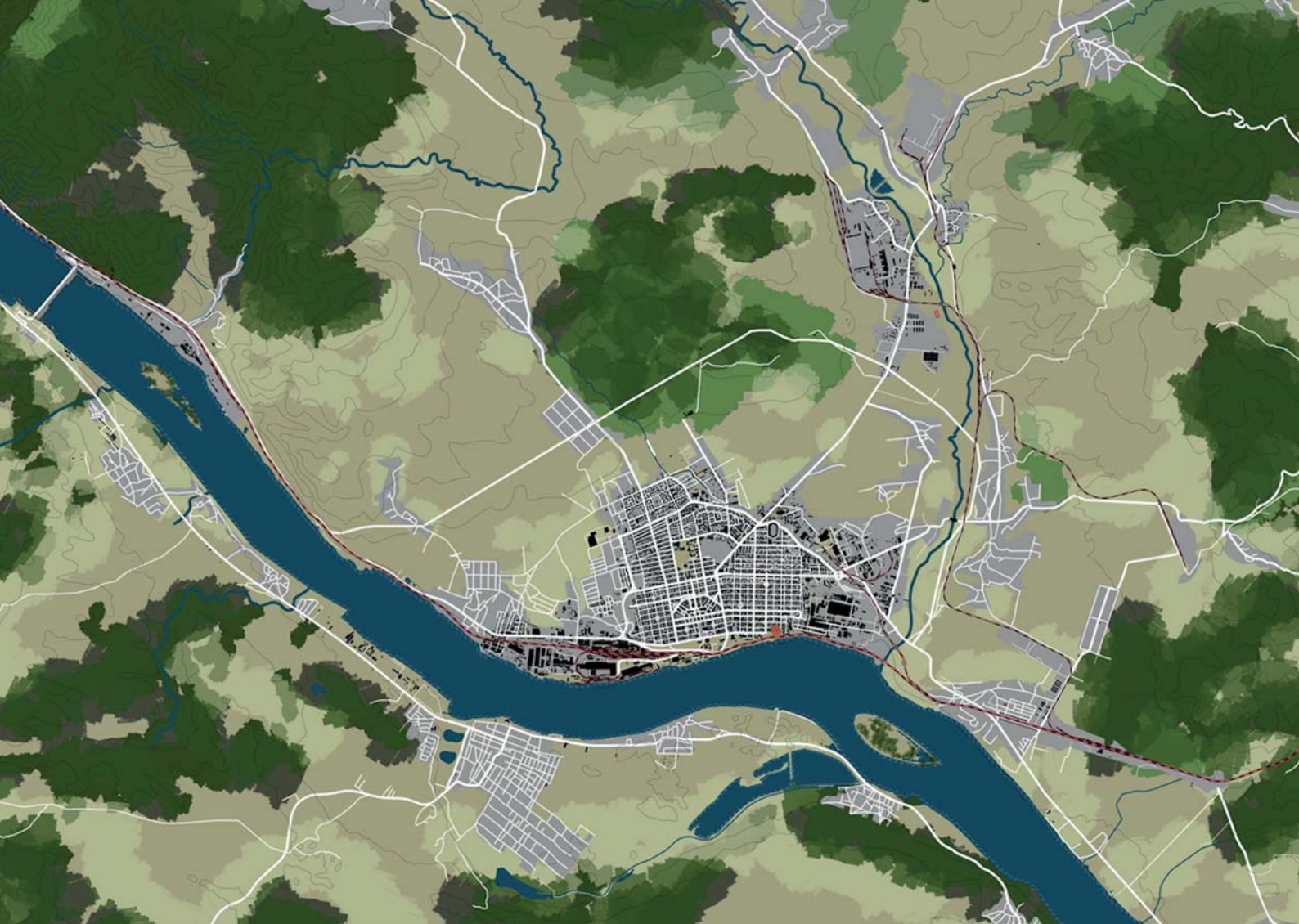
## **1.2. Context analysis**

A research project aimed at understanding the genesis and evolution of the Danube Limes by investigating the archaeological sites along the Romanian Danube Limes – as the one realised within the frame of the Living Danube Limes project – must start with revealing the context of said evolution throughout history. Therefore, our research team developed overlapping analytic methods to outline the related setting.

The analysis of the context was based on mapping the Danube Limes territory at different scales, ranging between local, regional, and country-wide levels. The recording covered four criteria: 1, natural features, 2, urbanized zones and built-in areas, 3, infrastructural connections and public buildings or spaces, and 4, tourist attractions. The Danube and the involved archaeological sites along the Danube Limes were all analysed on all levels.

### *1.2.1. Natural features*

The mapping of natural features covered the terrain, vegetation, water bodies, agriculture, etc. The results revealed that the original natural conditions have been preserved in many cases and that some archaeological sites sustained their ancient wild landscape by not being subjected to human intervention. The persistence of the original terrain also results in the inaccessibility of the sites,



*Figure 3. Territorial analysis of the archaeological sites Drobeta and Puținei (by Andreea Roman, 2020)*

which presents an extra challenge: the delicate balance between accessibility and preservation of such rare, authentic sites is an issue the project also had to deal with.

At the same time, the analysis of the natural context provided an understanding of the one-time setting of the sites concerned, thus revealing, for example, that, from a strategic point of view, the chosen locations were points in the landscape that offered the best possibilities for surveillance and defence and, in many cases, also the best natural protection against military aggression.

### *1.2.2. Urbanized areas*

Investigating the relative position of archaeological sites, urbanized areas, and settlements was another filter of the context analysis. In the first phase, the territorial evaluation only included the settlements closest to the archaeological sites and the Danube. The analysis extended to other urban areas in successive phases. This analysis provided a basis for estimating the potential and



*Figure 4. The landscape at the archaeological site of Luncavița (photo: Adrian Rădulescu, 2021)*

possibilities for the tourism and catering industry at locations. It was also essential to identify the related infrastructural capacity of the urbanized areas to relieve the archaeological sites of intensive tourism-related development. However, many archaeological sites are far from any human settlement and almost entirely inaccessible without urban support.

### *1.2.3. Infrastructure*

The analysis of the existing infrastructure provided valuable information for accessibility strategy planning by revealing connectivity gaps on local, regional, national, and even international levels. Infrastructural elements provided a basis to delineate necessary developments to be included in local visibility enhancement plans.

### *1.2.4. Tourism*

For every archaeological site, the analysis also focused on other tourist attractions in the close and wider area. Natural parks and protected areas, other historical monuments, museums, entertainment facilities, hotels, restaurants, other tourist routes, cycling or sailing corridors, etc., were mapped to prepare a future Cultural Route where a wider range of tourist activities appear interconnected.

All four aspects were analysed on different scales, always considering the Danube and the archaeological sites as key elements. The combined results of the targeted analyses enabled the

identification of strategic elements essential for developing a new Cultural Route, focusing especially on accessibility interventions and new tourist attractions.

### **1.3. Enhancing visibility through contextualization**

The context analysis of archaeological sites highlighted the importance of understanding the territorial setting of historical settlements. Before applying any visibility measures on the spot, sites must be evaluated and considered in their context. A single historical element cannot be understood in itself but only as part of a vast complex, in our case, a complex transnational system of defensive fortifications along the Danube, established and maintained in active connection with elements of the natural environment.

Therefore, we found it essential to make the public aware of the entire territorial and strategic structure of the Danube Limes to understand its elements. Distances between fortresses, their positioning, shape, and conformation were determined by other defensive points and directly related to the landscape. Furthermore, visibility was also a key factor in establishing a structure for surveillance.

*Figure 5. Exhibition covering all archaeological sites of the Romanian Danube Limes, held during the Danube Limes Days at UAUIM in Bucharest (photo: Ana-Maria Machedon, 2022)*



Therefore, visibility and contextualization are also key factors in understanding the archaeological sites along the Danube Limes.

#### **1.4. Landscape preservation**

In the case of the Roman Danube Limes, most sites are still located in a natural landscape which, in many cases, coincides with the original (wild or agricultural). Besides trying to provide historical authenticity, original landscapes represent the most valuable element in recreating the authentic atmosphere.

The Swiss architect, Peter Zumthor, developed a theory of architectural atmospheres and “complete landscapes” (Zumthor 2006) based on the idea that every building belongs to a place and that place cannot be imagined without it (Zumthor 1999, 17). Landscapes and natural features can be considered an integral and essential part of the historical heritage; thus, an original, authentic atmosphere can be obtained through the preservation of the landscape.

The French architect, Viollet-le-Duc, developed the idea of restoring natural features like we restore buildings (Viollet-le-Duc, after Favre 1875). His theory opens the way toward rebuilding and preserving not only historical monuments and ancient ruins but also the entire landscape; his concept thus turns territorial analysis into an essential tool of preservation for any archaeological site.

*Figure 6. The landscape at the archaeological site Traian-Ciuperceni (photo: Adrian Rădulescu, 2021)*



We have discovered many sites with a unique original landscape in the Romanian section of the Danube Limes. Considering the above, any interventions for enhancing the visibility or accessibility of these sites must be designed with the aim of preserving the ancient landscape.

## **2. Local identity**

The Danube flows through several modern countries and geographical areas, each of them embracing specific local identities. Ethnography has revealed not only a vast diversity along the Danube but also the presence of a shared Roman heritage that appears in various forms as transmitted and interpreted by peoples living in specific Danube regions. To recreate an authentic atmosphere of ancient times, the concept of living history could use the existing elements that persisted until today as traditions, names, local dishes, etc.

Future visibility measures should use and preserve local identities both as touristic and cultural values and as a potential for making living history concepts work. Therefore, we proposed using local identity elements as factors considered in any intervention at archaeological sites, as they have the potential to enhance the visibility of said sites.

Collecting and defining local identity elements is also necessary for developing preservation strategies and creating balance by restrictions, limiting invasive tourist interventions or physical reconstructions.

## **3. Determining the most suitable visibility measures**

The complex research of the Romanian section of the Danube Limes concluded in designing a method for choosing the most appropriate visibility measures for sites, including different kinds of physical reconstructions.

As the landscape is a valuable source of authenticity, the character of possible interventions should always be determined with consideration to landscape preservation and conservation. Any visibility measure should respect natural features and use them as part of a possible scenario without altering the landscape. The elements of a site's local character, comprising factors like the significance of visibility for defensive purposes or natural protection characteristics, should be preserved and used to facilitate the understanding of the original role of the related historic structures. Furthermore, visibility measures should also be designed with local identity in mind to preserve and identify the elements that emerged in ancient times and have been maintained until today.

Besides the considerations of preserving the landscape and linking cultural heritage with local identity, interventions should also be non-invasive, reversible, and sustainable.

#### 4. Physical reconstruction using non-invasive technologies

Having analysed the context of sites and defined the aspects to be considered when designing interventions, the third phase of the research project focused on providing a catalogue of possible visibility measures based on non-invasive technologies. The catalogue classifies visibility measures as ones that could be applied on-site or elsewhere, and comprises a description of their expected impact on either local, regional, national, or international levels.

The proposed on-site interventions covered basic techniques, necessary interventions, and hi-tech technologies and were inspired by previous investigations by the same research team on the archaeological site of Dinogetia (Dordea 2014).

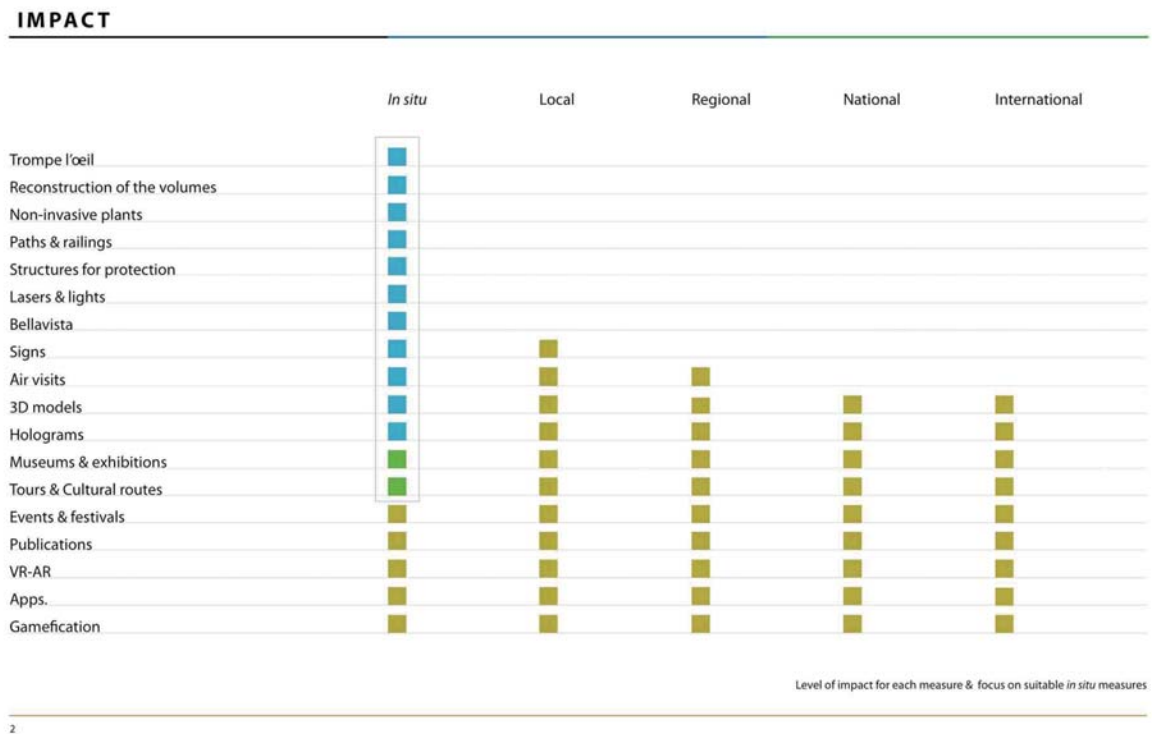


Figure 7. Table of possible visibility measures and their impact from the Visibility Measures Catalogue (Ana-Maria Machedon, 2022)

