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# BOOK OF ABSTRACTS

# PLENARY LECTURES

**Maria Gravari Barbas, Paris 1 – Sorbonne University, France; UNESCO-UNITWIN network Culture, Tourism, Development**

## FROM DEFENDING PARIS TO CULTURE: THE HERITAGE OF PARIS' FORTIFICATIONS

Until the end of the 3rd century and again after the early 20th century, Paris existed as an "open city." But for most of its history between those periods, it developed within fortified walls. No other city in the world has had as many successive ramparts as Paris. The last of these, the Thiers Wall, was built between 1841 and 1846. Stretching thirty-nine kilometres in circumference and rising ten metres high, it was reinforced by sixteen detached forts extending the defensive perimeter to sixty kilometres.

The ramparts were dismantled between 1919 and 1929 to make way for the Boulevards des Maréchaux and later the ring road. Unlike other military complexes, the Thiers Wall was never preserved in its entirety. Yet it continues to shape the city's identity. The term *la ceinture* ("the belt") still refers to the network of transport routes—both surface and underground—that circle the capital. Even today, the very outline of Paris reflects the imprint of its fortifications.

Recognition of the sixteen detached forts as heritage sites has been inconsistent. Decisions have been made locally, by municipalities or departments, rather than at the national level. As a result, their fates vary widely: some have been demolished, others abandoned or relegated to minor uses. Only a handful have been transformed into cultural venues, becoming new focal points for their communities.

This paper first reviews the current condition of the sixteen forts, then examines the broader issue of heritage recognition for the city's fortifications. Why have Paris' defensive structures not received the same status as other types of heritage? And what can be done today to safeguard the few remaining traces of this unique urban history?

**Donatella Rita Fiorino, University of Cagliari**

## INTERINSTITUTIONAL SYNERGIES FOR REGENERATION STRATEGIES. THE CASE STUDY OF LA MADDALENA ENTRENCHED FIELD IN SARDINIA (ITALY)

The lecture aims to share a selection of research carried out by the University of Cagliari on a specific typology of military landscapes and assets, in the framework of a fruitful cooperation established with the Italian Ministry of Defence in the field of engineering and architecture. A special agreement, still in effect, was signed in 2018 to develop in-depth studies on historical forts, barracks, military hospitals, and other military heritage sites, with the aim of adapting them to modern needs while safeguarding their historical values. This was the occasion for reflecting on the abandonment generated by the modernisation process of the Armed Forces, in Italy as well as in other European countries, which makes historical buildings inadequate for new military functions. Consequently, many of them fall into disuse and are progressively abandoned. We are referring to properties within military areas that are currently in use, as well as entire estates that have been released from military use and transferred, in the Italian case, to the Real Estate National Agency, a state institution responsible for managing national assets. How can we recognise, interpret and safeguard this sometimes uncomfortable memory, which interchanges memories of war, usurpation and violence with more reassuring messages of security, commemoration, peace and progress? Moreover, how can we cope with the ‘time in between’: the time between the disposal and the starting of a new life for these monuments?

Of course, there is not one only correct answer to any of these questions, and it is now clear that there is not one, but many “military landscapes”. Military landscapes are dynamic landscapes, constantly changing. Very often, they are highly stratified sites. We know that military buildings were centrally planned and designed following a typological scheme. However, single garrisons were accurately adapted to their location, using constructive techniques and specific materials available in the building place. This aspect makes them unique. Another critical element is the strict relationship that they establish with the surrounding natural environment. So that we can say that military landscapes are more than cultural landscapes, they are what UNESCO defines as associative landscapes. In the same way, due to the temporality of their defensive function, their decommissioning is a cyclic event, which represents part of their military history.

Among the defensive landscapes, ‘Entrenched Fields’ systems are certainly the least studied. The defence system of the ‘Entrenched Field’ was widely adopted throughout Europe between the mid-nineteenth century and the First World War, primarily in Capitals and along the Franco-German border line. For the historical evidence and the memory of wars, these artefacts must be considered identity sites of a European architectural heritage, which includes many small and large cities of our Old Continent. Discussing entrenched fields, the lecture will provide a quick overview of European heritage perspectives. It then shifts focus to Italian case studies: first, a detailed analysis of Forte Aurelia within Rome’s entrenched field; second, a unique example: the network of forts and batteries in the La Maddalena Archipelago, Sardinia. Located in northeast Sardinia, this strategic stronghold was connected to other garrisons along the Sardinian coast to counter French threats. The lecture will examine the defence system, highlighting its typological, material, and functional features, as well as some restoration and reuse projects developed as part of educational and research programmes, exploring dual-use perspectives.