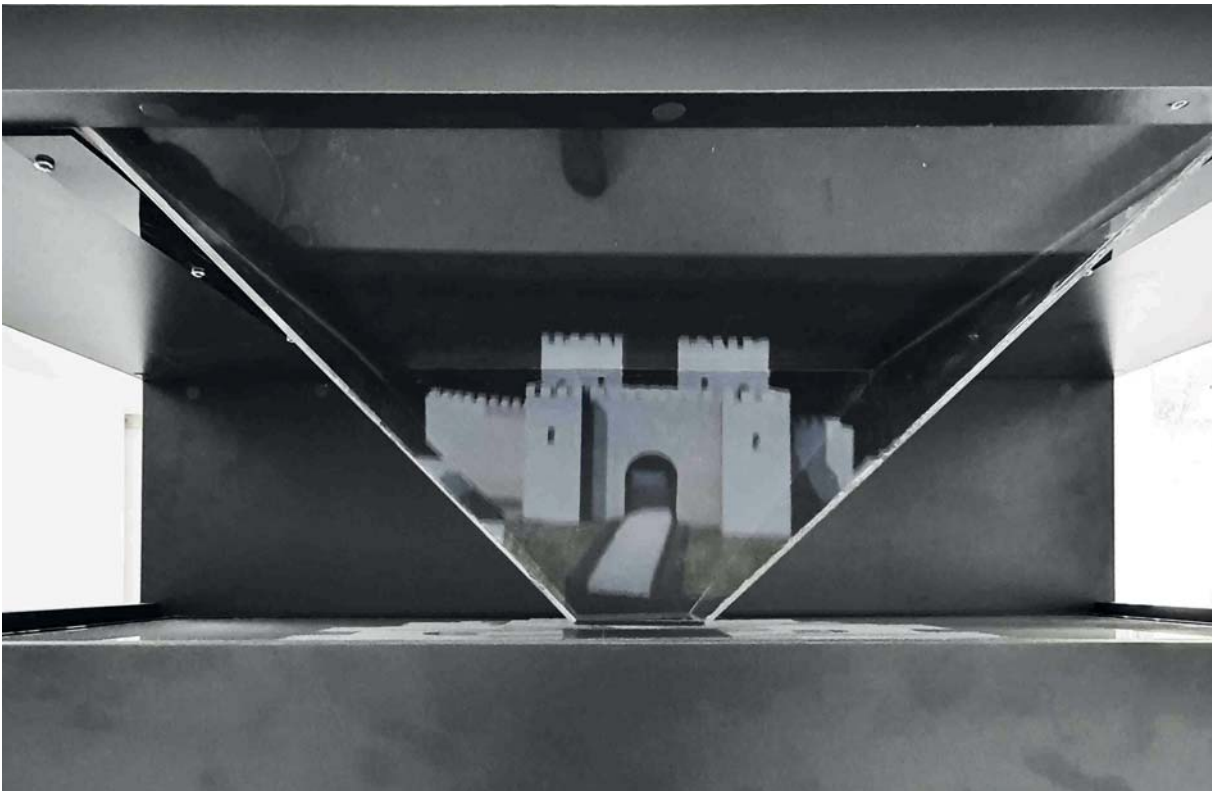
Basic techniques include using non-invasive plants to outline the layout of ancient buildings in the case of “hidden”, i.e., largely unexcavated or overgrown sites. Borrowed from green roof technology, we have selected plants with surface roots that can adapt to different climates. Physical reconstruction could be based on the *trompe l'oeil* technique, popular during the Renaissance. The shapes could be



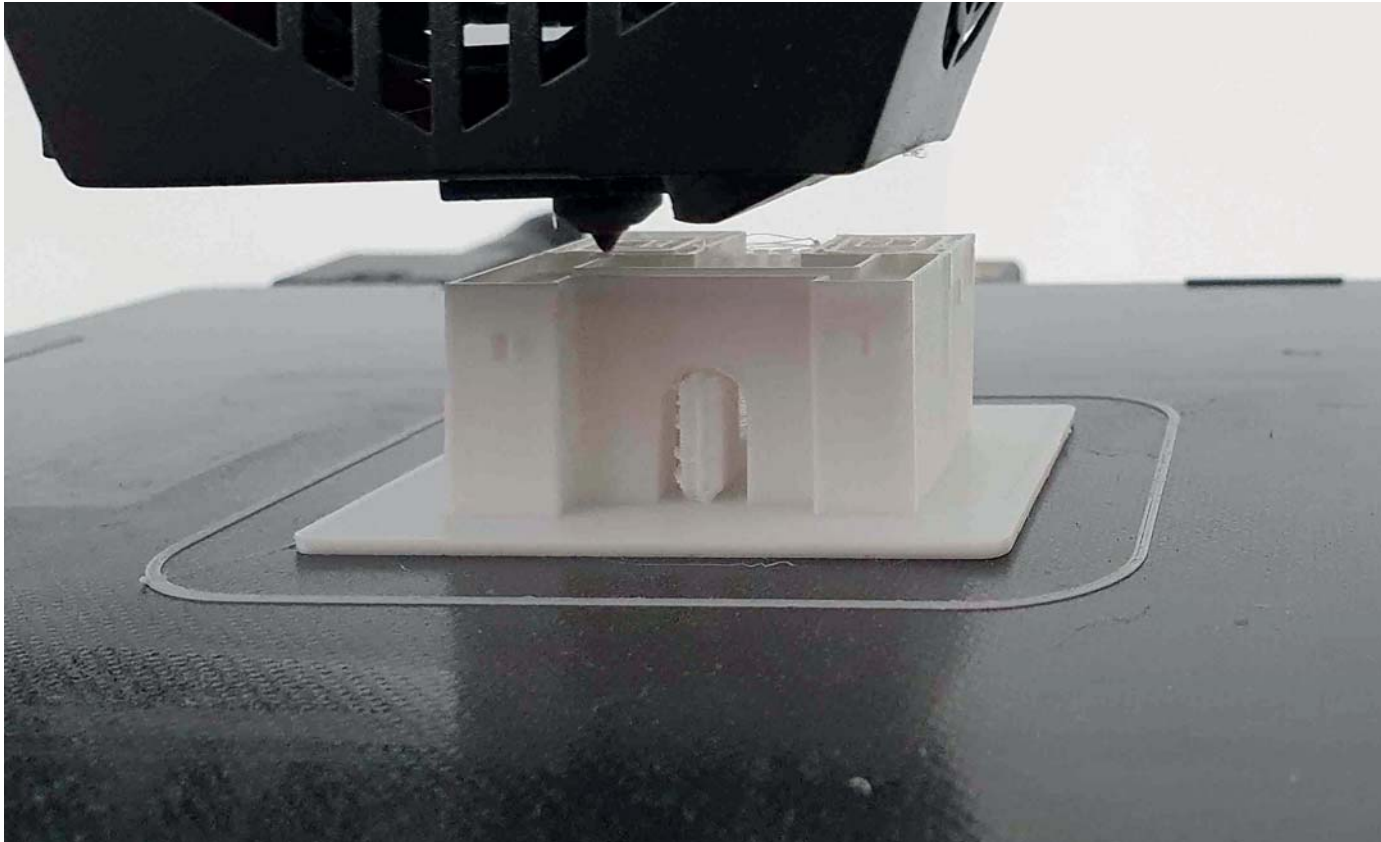
*Figure 8. Project for the development of protection structures at the pilot site Sacidava  
(a project by Sergiu Tudoran, 2021)*

reconstructed using light materials such as wood or wires. These interventions should be completely reversible, and the materials used should create a contrast between the original and new elements as inspired by contemporary art and temporary architectural installations, such as the reconstruction of Borromini's San Carlino by the Swiss architect Mario Botta in 1999.

*Figure 9. Hologram of the Sacidava fortress during the Living Danube Limes Workshop in Rasova  
(photo: Ana-Maria Machedon, 2022)*







*Figure 10. 3D-printing the Sacidava fortress gate during the Living Danube Limes Workshop in Rasova (photo: Ana-Maria Machedon, 2022)*

The necessary interventions should define the areas where the public has access, provide guidance, and inform and protect the visitors: paths and railings, different informative signs, and points of observation can be considered here. Erecting structures to protect ongoing excavations at archaeological sites should also be considered. Such necessary elements should always respect the landscape, the local identity, and the original atmosphere, and they should be completely reversible.

In the category of hi-tech interventions, we have included lasers and lights, 3D models and holograms, and virtual and augmented reality tools. Off-site visibility measures include different types of tours and cultural routes, sightseeing flights, publications, digital applications, events, festivals, and exhibitions.

## 5. Conclusions

The research and proper understanding of the Danube Limes included a wide range of scales, comprising both transnational-level considerations, small local communities, and wild, inaccessible landscapes. Territory played an important role in developing the ancient frontier and proved to be the key to understanding and developing the new European Cultural Route. Territorial analysis facilitated the determination of the most suitable visibility measures and interventions. Landscape and local identity preservation offered a fundament for the living history concept, thus making it possible for us to preserve authentic elements and gain a proper understanding of the historical role of heritage elements while always keeping an eye on reversibility and sustainability. Through this, the landscape may become an important element of cultural heritage.

The ancient frontier of the Roman Empire, a historical complex both dividing and connecting parts of Europe, incorporates elements, atmospheres, landscapes, and traditions from the past that are significant for the European cultural heritage today. This heritage should be brought to life in a new Cultural Route to be preserved and experienced by the public.

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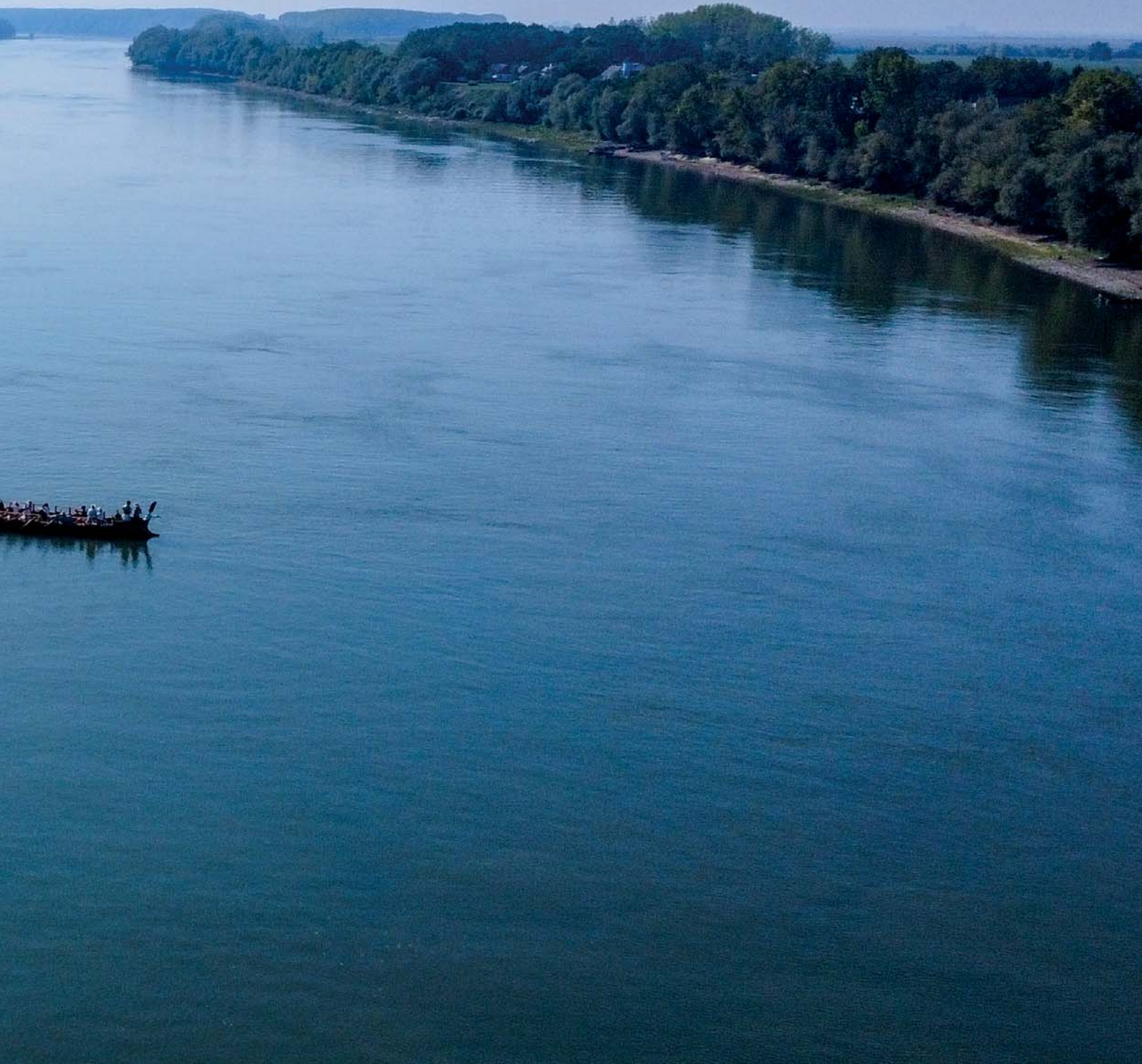
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# **Museums and Visitor Centres for the Knowledge Transfer of Historical Sites**





# Knowledge transfer in museums

Maria ERKER\*

## **Abstract**

One of the basic tasks of museums, in addition to the core areas of collecting, preserving, researching, and exhibiting, is the transfer of knowledge. This involves not only the transfer of information to visitors in the form of exhibition texts and objects but currently also relates to modern media. This transfer using media also takes place in museums, via media stations, installations, and audio or media guides. The most important type of knowledge transfer on-site, however, is transmitting via cultural mediators and museum educators. Today, various methods such as guided tours, history labs, workshops, and themed tours are implemented.

## **Keywords**

knowledge transfer, museum, transmitting knowledge, museums objects

## **1. Introduction**

### ***What is a museum?***

According to the dictionary, a museum is an “institute where works of art involving decorative art and scientific and technical collections are kept and exhibited” (Duden 2022).<sup>1</sup> According to the guidelines of the International Council of Museums (ICOM), the museum is a public educational institution that is not commercially oriented and focuses on the transmission of knowledge as its main goal (Aumann 2014, 18).

Accordingly, a museum is a place where objects are preserved and information is conveyed.

### ***The basic tasks of a museum***

According to ICOM and the German Museums Association (see Museumsbund), museums have five basic tasks to fulfill to live up to their status as a museum:

- collecting,
- preserving,
- researching,

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\* Ancient Historian, Certified cultural educator. Project staff and lecturer, Dept. of classical studies, Paris Lodron University of Salzburg. maria.erker@sbg.at

<sup>1</sup> All cited texts throughout the study were translated by the author.

- exhibiting,
- transmitting knowledge.

While collecting, preserving, and researching often take place in the background and are, thus, invisible to the museum visitor, the two tasks of exhibiting and transmitting knowledge usually go hand in hand. By selecting which objects are shown to the visitor in the context of an exhibition (exhibited object) and which remain in the depot (deposit), it is also determined which contents can and should be brought closer to the visitor.

Acknowledging this principle and its potential, Aumann describes the character of an exhibition in the following way: "... many generating and produced elements form a system: the scientific or essayistic content, the objects and their arrangement and staging, the space of the objects' presentation, and the strategies of knowledge transfer, for example in the form of accompanying texts, audio guides or films." (Aumann 2014, 10).

### ***What is an exhibition?***

An exhibition is not only a place or space where things (museum objects/exhibits) and topics are presented in a museum or in another space made accessible to the public. It is, above all, a presentation that conveys knowledge with the help of exhibits and accompanying explanations (Aumann 2014, 18). However, since knowledge is also transported via this presentation, an exhibition itself can also be described as a "knowledge medium" (Aumann 2014, 18). Exhibitions show objects in changing thematic contexts and are the interface, with which the museum addresses the public (Deutscher Museumsbund 2019, 74).

The most important aspects to consider for the design of an exhibition are:

- the general exhibition theme,
- the thematic areas this theme addresses (social history, political history, ...),
- the target group(s),
- the linkage of individual exhibits and information transfer,
- the time frame (permanent or temporary exhibition),
- the space available to implement the exhibition.

The management of an exhibition design is usually the responsibility of the curator, who scientifically develops and compiles scientific topics for the exhibition (Deutscher Museumsbund 2019, 75). The scenography and implementation are usually teamwork (curators / educators / museum management / museum construction).



## 2. What is knowledge transfer?

The term “knowledge transfer” is rather self-explanatory, as it is generally defined as the transfer of knowledge and skills.<sup>2</sup> In the past decades, the term has gained acceptance in the European museum community and is widely used under the umbrella term and concept of museum education as a departmental designation and working title.

### *Knowledge transfer in the museum*

In specialist literature, the museum is often referred to as a “place of education” (Flügel 2005, 131) or an “educational institution” (Aumann 2014, 18). The so-called “museum educator” (Flügel 2005, 134) is responsible for imparting knowledge in museums and exhibitions. Today, the job title of a museum educator is increasingly being replaced by that of a cultural mediator, art mediator, and knowledge mediator (see Kulturvermittlerinnen). Moreover, the subject of museum education is currently also referred to as museum didactics or art and culture education.

The idea of imparting knowledge to people visiting museums dates back to the 19<sup>th</sup> century. However, exhibitions, museums, and collections have been around much longer. The forerunners of today’s museums in Central Europe are the art and curiosity collections of the aristocracy, which already knew a first form of knowledge transfer in the 17<sup>th</sup> century in the variant of a guided tour by the owner or collection manager. The focus was usually not on the quality or history of the objects, but on quantity, i.e. the size of the collection, and exoticism and curiosity, hence the term “cabinet of curiosities” that is often used in scientific literature today.

In addition to direct oral communication (see below), the tasks of museum education/cultural mediation today also include collaborating on exhibition text design, issuing press releases, facilitating accessibility (texts, digital formats, exhibition construction), and creating content for digital mediation.

## 3. Forms of transfer

In the field of a museum, there are different forms of knowledge transfer. Apart from the classic textual and auditory museum education, there is more and more media education both in exhibitions and social media today. Both forms of knowledge transfer can also take place outside the museum, for example in public spaces in the form of exhibitions, pop-up exhibitions, art actions, installations, or events.

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<sup>2</sup> Wortbedeutung. <https://www.wortbedeutung.info/Wissensvermittlung/> (09.03.2022).

### ***Classic museum transfer***

This generic term covers all types of knowledge transfer that take place in the museum and do not use media or mobile technical devices as a basis, but instead consist either of information that is read (museum texts) or heard (spatial sound or listening stations) by visitors or mediated by educators. This means that this area includes all textual and acoustic stations of an exhibition, as well as the direct oral knowledge transfer conveyed by the cultural mediators.

#### *Texts in the museum*

Texts in museums serve to convey knowledge. There are country-specific guidelines for their creation that provide information on ideal hanging height, font size, typeface, number of characters, colour selection, size, and illumination (Westphal 2015). The types of texts usually found in an exhibition are room texts, object texts, and exhibition texts.

Room texts help visitors to orient themselves and determine what topics are covered in the room or the entire exhibition or exhibition area. Ideally, they are all of the same length, similar in color, and placed near the entrance to the room. Object texts describe an object (exhibit) in more detail and briefly explain its dating, origin, and material, and in the case of art objects provide information about the title and creator. They also state whether the object is on loan, an original, or a copy. As a rule, object texts are placed close to the object or are assigned to the object using a letter or number. Exhibition texts are the first texts presented to the visitor entering the exhibition space. They provide information about the exhibition theme, but also about designers, exhibition structure and design, location, and duration.

In addition, timelines and explanatory graphics are a special case of museum texts. Especially timelines help visitors to orientate themselves and serve the so-called localization, which helps visitors to understand the time frame of the exhibition. Graphics explain the content in a representative form and convey complex topics in a simplified design.

#### *Oral knowledge transfer*

Oral knowledge transfer involves a cultural educator leading a group through a museum/exhibition. Most tours are scheduled for one to 1.5 hours. A distinction is made between an open group (public tour, the visitors do not know each other) and a closed group (the group registers together). Aside from the classic general guided tours, a distinction can be made between theme-centred guided tours, dialogue-based guided tours, and action-oriented guided tours.

The classic guided tour is the general overview tour of an exhibition or museum, which provides the visitor with basic information about the exhibition theme. Very often this tour is offered in the format of a public tour, or implemented for the target group of a closed, registered adult group. The theme-centred guided tour presents visitors with a particular aspect of the exhibition theme, very often

from the field of social history. The sequence of events is usually that of a classic guided tour. The format is aimed at open and closed groups with a focus on adults and advanced school groups. The dialogue-based guided tour is the classic guided tour for school groups of all ages. The basic concept

*Figure 1. Collection of ideas in the context of an action-oriented tour (© Maria Erker)*



is based on dialogue between the group and the facilitator: students are guided to ask questions, answer questions, and discuss them in the group and/or with the facilitator. Action-oriented tours are also designed for the target group of students. In this case, students are encouraged to carry out small actions within the framework of the tour. This may, for example, include assigning objects to a theme or period. An action-oriented tour can also involve working with materials in a framework that allows the students to stay in the exhibition space.

Another form of oral knowledge transfer is the workshop. As a format, the workshop is aimed primarily at students in the elementary to high school range. As a special feature, the students can actively participate in the topics of the guided tours in a framework that goes far beyond the dialogue-based guided tour (see above). Due to the abundance of required or used materials, part of the workshop usually takes place outside the exhibition space, for example in an educational room. Very often, the students in workshops engage in making something they can take home ("product"). A special type of workshop designed specifically for high school students is the so-called history lab. In this format, students learn the principles of historical research and the creation of scientific data from materials and archive records. Although the history lab is thematically linked to an exhibition or museum, it usually does not take place in the exhibition space but is relocated to an educational room like any other type of workshop.

Finally, podcasts are a format of oral knowledge transfer in museums. While only a few years ago podcasts were mostly known as audiobooks, they now have become the most modern form of oral knowledge transfer. This medium is today used primarily in social media (see below). Some museums offer a regular podcast, others only produce one for individual exhibitions or topics. The advantage of podcasts for museums is the easy and inexpensive distribution via platforms such as Soundcloud; the advantage for consumers is that they can listen to information at any time and are not dependent on appointments (as with guided tours). The most important feature of podcasts is that they are freely accessible online, preferably via museum websites and social media profiles (Instagram, Facebook). Podcasts that are only accessible through certain platforms (for example, Soundcloud) are often not as easily found by the user. YouTube can also be used as a platform for museum podcasts or oral knowledge transfer in general, although the usability is limited due to the bundling of keyword/keyphrase searches in this application.

### *Printed matter*

Print media such as flyers, brochures, catalogues, and posters, of course, convey knowledge as well. Yet, they do not fall under knowledge transfer but under public relations, which is due to the limited text conveyed in them. However, museum education/cultural mediation is increasingly involved in the creation of printed matter to ensure the alignment with the mediation in the exhibition or correlate the exhibition, its target group, and the mediating language used. Small texts in printed matter aim to raise the interest of potential visitors and attract them to the exhibition, the subject matter, and the museum.

### **Digital knowledge transfer**

In the last 10 years, more and more museums have also opened up the so-called digital space, which they use for the communication of information about exhibitions and events (in the context of PR), but also for the transfer of knowledge (object descriptions, guided tours, workshops, etc.) into the digital world, i.e. into the realm of the Internet and social media. Here, it is important not to act haphazardly, but to provide digital content regularly and with a targeted strategy:

“Museums must not only react quickly to the new challenges but at the same time preserve their role as places of knowledge in an ever-changing society. To use the new technologies in a targeted manner, they need digital strategies. The development of a digital strategy should not just be a snapshot, but needs to be an important component of institutional planning and should, thus, be supported by all levels” (MFG 2014, 11).

More and more museums are focusing on their digital strategy in addition to a museum and exhibition concept. “A digital strategy defines and controls all structures, measures, projects, resources, competencies, valences, costs, and benefits that a museum uses digitally and leads them into an optimal coexistence” (see Iliou Melathron). Digital strategies usually include a media plan that defines in which areas and to what extent and in which timeframe information will be transported in the museum and on the Internet/ on social media. Media plans for social media are usually prepared 6 months in advance; plans in the museum for media stations as part of exhibition planning often need to be developed even earlier.

Before creating a digital strategy, it should be determined whether or not the museum or exhibition organizer wants the digital content (Vogelsang et al. 2011):

- to attract attention to appeal to specific target groups,
- to involve visitors in the exhibition concept (participation),
- to start a professional dialogue,
- to communicate mainly offers and events (advertising),
- to provide service and service information,
- to guarantee customer loyalty and/or community building.

Considering these aspects will facilitate the on-point planning of a digital strategy. However, there are also problems that may inhibit the development of a digital strategy, as the following quote shows:

“The digital knowledge transfer has fundamentally changed the demands and expectations of today’s society and requires a review more than ever, first and foremost in cultural institutions and especially in museums. While society as a whole is adapting

rapidly, museums often lack the know-how, time, and personnel to deal with the latest trends and technologies and to integrate them into their daily work and organizational culture" (MFG 2014).