**John Harris, Fortress Study Group, UK**

# A COMPARATIVE REVIEW OF BEST PRACTICE IN THE SUSTAINABLE REUSE OF POST-ARTILLERY FORTIFICATIONS IN THE UNITED KINGDOM AND INTERNATIONALLY

The Fortress Study Group paper examines UK progress in the sustainable reuse of post artillery fortifications, identifying both good practice examples and the challenges and opportunities with fortifications at risk. The objective is to promote two-way sharing of experience and learning to increase the likelihood of successful sustainable reuse of fortifications in the UK and internationally. As an international society, based in the UK and a member of the International Fortress Council, the FSG examines examples of both good practice and challenges associated with the sustainable reuse of fortifications. We consider the influence of different custodial models, including heritage and civil public bodies, military authorities, voluntary/ community bodies, the private sector. We will compare this with international exemplars and identify where the UK can offer or learn lessons.

In the last 30 years many more UK fortifications have become publicly accessible and presented to varying degrees. Heritage bodies have developed but not generally increased their estate. The standout trend has been the growth in the voluntary sector. Successful conversion to new uses including housing/commercial or social use has been less frequent but there are recent more promising examples. It remains very challenging to find funding and sustainable new uses for the largest sites, including some recently vacated by the military. Compared to international best practice the UK could significantly improve the marketing of its fortifications as systems or cultural routes.

The UK has a wealth of fortification heritage which is increasingly 'open to the public'. However, compared to international exemplars, there is a latent opportunity to collectively present this heritage more effectively and embed it more firmly in the local community. Grasping this opportunity will realize the potential of this heritage as cultural and social assets.

## PANEL 1: STRATEGIC GUIDELINES FOR PROTECTION AND VALORISATION OF FORTIFIED HERITAGE IN THE ADRIATIC REGION

**Daniela Angelina Jelinčić, Institute for Development and International Relations**

## CULTURAL HERITAGE IN PRACTICE: SUSTAINABILITY, PARTICIPATORY MANAGEMENT, AND CULTURAL HERITAGE IMPACT ASSESSMENT

Today, sustainability is one of the biggest challenges for cultural heritage (CH). Despite a number of funding sources, a number of bad investments are noted due to inappropriate management models. Alongside economic sustainability, environmental, social and cultural durability make CH management an extremely complex task. Long-term planning and maintaining project impact, is not always established. This calls for new approaches and CH management models. At the same time, CH interventions need to apply a holistic approach to assessing their impacts. Comprehensive assessments, however, have been rarely applied due to a lack of holistic assessment models. This paper presents findings of a long-term research on CH divided in three research lines: 1. complexity of CH sustainability, 2. New CH management models, and 3. CH impact assessment. The aim of the research was to find answers to the stated problems, which would support CH managers and decision-makers in applying sustainable solutions. The paper presents a) challenges of CH sustainability alongside inspiring solutions, b) different partnership models and examples of their practices, and c) a proposed model for a holistic CH impact assessment.

EU data demonstrate significant allocations for CH, but maintaining the effect of CH investments is a challenge. Making a balance between social, cultural, economic and environmental aspects in CH management is challenging. In economic terms, CH sustainability is often linked to tourism and entrepreneurship; in social terms, it can be a significant source of social cohesion; in ecological terms, we usually speak about its energy-efficiency, while cultural sustainability is about the protection of CH inherent values. Coordinating these complex issues is directly linked to management approaches, where a strong shift towards participatory management models is noted. Several models such as public-civil, public-private, and public-private-community partnerships are put forward. As well, impacts of CH interventions need to be monitored to ensure potential gaps in ensuring sustainable development and resilience.

This long-term research consists of three lines of research pertaining to 1. CH sustainability, 2. Approaches and models of CH management, and 3. CH impact assessment. Methodologies include desk research, analysis of good and poor practice examples, ex post analysis, interviews with CH managers, focus groups, and comparative analysis.