It is important to note that digital mediation is not just a stringing together of images and information (Deutscher Museumsbund 2019, 75), but involves much more. Digital mediation also creates a bond between visitors and the museum and informs about attractive offers in the same way as "knowledge for the road" is offered in small portions and special objects are made accessible digitally (photographically).

Digital mediation includes mediation in digital space as well as mediation through media (film, audio stations, audio guides, media guides, touch screens) in a museum or exhibition.

#### *Mediation in digital space: new media and social media*

The term new media covers various electronic devices such as PCs and mobile devices such as tablets and smartphones that enable users to access the Internet.

Due to the interactivity this creates through the ability to interact with other users, respond to content, and share own content with others, the platforms used with these types of new media are also referred to as social media. Today, there are already a large number of interactive media, and they use a variety of presentation characteristics to distinguish themselves from others. A distinction must be made between static and participatory sites. Static sites such as Pinterest or Google Place serve primarily to transfer information between people or institutions and interested parties. Participative media such as Facebook and Instagram enable the information recipient to communicate directly with the institutions and other interested parties, which goes beyond direct contact (for example, via email).

Due to the variety of different media platforms, it is important to consider which target groups your museum wants to address when creating a social media strategy (adults, school groups, families with children, older people interested in culture, tourist groups, ...). Different visitor groups bring different needs to the museum as well as to the digital space.

Participatory platforms such as Twitter, Facebook, TikTok, Snapchat, or Instagram each have a different main user group in terms of age, gender, social and geographic origin, and interests. Therefore, it is important to conduct a target group survey in advance, for example through visitor statistics, which shows an institution which group is the strongest and weakest. Both groups can then be targeted with a specifically tailored campaign on the appropriate platforms.

The main way to communicate on social media platforms is a posting, a term that is best translated as a digital contribution. This term includes information, images, and videos that are uploaded, i.e. posted, on digital platforms. There are different forms and types of postings on social media. The most common posting is the text posting. On some platforms, such as Twitter, it is possible to upload

images and videos, but most use is made of the shortest possible text. Especially on strongly image-oriented platforms like Instagram, an image posting is most used, as it has proven to be an eye-catcher that already makes the user curious through its visual message. A sub-form of image posting is the animated gif which usually conveys information in combination with text or is intended to attract attention to an attached text. With video and reel postings, it is important to remember that social media are often used on the go and, for this reason, videos are often consumed without sound. The use of subtitles is recommended here. Postings of quotes can be implemented in writing with or without a picture or visually with a short video. This type of posting can, for example, be used for content related to historical figures. Many museums also develop recurring postings that are implemented on a daily/weekly/monthly basis with a specific theme, for example, the object of the week.

In addition to traditional postings, backstage postings have enjoyed particular popularity since the first Covid-19 lockdown (2020). In this posting concept, users are provided with information from the backstage area, i.e. from the normally inaccessible areas of a museum. This usually involves

Figure 2. The social media tree



information about objects from the depot, an archive, or, in the context of exhibition planning, insights into the planning phases.

With all these types of postings hashtags (#) help to reach a specific group of users, who show their interest in a particular topic by using and following the hashtag.



*Figure 3. Story Telling Workshop:  
a "Celt" shows young visitors herbs and  
foods of his time (© Maria Erker)*



Summing up, the advantages of social media and a social media strategy for knowledge transfer in museums are compelling. Hence, the use of social media allows presenting objects that are in the depot due to limited exhibition space or conservatory reasons and are, thus, inaccessible to visitors. Moreover, surveys are being made possible by the use of social media; through direct contact with the community visitors' wishes and customer satisfaction can be monitored. This also facilitates a more individualized setup of the target-group-oriented offer of a museum. Cost-effective announcements of events and exhibitions are also possible in a quick and straightforward way.

Yet, there are also challenges in the use of social media. New content must be produced regularly because once engaged, the community demands current information. This creation of regular content is time-consuming and must be scheduled as a work package of its own. Moreover, high-quality image and film material must be offered to fulfill professional standards, and the technical equipment for this must be available.

Despite all benefits of social media, it must be stated, as a final note, that the homepage and the blog are still in the picture as parts of new media usage, although they represent the oldest form of digital mediation of museums on the web. Both homepage and blog seem to be outdated at first glance, but statistically, they still play a major role in conveying especially basic information such as opening hours, location, or the like and should, hence, be maintained as well.

### *Media in the museum*

Media are also used in the museum rooms. A distinction must be made between fixed media (film stations, touch screens, listening stations) and mobile devices (audio guides, media guides). With mobile devices, the visitor decides more about the extent of consumption than with fixed devices. For some years now, more and more museums have also been working with mobile devices that visitors bring with them (smartphones). Information is transmitted via QR codes, NFC, or free apps and can be accessed individually.

### **Storytelling**

The term "storytelling" is currently frequently used in the cultural scene, but the principle of using stories to bring history closer to museum visitors has been around for a long time. Many museums have been offering themed and costume tours for years, and the field of re-enactment also belongs to the large area of storytelling. The most important principle is that knowledge must be conveyed and that the stories made accessible to the visitors should not only entertain but also educate them.

## 5. Summary

Cultural education, i.e. the transfer of knowledge and information, is one of the central tasks of museums. In recent years, the basic tasks of museums have expanded from a pure transfer of knowledge in the rooms of the museums to an additional digital transfer of knowledge on the Internet and the so-called social media.

For this reason, the profession of museum educators has also changed. New areas such as podcasts, storytelling, PR work, and posting have been added to the job description.

In addition, knowledge transfer in museums is still divided into direct and indirect education through texts, audio and media stations, guided tours, workshops, and special programs such as themed tours and, for example, short tours. Even in times of digital transfer, direct transfer by staff continues to be one of the most important means of cultural transfer.

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# Covid-19 Challenges and Possibilities

Anna WINDISCHBAUER

## **Abstract**

During the conference “Site Strengthening through Living History and Virtual Reality Incentives” three best-practice workshops were held. Syndicate Working Group 3, led by Living Danube Limes Project Partner Paris Lodron University of Salzburg (PLUS, Maria Erker and Anna Windischbauer) dealt with the topic of Covid-19 Challenges and Possibilities. In this workshop, participants got a general overview of the definition of museums as well as an introduction to the museum landscape in Europe, followed by an introduction to the digital platforms commonly used in Europe, especially in the cultural scene. Based on the 2020 pandemic lockdowns, two groups of participants then developed both an offline and an online strategy for how museums and cultural institutions can develop or maintain contact with visitors and interested people during an extended closing period and continue to offer cultural programs to minimize losses.

## **Keywords**

Covid-19, Museums, Cultural Institutions, Offline and Online Strategy, Pandemic

## **1. Introduction**

With the first pandemic-related lockdowns in 2020, the tourism and art and culture sectors of many European museums collapsed. In order to stay in touch with potential visitors and regular customers, but also to acquire funds to replace lost admissions, many new concepts and ideas emerged, especially in the online sector, e.g., social media platforms.

Three Best-practice Workshops were, for example, scheduled for the conference “Site Strengthening through Living History and Virtual Reality Incentives”, hosted by the Associated Partner “Roman City Carnuntum” of the EU Interreg Project “Living Danube Limes” and held online between Monday, March 22 and Friday, March 26 2021. In one of these workshops, the Syndicate Working Group 3: Covid-19 Challenges and Possibilities was led by Maria Erker, who is an expert in Knowledge Transfer and Museum Education at the Paris Lodron University of Salzburg (PLUS), Department of Classical Studies/Ancient History, and Anna Windischbauer as a Cultural Communication expert at the same institution.

The objectives of this specific workshop included new ideas for museums in pandemic situations. Accordingly, it was discussed how museums could reach out to potential new customers during a closing period, how the public could be kept informed and engaged, and how funds could be collected without a constant influx of admission fees.

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\* BA MA, Roman Provincial Archaeologist, Social Media Expert, Project staff, Dept. of Classical Studies, Paris Lodron University Salzburg (PLUS). Residenzplatz 1, 5020 Salzburg, Austria. [anna.windischbauer@liwest.at](mailto:anna.windischbauer@liwest.at)

Syndicate Working Group 3 consisted of twelve people (ten participants and two workshop leaders), including four men and eight women from five different countries (Germany, Croatia, Bulgaria, Slovakia, and Austria).

## 2. Workshop Structure

At the beginning of the workshop, every participant shortly introduced themselves and their institutions. The participants also gave an insight into the perspectives they thought the workshop to provide for their work in their respective institutions and during the pandemic. Following this introduction session, the workshop organizers presented the schedule of the workshop and the single topics to be addressed in work packages. The details of this are further discussed in the following chapters of this paper.

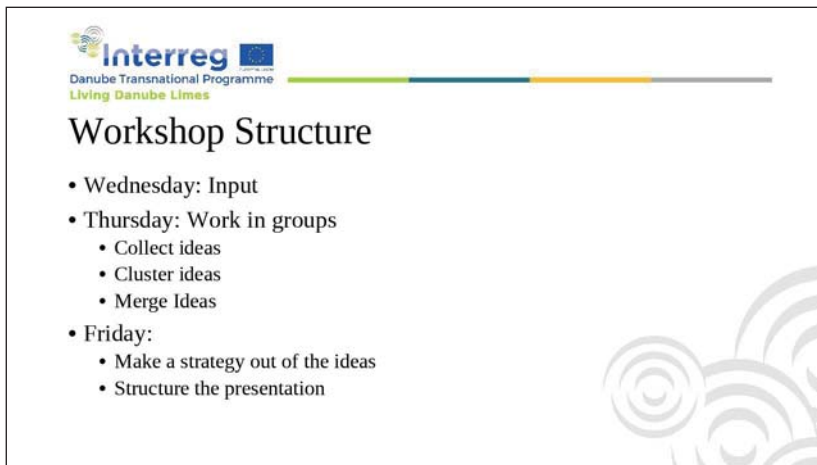


Figure 1. Final presentation sheet including workshop structure

### 2.1. Day 1: Wednesday (2021-03-24, 11.40–13.30 CET)

The session started with a short input section about the “Five Tasks of a Museum” according to ICOMOS<sup>1</sup>, which include:

- Collecting
- Conservation
- Research
- Showing/Exhibiting
- Knowledge Transfer

<sup>1</sup> ICOM. <http://icom-oesterreich.at/page/icom-oesterreich> (20.03.2022).

In addition, a summary of the lockdowns in 2020 was presented (e.g., the first lockdown in Austria took place from mid-March to May 2020). Due to the lockdown situation, many museums started to use social media platforms to communicate with their visitors and to reach out to the general public. Hence, a large part of the museum landscape displayed and is still displaying information for their visitors in the form of posts, short videos, and podcasts on a regular basis.

With this input, the workshop leaders started a small online survey followed by a discussion: the participants of the workshop were asked to brainstorm the definition of social media and to mindmap the platforms they were familiar with.<sup>2</sup>

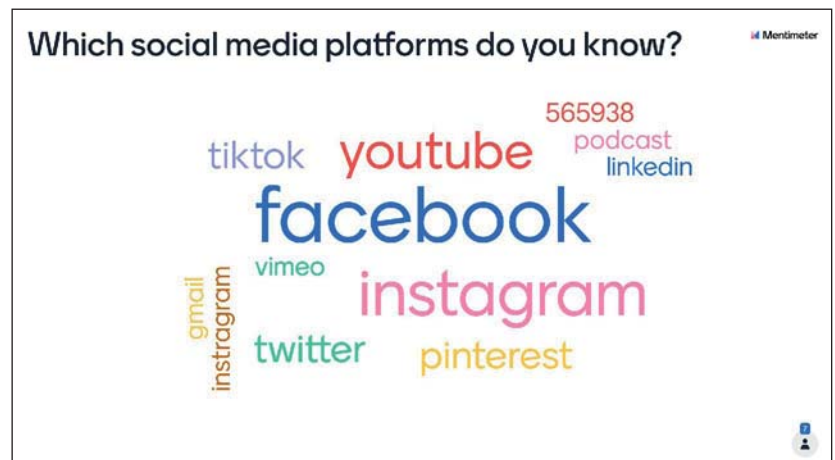


Figure 2. Cluster presentation of the survey, created with the Mentimeter software<sup>2</sup>

Most of the participants did know big players like Facebook, Instagram (from mother company Meta), and Youtube, followed by TikTok, Twitter, and Pinterest. For these platforms, the group discussed the most common forms of use, the target groups for both users and addressees, and the age groups of users.

Then some good and bad examples of contacting visitors via social media were presented and discussed. In addition, an overview of different social media feeds was given, which featured the following types of social media interaction.

### 2.1.1. Information postings

Figure 3 shows a typical information posting on a social media platform. Usually, this posting type contains a picture of an object with some information. Before 2020 and its pandemic outbreak, these kinds of contributions were created by many museums and are still in vogue.

<sup>2</sup> Mentimeter. [www.mentimeter.com](http://www.mentimeter.com) (22.03.2022).



Figure 3. Posting of the Celtic Museum Hallein in Austria<sup>3</sup>

### 2.1.2. Short Videos (Reels)

With the onset of the pandemic, new ideas started to grow in addition to classical information postings. For example, videos on historical topics for children or videos with instructions for doing handicrafts and painting with children became increasingly popular. Short documentaries appeared after a few weeks as well. Such informative videos are based on the traditional format of the television documentary. They display a historical event/period or a political situation and highlight geographical regions, buildings, cultural properties, or people in little time (on average 15 minutes) and, thus, represent a suitable tool to engage the public with topics related to the museum.

### 2.1.3. Guided Tours

A room or a topic can be presented with the help of a re-enacted guided tour. In this case, a guide/supervisor/museum educator presents the content of a video as if it were a real tour.

### 2.1.4. Podcasts

Many museums work with podcasts, which address a wide range of target groups. For adults, a length of 10–12 minutes has proven successful, if there is only one speaker. If there is a dialogue situation with more than one speaker, a length of 20 minutes is within reason. Podcasts or audiobooks for children can have a length of up to 50 minutes if they vary in soundscapes, narrators, and locations and, hence, provide a diversified setting and experience.

### 2.1.5. Backstage Contributions

A special form of videos and podcasts is the so-called backstage contribution. The audience and viewers have the feeling of learning something about the institution that is not addressed in an

<sup>3</sup> Keltenmuseum Hallein Instagram. <https://www.instagram.com/keltenmuseum.hallein/> (22.03.2022).



exhibition. This strengthens the bond with an institution and raises the interest of people who are normally not interested in the museum's subject matter. In some instances, backstage tours are offered in museums during ongoing operations, e.g., in workshops, conservators' offices, or libraries.

### 2.1.6. Creative Challenges

Especially Museums of Art History regularly ask their online community to become active themselves, e.g., by re-enacting famous paintings (*tableau vivant*), interpreting them, or applying a particular painting technique. This type of social media interaction can be subsumed as creative challenges.

After addressing these types of social media interaction and feeds, the discussion of workshop day 1 concluded with an assignment. The participants should internalize the discussed forms of contacting the public via social media by thinking about what they would do if they worked in a museum that was – on short notice – not allowed to open to the public due to a pandemic.

## 2.2. Day 2: Thursday (2021-03-25, 09.00–13.30 CET)

The second day of the workshop began with a summary of the previous day. Then, the working group members separated into two groups with two different topics: online and offline strategies for longer closing times. They collected ideas and formed strategies, which were clustered under the moderation of the workshop leaders.

After the introduction to social media use in cultural institutions and the various possibilities of engaging the public via online communication tools on the first day of the workshop, this group discussion and clustering represented the main focus of the workshop. As can be seen in Figures 4 and 5, the discussions were fruitful and able to bundle a diverse collection of inputs.

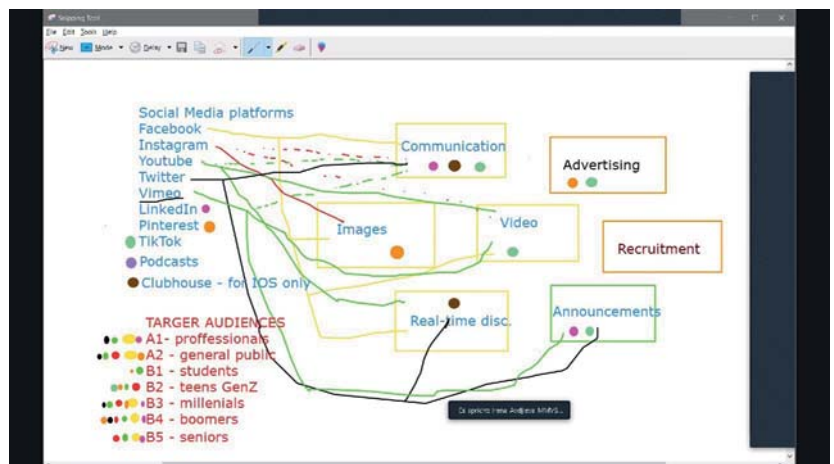


Figure 4. Screenshot of clustering process of the online strategy group

### Brainstorm: Offline communication opportunities for museums during the pandemic

- Writing letters – postcards, small paper gifts – for small payments
- Selling merchandise
- Recurring events with digital light projections – objects
- Interactive games – on site - making pottery ancient pottery information
- Focusing on the local population, living around the museum
- Inviting local artists for making the open-air local events
- Visits for small bubble groups – charging it
- Buying a ticket online and making appointments for the visits
- Adopting the historical objects from the museum deposit collection – finding donors the adopter is on the shield under the object
- Making the catalogue, prospect in commercial letters, magazines
- Find the cooperation with the commercial food markets, pop-up exhibitions in the markets/bigger malls, present the products together with the history (e.g. food with ancient pottery)
- Making educative materials to disseminate it in the schools
- Making small exhibitions in the classes with copies of the objects
- Percent of taxes to the particular museum/institution
- Using the interiors and exteriors for the commercial photo-shootings, online conferences, online events

Figure 5. Screenshot of clustering process of the offline strategy group

### 2.3. Day 3: Friday (2021-03-26, 09.00 – 13.30 CET)

On the third and last day, the groups collected their results and ideas, prepared a presentation, and presented their strategies at the final joint online session together with the other Syndicate Working Groups. The results of the two groups and the workshop in general are wrapped up and presented in an encompassing way in the following.

## 3. Results

These two groups approached the topic differently and differed in the form of the presentation as well. Group 1 (online) collected their results in a powerpoint presentation, and group 2 (offline) in a word file. After a summary of the generally valid results (see Figure 6), the groups presented their

The slide features the Interreg logo (a stylized globe) and the Danube Transnational Programme logo (the European Union flag) at the top left. Below the logos, the text reads 'Danube Transnational Programme' and 'Living Danube Limes'. A horizontal bar with green, blue, and yellow segments spans the width of the slide. The main title is 'How to gain money during pandemic'. Below the title is a bulleted list of ideas:

- merchandise (books, replica, ...)
- stamps
- customized museum currency
- DIY boxes (for selling)
- behind the scene tours (online)
- adopting historical objects (by private persons & institutions)
- sponsor-event
- renting museum space for special events (photosessions ...)
- collecting funding platforms (patreon)

In the bottom right corner, there is a decorative graphic of overlapping circles.

Figure 6. Groups result about gaining funds/money during a pandemic

areas separately. The following subchapters 3.1 and 3.2 present an overview of the groups' results in an easily approachable list format:

### **3.1. Group 1: Online communication opportunities for museums during a pandemic/closing period**

#### **Facebook:**

- Announcements of activities
- Information sharing
- Facebook Live – for videos, presentations, and workshops
- Links to other platforms
- Games
- Contests
- Virtual tours
- **Negatives:**
  - Poor connection to YouTube
  - Lack of reactions/feedback

#### **Instagram:**

- Image sharing
- Announcements of activities
- Information sharing
- Videos – IGTV or short clips – 30 sec.
- Games
- Contests
- **Negatives:**
  - Poor connection to other platforms
  - No link sharing

#### **Twitter:**

- Live discussions
- Announcements
- Link to other platforms
- Usability as a news channel

**Pinterest:**

- Image sharing (collections)

**TikTok:**

- Attractiveness for a younger audience

**Vimeo:**

- Professionalism

**Youtube:**

- Storytelling
- Lectures and demos
- Announcements of activities
- Information sharing
- Games
- Contests
- Virtual tours
- Thematic playlists
- **Negatives:**
  - Lack of interactions
  - Large quantity of ads
  - High use of mobile data

**Clustering according to the ICOMOS “Five tasks of a museum”:**

- **Collecting** (object-collection): Pinterest, Instagram, Facebook (with hashtags), Youtube (for showing exhibitions and for virtual tours to promote collections)
- **Conservation:** Facebook (creating a page for a site), Youtube, Vimeo
- **Research:** Pinterest, Youtube, Vimeo (if content can be traced to a reliable source); Instagram, Facebook
- **Showing/Exhibiting:** all platforms allowing postings/uploads of images and videos
- **Knowledge Transfer:** podcasts, Facebook, Instagram (image annotations), Youtube, Vimeo (lectures, demos), VR/AR

**General clustering:**

- **Acquisition of income:** Facebook Marketplace, Instagram, monetization options at Youtube and Facebook; product advertisement on Pinterest and Twitter
- **Communication with the audience** (incl. handicapped people): in real-time on Facebook, Instagram, Twitter

- **Special needs in the online sector:**
  - subtitles (hearing disadvantages, foreign languages)
  - audio options (simple and slower language)
  - 3D printed models of artefacts
  - homepage preparation for text-to-speech-software
- **Target groups:**
  - **Facebook:** adults (older than 30 years), families, groups with specific interests
  - **Instagram:** younger adults (20 to 30 years)
  - **Youtube:** all ages
  - **Virtual Tours:** all ages

### **3.2. Group 2: Offline communication opportunities for museums during a pandemic/closing period**

The offline working group first came up with a design of different target groups and then discussed general possibilities for income generation during a pandemic. With both aspects combined, specific possibilities were then assigned to different stages of pandemic measures.

#### **Target groups:**

- **General public:** all target groups, no specific aim.
- **Adults:** target group of working adults from 18 to 65 years of age.
- **Children:** children from 5/6 to 14/15 years of age.
- **Teachers:** people working in the education sector.
- **Young families:** families with children under 11/12 years of age.
- **Seniors:** People over 60 years of age.

#### **General possibilities for generating extra income/raising funds:**

- Creating a subscription programme: stationary, postcards, small paper gifts etc. can be ordered from the museum for a small price (**seniors**)
- Selling merchandise and publications (e.g., books) (**general public**)
- Selling information packages on ancient pottery and selling DIY products for children (**young families**)
- Organizing visits for bubble groups: small groups can purchase tickets for a fixed appointment for a museum visit online (**young families**)
- Organizing an "adoption" programme for the historical objects from the museum collection/depot; sponsors can be named in the object reference label in the exhibition/collection (**adults**)

- Finding cooperation partners for advertisements and brochures that are usually not part of the museum budget (adults)
- Finding cooperation partners in the commercial food sector: pop-up exhibitions in supermarkets/malls, presentations of products in the context of history (e.g., specific foodstuffs with ancient pottery) (general public)
- Producing educational materials, arranging lectures in schools, and organizing small exhibitions in schools, e.g., using copies of museum objects (children, teachers)
- Initiating changes in the Austrian tax system: some part of the tax revenues could directly go to cultural institutions, and the decisions on the distribution of the funds could be made by the taxpayers themselves, as is done in other countries (adults)
- Using the interiors and exteriors of the museums for commercial photo shootings, online conferences, and online events as part of a cooperate branding initiative that also produces extra income (adults)
- Organizing a “night in the museum” event – only for school classes, there should be camping/ sleeping arrangements near the site of the museum (children)
- Disseminating calls with information about the museums (general public)

**Solutions for more extreme pandemic situations (lockdown, general closing period, tight political and social measures):**

- Creating a subscription programme: stationary, postcards, small paper gifts, etc. can be ordered from the museum for a small price (seniors)
- Organizing recurring events with digital light projections of museum objects (general public)
- Selling information packages on ancient pottery and selling DIY products for children (young families)
- Advertising the museum to the local population (general public)
- Organizing visits for bubble groups: small groups can purchase tickets for a fixed appointment for a museum visit online (young families)
- Finding cooperation partners in the commercial food sector: pop-up exhibitions in supermarkets/malls, presentations of products in the context of history (e.g., specific foodstuffs with ancient pottery) (general public)
- Producing educational materials, arranging lectures in schools, and organizing small exhibitions in schools, e.g., using copies of museum objects (children, teachers)
- Using the interiors and exteriors of the museums for commercial photo shootings, online conferences, and online events as part of a cooperate branding initiative that also produces extra income (adults)

- Promoting the coverage of museums at the local radio stations – e.g., by organizing quizzes; engaging with other local media such as newspapers, e.g., by incorporation into crossword puzzles (general public)
- Disseminating calls with information about the museums (general public)

### **Solutions for less extreme pandemic situations (no lockdown, partly cancelled measures):**

- Organizing recurring events with digital light projections of museum objects (general public)
- Organizing interactive games and workshops on-site, such as pottery classes; selling information packages on ancient pottery and selling DIY products for children (young families)
- Inviting local artists to participate in local open-air events (general public)
- Organizing visits for bubble groups: small groups can purchase tickets for a fixed appointment for a museum visit online (young families)
- Finding cooperation partners in the commercial food sector: pop-up exhibitions in supermarkets/malls, presentations of products in the context of history (e.g., specific foodstuffs with ancient pottery) (general public)
- Producing educational materials, arranging lectures in schools, and organizing small exhibitions in schools, e.g., using copies of museum objects (children, teachers)
- Using the interiors and exteriors of the museums for commercial photo shootings, online conferences, and online events as part of a cooperate branding initiative that also produces extra income (adults)
- Organizing a “night in the museum” event – only for school classes, there should be camping/ sleeping arrangements near the site of the museum (children)
- Promoting the coverage of museums at the local radio stations – e.g., by organizing quizzes; engaging with other local media such as newspapers, e.g., by incorporation into crossword puzzles (general public)
- Disseminating calls with information about the museums (general public)