Achieving holistic sustainability of CH is extremely complex and all pillars must be well aligned. A set of indicators for measurement of CH sustainability may prove helpful in that respect as well as the holistic CH impact assessment model. Public actors are the key component of CH management/governance but expectations regarding successful management exceed their capabilities, which is why other models should be in place although each with (dis)advantages.

The study contributes a) a set of indicators for measurement of CH sustainability, b) a purposely developed SoPHIA CH impact assessment model, and c) analysis of effectiveness of different models of CH management. This may have a direct implication on CH sustainability.

**Zofia Mavar, Ministry of Culture of the Republic of Croatia**

# THE STATE OF FORTIFICATIONS IN THE PULA FORTRESS SYSTEM – ISSUES, POSITIVE EXPERIENCES, AND STRATEGIC GUIDELINES FOR PROTECTION AND REHABILITATION

The impressive belt fortress system of Pula, composed of hundreds of relatively well-preserved examples of permanent fortifications accompanied by military and other facilities, represents a unique type of cultural landscape. This historical entity, Austria's most expensive military investment, extends over the surface of approximately 700 km² of the Istrian coastal area from the Lim and Raša Bays to the Premantura Point, including related islands (such as the group of fortifications on the island of Mali Lošinj).

The entire system was constructed gradually, from the 1820s until the First World War. The defensive structures and associated military facilities demonstrate the fortification expertise of military engineers, technicians, and builders from the multinational Habsburg Monarchy. Furthermore, they provide an overview and comparison of the military doctrines that were concurrently present across European territories. According to renowned experts in military architecture, the significance and value of this exceptional historical entity transcend national borders.

However, the heritage protection policy for this rich and valuable legacy, whose construction played a significant, if not crucial, role in the development of Pula and its wider surroundings, does not align with objective needs, as well as the conclusions, plans, and obligations of professional services arising from legal provisions based on the conclusions and recommendations of international conventions, to which Croatia is a signatory.

Many fortifications that have survived to the present day have been neglected for a long time, devastated, and left to deteriorate. Only a small number have been temporarily maintained while the few attempts at adapting individual structures for contemporary purposes have not proven effective in the long term. Poorly conceived uses and/or inadequately planned projects have resulted in considerable degradation of historical structures.

The number of fortifications that have been properly studied and legally protected is negligible, increasing their potential vulnerability, particularly in recent decades, with the initiation of numerous development plans and investment projects, especially within the demilitarized military zones along the Adriatic coast.

Although local communities have launched numerous constructive initiatives and actions to save endangered heritage, the implementation of proposed protection and revitalization programs is hindered by various legal, administrative, organizational, professional, and financial challenges.

Based on extensive experience in the protection of historical entities, as well as personal observations and reflections on strategic guidelines for the rehabilitation of Pula's fortifications, this presentation aims to highlight key issues and emphasize priorities and opportunities for their more effective resolution.

**Kristina Perkov, University of Zagreb, Faculty of Architecture**

# CHALLENGES AND OPPORTUNITIES IN THE REPURPOSING OF ABANDONED MILITARY SITES FOR URBAN REGENERATION IN COASTAL CITIES OF CROATIA

Coastal areas of Croatia, particularly urban centers, are experiencing significant pressures due to intense tourism, resulting in inappropriate construction, inadequate infrastructure, ecological threats, the usurpation of maritime property, and the erosion of coastal landscape integrity. These challenges call for the implementation of protection measures and a sustainable approach to urban development.

The repurposing of abandoned military sites plays a crucial role in sustainable urban regeneration. These sites, located in attractive locations, present substantial potential for economic growth, social infrastructure enhancement, and the preservation of cultural and historical heritage. However, their transformation faces numerous administrative, spatial, and financial obstacles. The complexity of the process, uncertainties, high risks, and the costs associated with restoration and remediation discourage investment from both private capital and local authorities. The reuse of these sites is further hindered by ecological and safety concerns, such as the removal of hazardous materials (e.g., asbestos, salonite) and explosives, which impose significant financial burdens. Additionally, the lack of adequate data on these locations further slows down the transformation process.

From an urban planning perspective, the goal of transforming abandoned military sites in urban areas is their successful integration into city space, allowing for efficient land use and the creation of high-quality urban environments. This paper presents a comparative analysis of military site redevelopment in the coastal cities of Šibenik, Zadar, and Pula. The findings indicate that, although some processes have advanced, a significant number of areas have yet to undergo transformation. This highlights the need to improve the management and transformation strategies for military sites.

The potential for redeveloping abandoned military sites depends on the specific spatial characteristics of each site. This research identifies specific patterns and trends in the transformation processes of military spaces, revealing challenges such as inadequate traffic accessibility, complex ownership structures, and the absence of proper spatial documentation. However, these spaces can be successfully developed through strategic urban planning, public-private partnerships, innovative management models, and the active involvement of local communities in decision-making processes. Including a broad range of stakeholders – from local communities to the private sector and non-governmental organizations – can align interests and increase the likelihood of successful redevelopment. Considering the significant differences among the characteristics of military sites, the spatial development of each city and abandoned military site must be planned individually, taking into account the specific spatial characteristics. The repurposing of military spaces in Croatia's coastal cities requires an interdisciplinary approach, long-term vision, and flexible development models to facilitate their successful integration into the urban fabric. By developing tailored strategies and adopting internationally proven redevelopment models, these sites can be more effectively integrated into urban environments, contributing to the sustainable development of coastal cities.

**Nataša Urošević, Kristina Afrić Rakitovac, Juraj Dobrila University of Pula**

## HERITAGE OF EUROPEAN NAVAL PORTS AND HISTORIC ARSENALS – THE CASE OF PULA

The paper will elaborate on the historical and cultural importance of European naval ports and arsenals, with a special emphasis on the city of Pula, in the broader context of the Adriatic fortification systems. Due to its important geopolitical position and turbulent multicultural history at the crossroads of European cultures, Croatia is characterized by a rich diversity of cultural landscapes and a wealth of fortification architecture. From the pre-historic, Hellenic and Roman period, fortified structures along the Adriatic coast were built to protect the ancient maritime trade routes. Because of frequent Turkish invasions, in order to protect the frontiers of their empires, the Venetian Republic and the Habsburg Monarchy fortified the Adriatic coast. The result and contemporary legacy of this process are well-preserved Adriatic fortifications, which include Venetian and Habsburg coastal systems, French and British forts. Well preserved Adriatic coastal systems of Venetian and Austro-Hungarian fortifications are witnesses of the turbulent past and a common European heritage. Some of them are already listed as UNESCO-world heritage, other are still waiting a proper valorisation, such as the unique former Naval Fortress Pula.

The Pula fortification system, among the most complex defensive systems in the Mediterranean, was built from 1813 to 1918 and occupied an area of over 700 km2 with the only task to protect the main naval port whose center was the Arsenal and the anchorage of the of the Austrian navy fleet. During the short French rule, Pula was visited in 1806 by the French hydrographer Beautemps-Beaupré, who carried out cartographic measurements for the French Navy and explored the possibilities of Pula as a war port with a large naval arsenal. He reported that this suberb harbor with unique natural characteristics could host a fleet of 30 ships. On the advice of the Danish Admiral Hans Birch Dahlerup, commander of the Austrian navy, the Emperor Franz Joseph I of Austria declared Pula in 1850 a new military port, replacing Venice, after the revolutionary uprisings in 1848. Many top-class European engineers arrived in the city to design a new system of defences, such as the Pole Viktor Domaszevski, the first military urbanist or Pula, who visited all European naval ports (from Portsmouth and Plymouth to Toulon and St. Petersburg) in search of the best model of development of military and fortification architecture for Pula.

Research conducted in Austrian archives indicated the historic importance of the Pula naval port, which was described in Austrian press reports as the "Austrian Portsmouth"! Through a comparative approach, the lecture places Pula in a broader European framework, analyzing the impact of strategic military infrastructure on the urban and social development of the city, indicating the current challenges and possibilities for revitalizing these areas and valorizing adequately industrial and military heritage. The heritage of European naval ports and historic arsenals, which will be presented at the conference (from Venice, Portsmouth, Toulon and Valletta, Suomennlina and Ferrol) include best practice models for valorisation and revitalisation of former military and fortified heritage, which could be used in Pula and Brijuni too.