### **Knowledge transfer and the promotion of the museums and their offers:**

- Creating a subscription programme: stationary, postcards, small paper gifts, etc. can be ordered from the museum for a small price (seniors)
- Organizing interactive games and workshops on-site, such as pottery classes; selling information packages on ancient pottery and selling DIY products for children (young families)
- Organizing an “adoption” programme for the historical objects from the museum collection/ depot; sponsors can be named in the object reference label in the exhibition/collection (adults)

- Finding cooperation partners for advertisements and brochures that are usually not part of the museum budget (adults)
- Finding cooperation partners in the commercial food sector: pop-up exhibitions in supermarkets/malls, presentations of products in the context of history (e.g., specific foodstuffs with ancient pottery) (general public)
- Producing educational materials, arranging lectures in schools, and organizing small exhibitions in schools, e.g., using copies of museum objects (children, teachers)
- Organizing a “night in the museum” event – only for school classes, there should be camping/sleeping arrangements near the site of the museum (children)
- Wearing parts of ancient clothing with modern work uniforms (e.g., policemen, firefighters, teachers, travel guides, hospital staff) (general public)
- Promoting the coverage of museums at the local radio stations – e.g., by organizing quizzes; engaging with other local media such as newspapers, e.g., by incorporation into crossword puzzles (general public)
- Disseminating calls with information about the museums (general public)

#### **Public Relations:**

- Advertising the museum to the local population (general public)
- Inviting local artists to participate in local open-air events (general public)
- Finding cooperation partners in the commercial food sector: pop-up exhibitions in supermarkets/malls, presentations of products in the context of history (e.g., specific foodstuffs with ancient pottery) (general public)
- Initiating changes in the Austrian tax system: some part of the tax revenues could directly go to cultural institutions, and the decisions on the distribution of the funds could be made by the taxpayers themselves, as is done in other countries (adults)
- Wearing parts of ancient clothing with modern work uniforms (e.g., policemen, firefighters, teachers, travel guides, hospital staff) (general public)
- Promoting the coverage of museums at the local radio stations – e.g., by organizing quizzes; engaging with other local media such as newspapers, e.g., by incorporation into crossword puzzles (general public)
- Disseminating calls with information about the museums (general public)

### **3.3. Summary**

Both groups pursued different strategies for museums and cultural institutions to maintain communication with visitors/interested parties and to attract potential new customers with cultural programmes. Figure 6 shows a summary of both groups’ results for the acquisition of funds during a longer closing period. The following points were suggested: merchandise, customized stamps and museum currency, Do-It-Yourself (DIY) boxes, “adoption”/sponsorship of historical objects, sponsored



events, the renting out of museum spaces for special events, online behind-the-scene tours for a limited number of people or single dates, and the use of fundraising platforms, such as Patreon<sup>4</sup>. Most of these points can be implemented offline as well as online. For instance, merchandise can be promoted online via social media platforms or a museum onlineshop, or sold in stores, at special events, or even in front of the museum. Another idea was the creation of special issue stamps and customized museum currency, which can both display specific objects of the respective museum’s collection and, thus, attract the public’s attention. DIY boxes with special give-aways from the museum shop can also be promoted on social media and distributed via a museum website or onlineshop.

Figure 7 contains a list of comparisons of online and offline strategies. An individual examination of the strategies shows above all a difference in addressing the target groups. The online sector primarily addresses younger target groups but adults, families, and interested individuals as well. Offline strategies target specific groups such as teachers with school groups, the local community, and older generations.

It can be seen that using both online and offline strategies has a far greater advantage and thus opens up a wider field of communication, not only appealing to existing visitors and those interested in culture but also attracting new customers and younger target groups.

The workshop “Covid-19 Challenges and Possibilities” produced a rich output with many ideas and approaches to publicize a museum or cultural institution in times of lockdowns and closing periods.

Online	Target Group	Offline	Target Group
<b>Facebook:</b> Text plus picture live-discussion marketing feedback/interactive forum	adults, families, special interested group	Radio, Newspaper, postcards, advertisement in public buildings/magazines	local audience, especially older generation
<b>Instagram:</b> Focus on visual stuff	younger adults	pop up exhibition	local audience
<b>Youtube:</b> Information videos short documentary behind the scene	all ages all around the world	Adopting an historical object	all groups
<b>virtual tours</b>	all ages	produce educative materials for schools	school teachers/students
		merchandise/promotion (stamps, ...)	all groups
		challenges (families)	
		DIY (families)	

Figure 7. Comparison of online and offline strategies collected by the workshop groups

<sup>4</sup> Patreon. <https://www.patreon.com/de-DE> (22.03.2022).

  
Part of the team



Figure 8. Part of Syndicate Working Group 3

The participants engaged openly with the topic and considered and discussed common strategies. This shows how important a good basis for communication is.

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# Authors





# Authors

## **Mircea Victor Angelescu**

Scientific Director of the Archaeological Site Histria, Institute of Archaeology "Vasile Pârvan", Str. H. Coanda no. 11., Bucharest, Romania. The Institute of Archaeology "Vasile Pârvan" is an associated strategic partner in Living Danube Limes. (mircea.angelescu@gmail.com)

## **Margareta Arsenescu**

Cultural heritage protection specialist. (m\_arsenescu@yahoo.com)

## **Alessandra Bonazza**

Institute of Atmospheric Sciences and Climate, National Research Council of Italy. (a.bonazza@isac.cnr.it)

## **Dragoş Dordea**

PhD, Architect. Lecturer of University of Architecture and Urbanism "Ion Mincu", Bucharest (UAUIM). The University of Architecture and Urbanism "Ion Mincu", Bucharest (UAUIM) is a project partner in Living Danube Limes. (dragosdordea@yahoo.com)

## **Maria Erker**

Ancient Historian, Certified cultural educator. Project staff and lecturer, Dept. of classical studies, Paris Lodron University of Salzburg. The Paris Lodron University of Salzburg is a project partner in Living Danube Limes. (maria.erker@sbg.at)

## **Mislav Fileš**

Mag. archeol., Archaeologist, Institute of Archaeology of Republic of Croatia, Zagreb. (mfiles@iarh.hr)

## **Bill Griffiths**

Head of Programmes and Collections, Tyne and Wear Archives and Museums.

## **Bogdan Ispas**

Architect. Assistant of University of Architecture and Urbanism "Ion Mincu", Bucharest (UAUIM). The University of Architecture and Urbanism "Ion Mincu", Bucharest (UAUIM) is a project partner in Living Danube Limes. (bogdan\_ispas@yahoo.com)

**Anna Maria Kaiser**

Assistenz Prof. Mag. Dr., Danube University Krems (Austria), Centre for Cultural Property Protection. She is the project coordinator of Living Danube Limes. (anna.kaiser@donau-uni.ac.at)

**Zsuzsanna Emília Kiss**

Architect, archaeologist. Lecturer of Budapest University of Technology and Economics, Faculty of Architecture, Department of History of Architecture and Monument Preservation. The Budapest University of Technology and Economics is a project partner in Living Danube Limes. (pathene@gmail.com)

**Gergő Máté Kovács**

PhD, architect, specialised engineer of monument preservation. Research fellow of Budapest University of Technology and Economics, Faculty of Architecture, Department of History of Architecture and Monument Preservation. The Budapest University of Technology and Economics is a project partner in Living Danube Limes. (kovacs.mate.gergo@epk.bme.hu)

**Ana-Maria Machedon**

PhD, Architect. Lecturer of University of Architecture and Urbanism "Ion Mincu", Bucharest (UAUIM). The University of Architecture and Urbanism "Ion Mincu", Bucharest (UAUIM) is a project partner in Living Danube Limes. (ana\_machedon@yahoo.com)

**Nigel Mills**

Heritage consultant.

**Georgică Mitrache**

PhD, Architect. Professor of University of Architecture and Urbanism "Ion Mincu", Bucharest (UAUIM). The University of Architecture and Urbanism "Ion Mincu", Bucharest (UAUIM) is a project partner in Living Danube Limes. (georgica.mitrache@uauim.ro)

**Ivana Ožanić Roguljić**

Dr. sc., Archaeologist, Institute of Archaeology of Republic of Croatia, Zagreb. (iozanic@iarh.hr)

**Mihaela Simion**

PhD, National History Museum of Romania. (mihaela.simion98@gmail.com)

**Peter Strasser**

Univ.-Prof. Mag. Dr. Peter Strasser, Danube University Krems (Austria), Centre for Cultural Property Protection. (peter.strasser@donau-uni.ac.at)



**Decebal Vleja**

PhD, National History Museum of Romania. (vdecebal@yahoo.com)

**Zorán Vukoszávlyev**

PhD, architect, specialised engineer of monument preservation. Associate professor of Budapest University of Technology and Economics, Faculty of Architecture, Department of History of Architecture and Monument Preservation. The Budapest University of Technology and Economics is a project partner in Living Danube Limes. (vukoszavlyev.zoran@epk.bme.hu)

**Anna Windischbauer**

BA MA, Roman Provincial Archaeologist, Social Media Expert, Project staff , Dept. of Classical Studies, Paris Lodron University Salzburg (PLUS). The Paris Lodron University of Salzburg is a project partner in Living Danube Limes. (anna.windischbauer@liwest.at)



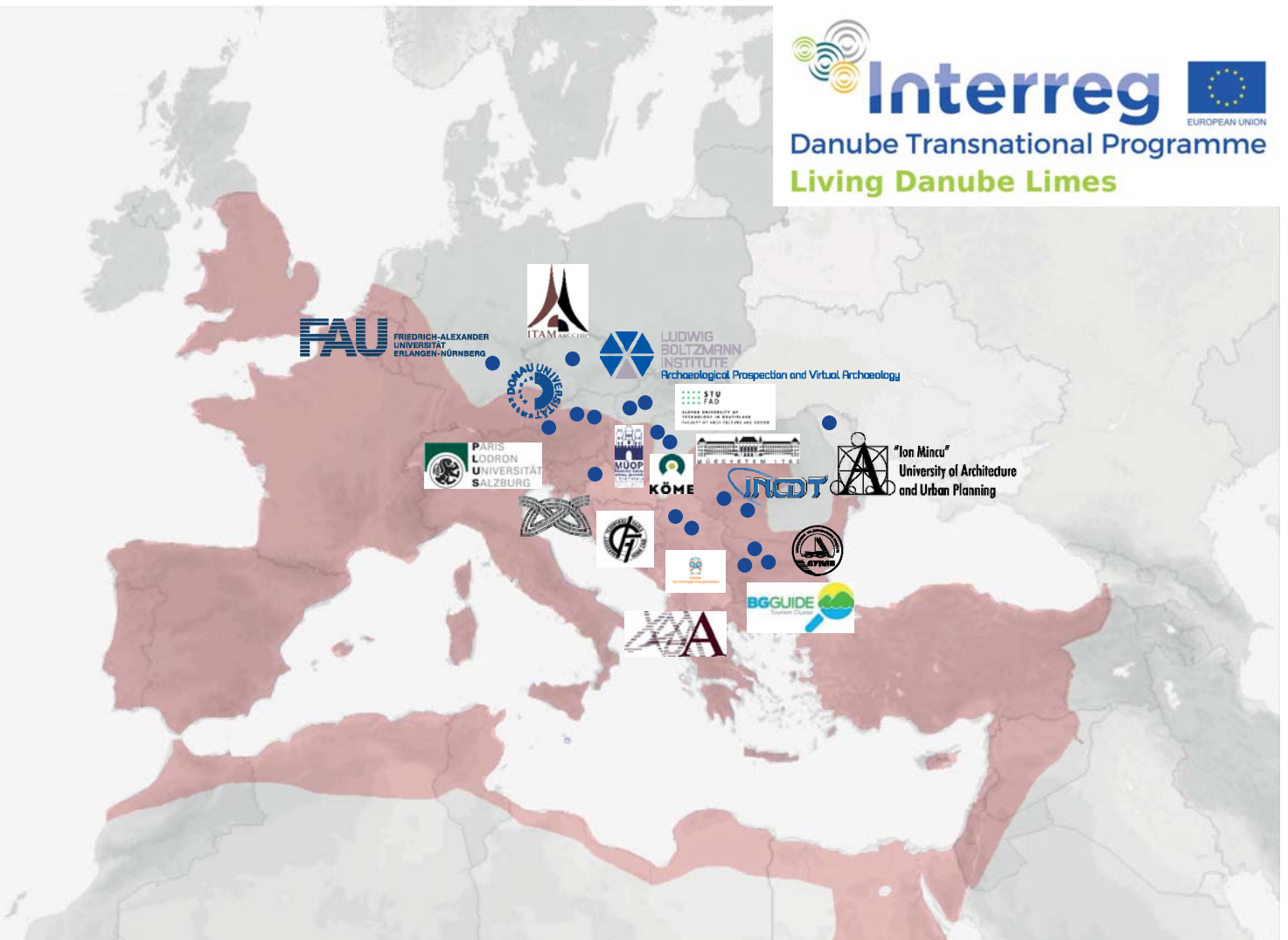
# Project Partners





# Project Partners

## Introduction of the Living Danube Limes Partners



The Living Danube Limes partnership comprises 46 partners (19 project partners and 27 associated strategic partners) from 10 Danube region countries: Austria, Germany, Czech Republic, Slovakia, Hungary, Croatia, Serbia, Bulgaria, Romania, and Moldova. Find out more about our 19 project partners in the following:

### **Danube University Krems, Center for Cultural Property Protection (Austria) as Lead Partner**

DUK is the leading public university for continuing education in Europe. With its expertise in teaching and research, it works to overcome societal challenges. Located in the UNESCO World Heritage Cultural Landscape of Wachau in Austria, it lays great value on the respect and sustainable exploitation of cultural heritage.

DUK, as the Lead Partner in the project, is mainly involved with its *Center for Cultural Property Protection*. The centre applies a broad, coherent, and practice-related approach. Thanks to the close cooperation with the *Center for Architectural Heritage and Infrastructure at the Department for Building and Environment*, the specific requirements and needs for cultural property in general and UNESCO-World Heritage sites, in particular, can be met. An efficient global network ensures the practical implementation of cultural property protection.

In Living Danube Limes, DUK contributes its expertise on cultural heritage protection from all kinds of threats, from natural to man-made ones, UNESCO World Heritage, management plans of cultural heritage sites, aspects of cultural heritage resilience, issues of cultural sustainability, and green tourism. DUK also supplies archaeological expertise as well as expertise in disseminating the Roman past in the 21<sup>st</sup> century to the project.

### **Friedrich-Alexander-University Erlangen-Nuremberg (Germany)**

The professorship of ancient history at the Friedrich-Alexander-University Erlangen-Nuremberg is one of the most innovative institutes in the Federal Republic of Germany and worldwide. That can be seen in both research and education:

In education, the professorship organises the project “Schülerkontaktstudium” for the entire university. In this way, the professorship supports the transition from school to university for students of all subjects. Students of ancient history are also supported during their studies in exercises, seminars, lectures (with accompanying tutorials), and during exams with exam-related training and seminar-accompanied coaching for qualification work at every level.

Third parties strongly fund the Institute: it is supported by the Gerda Henkel Foundation, the DFG, the Volkswagen Foundation, the Thyssen Foundation, as well as HRK, BMBF, and EU funding programmes. The Institute conducts basic research focusing on the constitutional history of Athens, ancient historiography, Roman provincial history, the history of Roman-Germanic relations, and Greek epigraphy. Publications on new discoveries and research discussions are published on an ongoing basis. Over the last four years, a further focus has been established on reconstructing Roman river ships according to scientific criteria. The first project occurred between 2016 and 2018, completing the construction of the F.A.N., a replica boat which travelled on the Danube to the Black Sea. Currently, a new centre in Gunzenhausen (close to the site of the old Roman fort) and at (modern) Altmühlsee is being built, and the reconstruction of a 4<sup>th</sup> century AD Danube patrol boat of the type “*lusoria*” is undertaken there. As the projects listed above show, the professorship is also committed to the close

connection between science and the public (science-mediated). In this way, the institute shows how effective and modern ancient history can be today.

### **Department of Antiquities / Ancient History, Paris Lodron University Salzburg (Austria)**

The Department of Antiquities consists of three units: Ancient History, Classical and Early Aegean Archaeology, and Classical Philology. Its focus is researching the history, culture and civilization, art, and literature of Antiquity and its predecessor cultures in the Mediterranean area and their post-ancient transformations.

The main topics of the Ancient History unit are Roman Provincial history and sociology or cultural mediation, but its activity also covers economic and social history, cultural and mental history, military history, and history of medicine.

The Head of the PLUS Team is Mag. Dr. Rupert Breitwieser, whose primary academic interest comprises the fields of History of Medicine, Underwater Archaeology, Ancient Ships and Seamanship, and Roman Provincial Studies. Further members of the Team are Mag. Dr. Maria Erker, BA, who is specialized in Museum pedagogy and education, and Anna Windischbauer, BA, a Master's student of Archaeology and Ancient History at PLUS, who is focusing on Roman Provincial Studies.

PLUS will contribute essentially with its expertise in Roman Provincial Studies and museum pedagogy in the research of the history and development of the Austrian Danube Limes sites as well as in cultural mediation and museology.

### **Ludwig Boltzmann Institute for Archaeological Prospection and Virtual Archaeology (Austria)**

The Ludwig Boltzmann Institute for Archaeological Prospection and Virtual Archaeology (LBI ArchPro) is an international research initiative dedicated to developing and advancing future technologies and methods for safeguarding our shared cultural heritage. The LBI ArchPro's approach is based on applying non-invasive, efficient archaeological prospection and digital documentation methods.

Remote sensing (laser scanning, aerial imaging, image-based 3D modelling) and near-surface geophysical prospection (magnetometry, ground-penetrating radar) are used in archaeology to discover and explore buried and still-standing archaeological structures without exposing them to the risk of destruction. The LBI ArchPro team develops motorized multi-sensor measurement systems for high-precision prospection surveys at all scales – from single stones to entire archaeological landscapes.

Efficient software tools have been developed and employed for the computer-based visualisation and archaeological interpretation of the collected data. The experts search for archaeological structures hidden in the virtual data images on the computer. The "virtual dig" results in digital archaeological interpretation maps and 3D virtual reconstructions.

Since 2010, the LBI ArchPro has investigated many archaeological landscapes throughout Europe with its groundbreaking research approach, such as the UNESCO World Cultural Heritage sites of Stonehenge, the Viking Age settlement of Birka-Hovgården, and the Roman town of Carnuntum in Austria.

The LBI ArchPro is a research institute of the Ludwig Boltzmann Gesellschaft and is based in Vienna, Austria.

### **Institute of Theoretical and Applied Mechanics of the Czech Academy of Sciences (Czech Republic)**

The predecessor of the Institute of Theoretical and Applied Mechanics (ITAM) was established in 1921 as a building research and testing facility of the Czech Technical University in Prague. In 1953, the Institute was incorporated into the newly established Czechoslovak Academy of Sciences (later Czech Academy of Sciences). The Institute traditionally focuses on research related to building materials, structures, and sites. It performs basic and applied research in the fields of solid phase mechanics, focused particularly on dynamics, micromechanics, biomechanics, nonlinear mechanics, processes of failure of materials, and mechanics of particulate media. Besides, it has been involved in research into interdisciplinary problems of cultural heritage, contributing to a scientific base for the preservation, knowledge, and use of monuments, historic settlements, and cultural landscapes. Furthermore, the Institute's research interests cover the hidden characteristics of cultural heritage objects that may be utilized for dating, determining origin, and other purposes of archaeometry. It also deals with historical construction techniques and historical urbanism. Research is particularly focused on methods of managing historic buildings and settlements facing impacts of global challenges and risks on cultural heritage, including the impacts of inappropriate use, such as mass tourism, or that of natural and man-made disasters, namely floods or earthquake and wind action in combination with other harmful weather effects. Methods for effective safeguarding, resilience improvement, and preservation of cultural heritage before and after the disaster are also studied in the Institute.

### **The Municipal Monument Preservation Institute in Bratislava (Slovakia)**

The Municipal Monument Preservation Institute in Bratislava (MMPI) is a research institution with experts in archaeology, ethnography, architecture, and art history. It is situated in the centre of Bratislava's Old Town. The Institute was founded in 1968, and, during the past 52 years, it has been the only municipal monument preservation institution in Slovakia with coordinating, advisory, and scientific supervisory roles. During that time, many significant archaeological excavations and discoveries were achieved. The MMPI was awarded three times in the category "The Best Discovery of the Year in Slovakia" (1996, 2002, and 2009), two times in "Exhibition of the Year" (2015, 2017), and once in "Event – Long Term Project" (2019) prizes of the journal *Monuments and Museums* and the Monuments Board of Slovak Republic. In 2003, the Institute was provided with the Prize for Cultural



Heritage – Europa Nostra Award by the European Union for the Fishermen’s Forgate archaeological excavation and its presentation.

Ivo Štassel has been the director of the MMPI since 2004. He studied art history within the scope of historic architecture and worked as a conservationist. His work has mainly focused on the city of Bratislava in the fields of historic urbanism, presentation of archaeological heritage, and monument restoration, both movable and immovable.

Margaréta Musilová has worked as an archaeologist at the MMPI since 1984. Besides archaeological research, she has been engaged in the presentation and popularization of (not only) archaeological heritage. For her efforts, she received several prizes (e.g., Europa Nostra, a prize of the magazine *Monuments and Museums*).

Anna Gondová is an architect and researcher focusing on monument restoration, the history and theory of architecture, and activities connected to the presentation of tangible and intangible heritage.

Silvia Nováčiková studied archaeology and comparative religion and took part in excavations both at home and abroad.

Jana Gillányiová works as an accountant at the MMPI and has long-time experience in financial management.

### **The Slovak University of Technology, Faculty of Architecture (Slovakia)**

Architecture education at the STU began in 1946, making the Faculty of Architecture (FA) the latest addition to the Slovak University of Technology Faculty. At that time, the Department of Architecture and Structural Engineering was established as a part of the Structural Engineering Branch of the Slovak Polytechnic (SVŠT), today called the Faculty of Civil Engineering. In the following seventy years, the Faculty has transformed into a vital and competitive institution that serves over 1000 students each year. Hosting courses in Design for more than 25 years, in 2020, Design has made it into the official title: the Faculty of Architecture has been renamed, and, as of September 2020, the Faculty of Architecture and Design has started to write its new history.

Nowadays, the Faculty of Architecture and Design STU is the largest educational institution for architects and designers in the Slovak Republic. The faculty’s profile reflects university principles and establishes the conditions for professional performance within the country and EU. In this respect, there is a clear orientation to educate architects, urban planners, and designers within a creative framework. The present two-year tier education system focuses on a graduate’s preparedness. The curriculum emphasizes, besides art and theory, a variety of technical and design subjects, from urban planning to interior design.

The Faculty of Architecture and Design is situated in a building designed by Emil Belluš, the most important Slovak architect of the 20<sup>th</sup> century and founder of the school, of whom the hall, “Aula of

Professor Belluš", residing within the college, is named. Besides, the building incorporates lecture classrooms, studios, computer facilities, and the Faculty library, which holds a comprehensive collection of professional books and journals to be utilized for developing creative abilities and professional skills.

### **Budapest University of Technology and Economics, Department of History of Architecture and Monument Preservation (Hungary)**

The Department of History of Architecture and Monument Preservation dates back to 1870; therefore, the institution is almost the same age as university-level, organized architecture education in Hungary.

The earliest predecessor of today's institution was the Department of Architecture, founded under Imre Steindl more than a century and a half ago. Certainly, over the long decades, names, roles and tasks, and staff have changed significantly; however, it has remained a national scientific workshop for the education of Hungary's architectural history through time.

Besides the history of architecture, earlier building design, later (and today still) the scientific research of monument preservation and architectural theory played an essential role in the portfolio of the Department.

The most important task of the Department is to teach the complete spectre of history of architecture through theoretical lectures and practical seminars in a comprehensive way. The subject accompanies students throughout their education, and the transfer of knowledge on monument preservation is based on the skills developed in the lectures mentioned above. We aim to validate a historical approach within complex architectural design and diploma design courses supported by consultation opportunities with the concerned teachers and professors.

The Department also offers a post-gradual programme to achieve the degree of "Specialised Engineer in Preservation of Built Heritage".

The Department professors participate in the Standing Committee of History and Theory of Architecture and Monument Preservations at the Hungarian Academy of Sciences.

Research activity at the Department is supported by a professional library comprising nearly 20,000 volumes and archive books, an information service by a professional librarian, as well as a unique Archive of Drawings and Plans. *Architectura Hungariae*, the online scientific journal of the Department, has been published for several years. *Architectonics and Architecture (Építés-Építészettudomány)*, one of the Hungarian Academy of Sciences' journals, is also edited at the Department, just like the scientific journals *Monument Preservation (Műemlékvédelem)* and that of the Faculty of Architecture, *Periodica Polytechnica Architecture*. During the academic year, we aim to provide a personal experience for architectural students through regular on-site survey programmes in Hungary or abroad. The

department also considers it important to involve the next generations in research; therefore, our students are key participants in Scientific Student Conferences.

An important aim of the Department is to participate in the contemporary scientific discourse and various national and international cooperation and research programmes.

Every lecturer and member of the Department is involved in both education and research activities of the Living Danube Limes project.

### **Association of Cultural Heritage Managers (Hungary)**

KÖME – Association of Cultural Heritage Managers is a community of people working in heritage-related fields in Hungary. The association was founded in 2012 by alumni of iASK – Institute of Advanced Studies Kőszeg, who saw the need for independent, bottom-up platforms for cultural and natural heritage. KÖME was meant to play an active (plat)forming and path-breaking role in this endeavour.

Since its founding in 2012, the association has indeed broken new paths, launched professional discourses, developed its own training courses, and participated in many international projects while continuously enlarging and refreshing its membership. In all our works, we are committed to bringing together heritage-related professions and contrasting knowledge and different points of view that are rarely communicating with each other. We are committed to improving the quality, international dimensions, and regeneration potential of the Hungarian heritage field. KÖME's strength lies in collaboration and the embracing of differences.

Our motto is Heritage Together!