**Panel 2 – TRANSFORMING FORTIFICATIONS INTO CULTURAL, EDUCATIONAL AND SCIENTIFIC HUBS**

**Daniel Gethmann, Volker Pachauer, Graz University of Technology**

# STRATEGIC INFRASTRUCTURE: THE AUSTRO-HUNGARIAN FORTIFICATION SYSTEM AROUND PULA

Discussing the work of the French architect and media theorist Paul Virilio the paper presents a general analysis of fortification systems as strategic infrastructures. The paper argues that the architectural typology of fortification systems is in many aspects different to all other architectural forms; Virilio even concludes that "all construction conditions for a building are disrupted by the artifice of war." This argument will be reviewed by an analysis of the fortification system for the city and port of Pula as strategic infrastructures; the paper shows that the fortresses, bunkers and other military buildings first of all create a landscape of defensive constructions with its strategic routes. Moreover, the fortification objects around the harbor of Pula sit on carefully chosen strategic points in the landscape and define a line of defense that is expanding over time. However, the vectorization of their range locates their relationship to each other, but also shows how far this landscape of defensive constructions extends in the area. The sphere of action of the artillery is the extension of the individual fortress, but also, what defines its intended function.

As a conclusion we will show at the end of the paper some projects of students of Architecture from Graz University of Technology that are related to the transformation of the strategic infrastructure's landscape of defensive constructions in Pula into a cultural and social-condensed landscape of peace.

**Wojciech Rymsza-Mazur, Cracow University of Technology, Faculty of Architecture**

# RESEARCH, STUDIES, AND PROJECTS ON SELECTED STRUCTURES IN THE DEFENSIVE LANDSCAPE OF THE PULA FORTRESS (2002–2025)

The military activity of Austria-Hungary in the Adriatic basin, along the coasts of Istria, Dalmatia, and the nearby islands, was marked with the construction of a harbour and an Austrian navy base, as well as the initial phase of the Pula Fortress construction in the second half of the 19 th century. The fortifications of the fortress, situated alongside remnants of ancient structures from the Roman Empire (around the 1 st century BC), the Byzantine era, and later modern periods, have become an integral part of the landscapes of the Istrian coast and the Brijuni Islands, creating a unique mosaic of both, the oldest and the most recent history.

Within these areas, significant military fortified structures as well as background structures were erected, forming a distinctive defensive landscape. Their purpose and military functions embedded in the original scenery of rocky cliffs, numerous bays, peninsulas, and complex shorelines, were complemented by both ornamental and functional greenery compositions, that to this day have formed an invaluable heritage with historical, cultural, as well as architectural and landscape values, subject to valorisation, conservation, revitalisation, adaptation, and protection.

The remains of stone and concrete shells of forts and batteries, moats carved into coastal rock promontories - like fossilised dinosaurs of the age of steam and gunpowder - are both austere and tragic, yet still fascinating, still alive, finding continuation in the turning wheel of the military history of Europe. Stripped of their lifeblood - people and weapons - they have retained a bygone yet palpable spirit of place. A spirit permeating the extraordinary, beautiful landscapes of rock, greenery, and turquoise waters, which change beyond the lifetime of subsequent generations - unique in Europe, along the coasts of Istria and Dalmatia. This represents a unique challenge which requires the use of contemporary techniques, resources, methodologies, and management approaches.

What message is conveyed here? What narrative? What discoveries? These may integrate the technical legacy of the preserved structures in the framework of military engineering and armament mechanics—as witnesses of their creators' ingenuity, with contemporary demands for quality of life and well-being. This connection is realised through educational spaces that promote a culture of peace and sustainable development. To seek answers, one should directly touch the history of the site, from the relics of the Roman Empire and Byzantium to the precise stonework of the fortifications left by the successors of Caboga, and the advanced military technology of Škoda - the massive cannons, remnants of armour, all preserved in the historic buildings and details of military structures. This subject has been the focus of nearly a quarter-century of research, studies, and projects by the author, dedicated to the preservation of the cultural heritage of the Pula Fortress.

**Milena Mičić, Aquarium Pula**

## REVITALIZATION OF THE AUSTRO-HUNGARIAN FORTIFICATIONS ON THE VERUDELA PENINSULA

Fort Verudella and Battery San Giovanni on the Verudela Peninsula in Pula, Croatia, belonged to the Austro-Hungarian coastal fortification system built between 1881 and 1886 to safeguard Pula, the monarchy's primary naval harbour from 1856 to 1918. After their military role ended in 1918, these fortifications served various functions before falling into disrepair by the late 1980s. In 1963, Battery San Giovanni underwent extensive alterations for tourism, affecting its structural authenticity. By 2008, the fortifications were designated as protected cultural heritage sites, and subsequent revitalisation activities were guided by the State Conservation Department.

The revitalisation of Fort Verudella began with the approval of the Department for Architectural Heritage of the City of Pula. From 2002 to 2008, proposed interventions were planned and supervised by experts from the Universities of Zagreb, Kraków, and Pula, including architect Zofia Mavar, who also led international summer workshops on fortification architecture. Two workshops, held in 2006 and 2008, were explicitly dedicated to Fort Verudella. Following these studies, significant restoration efforts were undertaken, including structural repairs, roof waterproofing, and the installation of a steel dome in 2017 to accommodate new aquarium tanks. In 2024, archaeological research and the restoration of the site's historical garden commenced, further enriching the cultural and historical value of the fortification. Meanwhile, the intensive revitalisation of Battery San Giovanni began in 2023, as Aquarium Pula assumed full site management, ensuring its preservation and continued development.

The revitalisation involved a multidisciplinary approach, including archival and archaeological research to ensure historical accuracy, architectural conservation and restoration, referencing similar fortifications from the same era to preserve elements such as fences, floors, and windows, structural restoration of walls and metalwork, incorporating principles of statics and engineering. Construction of aquarium facilities, including the architectural and structural design of various aquarium tanks with Life Support Systems, with visitor experience design, featuring elements such as the entrance, exhibits, tanks, pathways, gift shops, and cafés, ensuring a balance between heritage conservation and modern functionality.

Aquarium Pula has evolved from a small family enterprise into a thriving company employing 53 people. Within its 5,000 m² space, it holds 600,000 litres of water and exhibits 350 Mediterranean and exotic species. Research areas include breeding units and a molecular and microbiological laboratory, highlighting its commitment to marine conservation. Recognised nationally as a significant educational and scientific centre, it now ranks among Pula's most prominent tourist attractions, welcoming approximately 225,000 visitors annually. Moreover, the aquarium displays an Austro-Hungarian Naval Collection with over 50 ship models and 300 artifacts, representing its growing role in preserving maritime heritage. Plans involve establishing a Naval Museum in a building owned in central Pula, thus integrating cultural heritage, education, and tourism.

Aquarium Pula is an example of good revitalisation practice and a model of self-sustainability for cultural heritage. It demonstrates the successful transformation of a former military structure into a facility dedicated to nature conservation.

**Olha Tikhonova, Seville University, Art History Department**

# FORTIFIED CITIES AS PILLARS FOR UNITY AND SUSTAINABLE DEVELOPMENT

Fortified cities stand as historical testaments to human resilience, ingenuity, and cultural heritage. Throughout centuries, they have served as strategic military strongholds, economic centers, and symbols of identity. In Ukraine, a rich network of fortified cities emerged in response to geopolitical shifts, military threats, and urban planning ideals. Among these, Ivano-Frankivsk represents an exceptional case study of an ideal city, offering valuable insights into the rehabilitation and sustainable development of historic fortified city. This research explores the role of forts as pillars of peace and unity, proposing best practices for their integration into contemporary city life while preserving their historical significance.

The typology of Ukrainian fortified cities reveals diverse origins, structures, and functions. From medieval defense strongholds to Renaissance bastion systems, these cities adapted to shifting sociopolitical contexts. Many were designed following European urban planning principles, influenced by Italian and Dutch fortification models. Ivano-Frankivsk, founded as Stanisławów in the 17th century, exemplifies a model bastion fortification based on the ideal city concept. Its unique radial plan, defensive walls, and bastions not only shaped its urban identity but also fostered social cohesion and economic prosperity. Despite their historical significance, Ukrainian fortified cities face profound challenges. Urban expansion, inadequate conservation policies, war damage, and neglect threaten their integrity. The loss of original structures, coupled with modern infrastructure developments, risks erasing their cultural and historical narratives. Sustainable rehabilitation requires a multidisciplinary approach, integrating historical research, typomorphological analysis, architectural conservation designs, and community-driven sustainable development.