### **Institute of Archaeology (Croatia)**

The Institute of Archaeology was established on 26 January 1961 at a founding session, by a Decision of the Department of Archaeology and the Department of Art History of the Faculty of Humanities and Social Sciences of the University of Zagreb, under the name "Institute of Art History and Archaeology", to further scientific work on the research of national heritage in the fields of archaeology and history of art.

By a decision of the Council of the Faculty of Humanities and Social Sciences of the University of Zagreb on 15 May 1965, the institution is working under the name "Archaeological Institute". By a decision of the Council of the University of Zagreb, on 13 June 1968, it acquired the status "independent Archaeological Institute of the University of Zagreb". Based on the Organisation of Scientific Work Act and the Decision of the Republic Council for Scientific Work, issued on 23 December 1976, the Institute was integrated into the Centre for Historical Sciences, while later, on 9 September 1987, into the Institute for Historical Sciences of the University of Zagreb. On 21 November 1990, the Institute for Art History became independent from the Institute for Historical Sciences. An independent

Institute for Art History, to which the Department of Archaeology was attached, was established by a decision of the Ministry of Science and Technology (1 October 1991).

The Institute of Archaeology has been positioning itself as the central scientific institution for basic and applied archaeological research in the Republic of Croatia, the interest of which covers all archaeological periods while also being a key participant in developing theory and methodology of research. Besides, the Institute created ARHINDOKS (Archaeological Information Documentation Centre), comprising thematic databases of archaeological sites and finds. In addition to basic archaeological research, Institute of Archaeology members participate in higher education. The Institute of Archaeology has intense publication activity: it produces scientific and professional journals, monographs, and proceedings and organizes international scientific conferences, round tables, and workshops.

### **Institute of Archaeology (Serbia)**

The Institute of Archaeology in Belgrade was founded on 31 May 1947 to gather experts in the field of archaeology in one scientific institution. Initially, it was part of the Serbian Academy of Sciences, designed to be a place from which future archaeological actions would be organized and systematically coordinated nationally and internationally. The work of the Institute was always based on scientific research, systematic excavations and surveys of archaeological sites, publications, and cooperation with other institutions related to archaeology and cultural heritage protection. Since 1961, the Institute of Archaeology has been a fully independent scientific institution financed by the Ministry of Sciences.

Researchers of the Institute have conducted a large number of significant excavations in Serbia. Among them, protective excavations that followed the construction of the hydroelectric power plants "Đerdap 1" and "Đerdap 2" on the Danube stand out by the scope of the projects, as well as the importance and number of sites they yielded. In recent decades, the Institute has continued to conduct archaeological investigations on several major sites, independently or in cooperation with museums and institutes to protect cultural monuments, and international partners.

In 1950, the Institute was honoured to take over the publication of *Starinar*, the oldest archaeological journal in Serbia – a work that continues to this day. Along with *Starinar*, the publishing activity of the Institute includes a series of special editions, numerous monographs, and thematic proceedings.

The number of associates of the Institute has gradually increased; today, the team includes more than fifty permanent researchers and about a hundred external associates. The Institute, despite the turbulent events of the last decades, has managed to survive for over 70 years and achieve continuously significant and notable results. This unique and central archaeological scientific institution is located in the centre of Belgrade, in the Serbian Academy of Sciences and Arts building.

### **Faculty of Technical Sciences, University of Novi Sad (Serbia)**

The Faculty of Technical Sciences is the largest faculty of the University of Novi Sad, established in 1960. It comprises 13 departments, ten administrative services, and 31 research centres. It offers 90 accredited education programmes. With over 15,000 students and 1,200 employees, the Faculty ranks among the region's largest and most developed faculties.

Rapid response through generating new technologies and the need to update the existing ones, as well as the intensive growth of the economy and the social sector, demand a corresponding development of research, together with a research-oriented faculty and other effective centres for transforming the knowledge into purposeful technologies. This presumes:

- intensive development of knowledge,
- high-quality educational process,
- flexible curricula,
- a new, functional faculty – an enterprise.

Consequently, the activities of the Faculty of Technical Sciences have been divided into

- education,
- research and development, and
- applied research (cooperating with actors in industry).

Research activities of the Faculty are directed towards the realization of research within basic, innovative, and technology development projects. The Faculty is accredited as a research and scientific institution. The Faculty's research and development activities are conducted in modern laboratories and computer centres. Currently, there are more than 120 projects supported by the Serbian and Provincial Ministries of Science and Technology and 87 international projects realised in different frameworks, including COST, EUREKA, H2020, INTERREG, ERASMUS+, and CEEPUS.

### **National Tourism Cluster "Bulgarian Guide" (Bulgaria)**

National Tourism Cluster "Bulgarian Guide" is a tourist organisation focused on the sustainable development of specialised types of tourism, including cultural heritage and cultural tourism, sustainable tourism development, and encouraging entrepreneurship development in the tourism sector. Its mission is linked to providing enriching travel experience to the "seeking" tourists and supporting the sustainable development of tourism-related SMEs through implementing innovative approaches for providing tourism services and packages.

NTC BG Guide is experienced in the following areas:

- Marketing and branding activities; organization of various events, e.g., B2B meetings, festivals, and training courses. It was a co-organiser of international matchmaking events within the ITB-Berlin in 2015 and 2016.
- Design of tourist packages and tourist routes.
- Development of online platforms and apps, including informational and marketing tourism websites, online education and training platforms, a business accelerator, and a business simulation game.
- Research and analysis of market conditions, legal frameworks, needs assessment, curricula, and educational systems.
- Elaboration of complex strategies, including sustainable tourism development, valorisation of cultural heritage, and implementation of innovative business models.
- Development of soft and digital skills among young people, encouraging entrepreneurship.
- NTC has developed and is currently successfully maintaining a portfolio of several IT platforms, including:
- A tourism platform ([www.bg-guide.org/en](http://www.bg-guide.org/en)) about Bulgarian cultural heritage, environmental sites, attractions, and culinary spots (restaurants) providing the user the opportunity for a different tourist experience. The platform was awarded the prize "Favourite Audience Website" by the Bulgarian Web Awards 2015.
- Educational platforms in the field of tourism: [www.trans-edu.net](http://www.trans-edu.net), [www.virtualrooms.eu](http://www.virtualrooms.eu), [www.sem-centres.eu](http://www.sem-centres.eu)
- A tourism-based business simulation game: [www.hotelempire.eu](http://www.hotelempire.eu)

### **Centre for Heritage Interpretation (Bulgaria)**

The CHI is an independent NGO established in 2011 that works to enrich the accessibility and quality of cultural offers by designing and introducing creative cultural experiences for tourists and visitors. It provides knowledge, tools, and skills to support heritage manufacturing by involving citizens in direct and digital formats of learning. CHI aims to inspire entrepreneurship by advancing quality heritage interpretation and acknowledgement, to create public understanding and appreciation of heritage, and allow for social inclusion by "improving the ability, opportunity, and dignity of (...) people on the basis of their identity" (The World Bank). The focus is the historical and cultural sites, landscapes, nature and theme parks, museums, local communities, tourism establishments, creative cultural industries, etc. CHI is a member of the Bulgarian National Tourism Council, a consultative body to the Minister of Tourism and the Interpret Europe Association, and collaborates with many organisations in the field of culture and tourism. It designs and implements a new generation of cultural heritage interpretive products and services for heritage sites, cultural operators, and tourism

establishments, which involve visitors and locals in inclusive experiences and co-creation. CHI promotes authentic cultures, which create value and respond to the new demands for emotional tourism. It builds value chains through participative co-management, thus fostering inclusive and sustainable community planning for an improved inter-generational and intercultural dialogue. CHI works for heritage resilience and rejuvenation in private and public spaces by applying internationally adopted criteria and standards for quality story writing and storytelling. It organizes training on how to engage audiences and relate directly to the DNA of local heritage and destinations.

### **Association of Danube River Municipalities “Danube” (Bulgaria)**

The Association of Danube River Municipalities “Danube” (ADRM) is a regional organisation incorporating 35 local public authorities (municipalities) in the Bulgarian part of the Danube region. It was founded in 1993. ADRM has a strong regional identity and leads the formulation of a concept and strategy for regional development as part of the Danube macro-region and for attaining the objectives of the EU Strategy for the Danube Region.

Priority policy areas for the Association are transport connectivity, tourism, energy and environment, education and research, and civil protection. Horizontal issues are good governance, smart specialisation, innovation, and sustainable development, cross-border and transnational cooperation.

ADRM is uniquely experienced in the Lower Danube area as concerns the valorisation of the common Roman Limes heritage: ADRM has developed a tourism route with all its elements (strategies and promotional materials); has compiled information and research on Roman Limes sites, museums, and festivals as well as good practice examples in development and promotion of the Roman heritage; has built partnerships with all the relevant stakeholders in Bulgaria and Romania. This experience can be built on in the larger partnership within the framework of Living Danube Limes. The informational base and educational/promotional materials on the Roman Frontier will be applied and further developed on a larger geographical scale.

### **The “Ion Mincu” University of Architecture and Urban Planning (Romania)**

The “Ion Mincu” University of Architecture and Urban Planning in Bucharest is the oldest and most important academic institution in this field in Romania. It continues a long tradition of local architectural higher education since the second half of the 19<sup>th</sup> century; the foundation of that is closely linked with the rise of modern Romania and the setting of its new institutional structure and culture.

The “Ion Mincu” University of Architecture and Urbanism in Bucharest offers several bachelor’s, master’s level, and doctorate programmes, leading to different specializations in the fields of architecture and urban studies.

The bachelor’s and master’s programmes are coordinated by the three faculties of the university: the Faculty of Architecture, the Faculty of Interior Architecture, and the Faculty of Urban Planning.

The UAUIM has one of the largest faculties of architecture in Eastern Europe. Its curriculum covers a wide range of architectural studies from architecture and planning, design to technology, structure to construction, sustainability to energy efficiency, etc.

After 15 years since its foundation, the Faculty of Interior Architecture has continued and improved its curriculum comprising three study programmes.

The Faculty of Urban Planning has been operative since 1997, called to life by the demand to have urban planner training close to building designer education so that the two directions may overlap within the urban design field.

UAUIM has relations with more than eighty architecture schools in Europe, Asia, South America, and the United States. The Tempus program and, subsequently, the Erasmus program facilitated the exchange of students and teachers between the UAUIM and more than fifty architecture schools in Europe.

### **National Institute for Research and Development in Tourism (Romania)**

The National Institute of Research and Development in Tourism (INCDT) is the only institution in Romania that specialises in scientific research of national interest in the field of tourism. INCDT has a vast experience in tourism research, accumulated over 49 years of continuous activity. The role of INCDT is to substantiate the scientific basis for the development of Romanian tourism in all its forms, to contribute to the increase of the competitiveness of this sector, and to develop national and local strategies in this field.

INCDT has been involved in more than 14 EU-financed projects since 2010, aimed at improving international cooperation in the field of tourism at the EU level and particularly within the Danube Region.

The Institute implemented many national projects financed under national research programs and contributed to numerous tourism infrastructure development projects for mountain, seaside, and balneo-therapeutic resorts. Besides, it was involved in the development of the National Tourism Strategy 2019–2022, the General Master Spatial Planning – Tourism Chapter, the National Ecotourism Strategy, and many other various local and regional level strategies.

INCDT is a member of various working groups in the field of tourism and has been a member of the European Cultural Tourism Network since 2014.

INCDT's main areas of competence are developing studies and statistics in tourism, as well as local, county, and regional strategies in tourism, technical documentation (feasibility and pre-feasibility studies), and research and development in tourism.



**Ungheni City Hall – Republic of Moldova**

Ungheni is a region in the central-western part of the Republic of Moldova, located in the immediate vicinity of the European Union. The local hub of the region is Ungheni city. It is located at a distance of 105 km northwest of the capital of the Republic of Moldova and extends 9 km on the left bank of the Prut River. Ungheni is an important economic centre with a well-developed road network, one of the largest railway junctions in the Republic of Moldova, and a river port. According to the last census (2016) data, it is the third largest city in the country.

Ungheni City Hall is a legal entity; by law, it has a heritage and benefits from financial autonomy. The city's public administration is based on the principles of local autonomy and decentralization of public services. The economic base of the City Hall is the city's heritage, a source of revenues to meet the social-economic needs of the residents. It is part of the public heritage, managed by the city's public authorities with enterprises, state institutions, and organizations directly serving locals in the area.

Ungheni is the home of some most important and branded products of the country, also promoting national culture and traditions, such as "Covoare-Ungheni" (production of carpets), "Ceramica-Ungheni" (production of ceramic articles) and "Ungheni – Vin" (wine and brandy production). Due to its geographical position, the city is called "the Western Gate of the Republic of Moldova to Europe", having a vast touristic potential; a place where the past connects with the present and makes paths to the future. The heritage of Ungheni and its utilization in tourism constitutes a chance for the region's social and economic development within the Living Danube Limes project through a strong commitment of all stakeholders involved, focusing on natural landscapes, history, and culture. Therefore, the project provides a unique opportunity to integrate the knowledge and findings available in the partner countries and domains for developing efficient and useful procedures for introducing, promoting, and preserving cultural heritage.