Ivano-Frankivsk serves as a leading example of how to address these challenges. Its transformation from a military stronghold to a vibrant cultural hub demonstrates the potential of adaptive reuse and sustainable urban development. Key rehabilitation strategies include: (1) heritage-led regeneration, where historical structures are repurposed for cultural, educational, and tourism activities; (2) community engagement, fostering local participation in preservation efforts; (3) technological integration, using digital tools such as 3D mapping and modeling for educational purposes. Additionally, this research reinterprets the cultural role of ideal fortified cities. By redefining their function beyond their defensive past, these cities can be transformed into vibrant cultural and economic centers, fostering tourism, education, and community cohesion. Ivano-Frankivsk exemplifies how an ideal fortified city can evolve while maintaining its historical essence, serving as a model for similar urban landscapes worldwide.

This study underscores the importance of fortified cities as more than relics of the past; they are active components of contemporary urban identity and resilience. By embracing sustainable development and inclusive governance, Ivano-Frankivsk provides a replicable framework for other fortified cities in Ukraine and beyond. The rehabilitation of such cities can serve as a model for fostering peace, unity, and cultural continuity while ensuring their historical legacy remains a living part of modern society. Ultimately, forts can transcend their original military function to become spaces of cultural dialogue, economic opportunity, and environmental sustainability, as enduring symbols of resilience, bridging past and future in the pursuit of a shared heritage and peaceful coexistence.

**Panel 3 – REVITALIZING FORTIFIED SYSTEMS OF PULA AND BRIJUNI ISLANDS**

**Katarina Marić, Katarina Pocedić, Historical and Maritime Museum of Istria**

# THE PULA FORT CENTER – DIGITAL TRANSFORMATION OF THE FORTIFIED HERITAGE

The Historical and Maritime Museum of Istria is situated in the Venetian fortress Castle, which is Pula's oldest fortification of the former Habsburg Monarchy's system of defences.
This article considers the digital transformation of our museums with modules of presenting fortified heritage and historical research. Taking advantage of the technology and digital opportunities, the museum offers the right communication of knowledge, especially in order to make the fortresses more accessible, vivid, and beneficial to a wider audience.
Digitalization played a great role in planning and designing the exhibition about Pula's fortifications, a huge architectural heritage, considering protection of the sites, different possibilities of merging video materials, and offering virtual visits to sites that are often not accessible.
The Museum integrated different, but linked activities to enhanced the enormous potential of parts of the city of Pula's cultural heritage by opening the documentation centre that aims to acquaint visitors with the city of Pula's fortification system that had a significant impact on the narrative of the city, in a historical and contemporary context. The Fort Center Pula intends to increase cultural activities, establish a bridge between public institutions and ordinary people, in an attempt to improve the effectiveness and responsiveness, and to influence the sustainable development of the economy and tourism.
The main purpose of this article is to explain our contributions and efforts in presenting Pula's fortified system of defence. Facing written words and different hybrid forms, we shaped the Fort Center Pula as a new dynamic platform for dialogues, future planning, and educational activities.

**Breda Bizjak, BB arhitekti**

## REVITALISATION OF THE AUSTRO-HUNGARIAN UNDERGROUND SYSTEM IN PULA

The paper presents a case study of the Revitalisation of the Underground System in Pula completed in 2021. The project focuses on two level underground shelters under the Kaštel hill and Historical and Maritime Museum of Istria in the Pula historic city center. It affirmes this military heritage as integral part of the fortified heritage and as a significant agent for its preservation, the improvement of the functioning of the Museum and the enrichment of public space and the cultural offer of the city.

In the “tourist era” of the post-industrial city, culture is a lever for the production of identity, the representation of identity, and even its consumption, especially when it comes to exploiting the past, which is often the starting point in “cultural tourism”. The project starts from the assumption that by critically valorizing and planning the use of cultural heritage, a counterpoint can be set to the increasingly strong processes of globalization and touristification of cultural heritage that are unstoppably eroding local, regional, and even national identity, merging it into a uniform, global one. The project aims to consider the cultural heritage not only as a tourist product providing the economic conditions for physical preservation of structure, but as a benefactor to the local community and urban regeneration. Furthermore, the underground system was given the function of an infrastructural communication network as well as of an alternative museum / exhibition space. The prehistoric network of city streets, distributed in several concentric rings that organically adapt to the topography of the hill, is transversely connected by underground tunnels and supplemented by four different directions acting as their extension, underground streets, pedestrian metro.

The methodology is based on the analysis of existing factors in the Kaštel area and the historic core, their mutual relationships and the identification of potentials and shortcomings. The analysis of existing resources and testing of possible future scenarios included mapping existing values, improving existing potentials and identifying development constraints and needs. The interactive relationship between the underground and above-ground communication systems in the project is recognized as an important link in the refinement and development of public space. Three-dimensional movement through the hill and connection to the above-ground network of roads creates a dialogue of opposites that enables the emergence of points of potential precisely at the transitions from the surface to the underground. The permeability of the surface conditions the new topography, which offers the third dimension of the city an additional role, connecting the city above and below enabling the public space to expand below the hill. Once forgotten and neglected system of underground shelters became frequently visited destination as an exceptional space by itself, as a refuge isolated from the intensity of the city, of the heat,rain or summer crowds, as a communication facilitator to access the fortress, as a shortcut to another part of the city as well as an alternative exhibition space. The establishment of vertical communication between the tunnel and the fortress facilitated access for visitors with mobility difficulties, the older generation, and children of kindergarten and school age. The museum recorded a significant increase in attendance in the first four months of using the elevator. The activation of the underground shelters as an extension of the existing above-ground street network affects the redefinition of public space in terms of creating new possibilities for movement through the city and its new perception.

**Emil Jurcan, University of Rijeka**

## THE RESTORATION PROJECT OF THE GIACONE COASTAL BATTERY ON BRIJUNI ISLANDS

The restoration project of the Giacone coastal battery on Brijuni Islands essentially deals with designing the perception of the actual space, or designing the reading of existing ambiences, rather than designing a new material layer of the battery. The theoretical background for the proposed projective perception of space is summarized in Georg Simmel's essay *The Ruin* (1958). Simmel's thought begins with the assumption that architecture is the only art in which the work manifests as a result of a great struggle between the will of the spirit and the needs of nature. For him, the architectural work itself represents the victory of the human spirit over nature. With ruins, however, a reversal takes place: the forces of nature strike back and take over the work of the human spirit. Thus, ruins are experienced as a cosmic tragedy, and decay appears as nature's revenge for the violence that the spirit has committed against it. Architecture, through its decay, opens up new meanings, no longer from the purposefulness of the human spirit but from the depth in which human purposefulness and unconscious nature grow from the same root. The sensory fascination with ruins is based on a perception in which human work appears as a product of nature. Such perception of reality reverses the dominant order in which the human spirit, or in other words reason, is imposed on nature. In ruins, nature is placed above the spirit.

Guided by this theoretical assumption, the project views the ruins of the former Giacone battery primarily through the dialectical relationship between nature and the presence of human traces. Four ambiences have been identified that move along the paths of such dialectics. The first is a dense forest of holm oak along the western edge of the battery where nature absolutely dominates, and human presence is reduced to a few barely noticeable traces. The second ambience is a cultivated forest with paths along the eastern side of the battery where human traces of nature cultivation are visible, as well as natural traces of architectural collapse. The third ambience represents the battery trench itself where nature and human spirit most distinctly clash and in that conflict create an enchanting landscape for which it is debatable to claim that it is the fruit of human hands or that it is the result of natural succession. The last, fourth ambience consists of tunnels and interior spaces of the battery in which, despite the action of nature, the human trace has retained its dominance. Key spaces in such a reading of space are the portals, or connections that link the described four ambiences into a complete picture of the natural-human landscape of the former military structure.

In this approach to designing the perception of space, the basic way of experiencing it is through the senses themselves, from visual and acoustic to tactile and olfactory, and when necessary, even taste. Perception is primarily sensual, and only secondarily rational in terms of understanding the historical facts that are presented to visitors. Therefore, the conservation method is primarily focused on emphasizing the age value of the ruin, which according to Alois Riegl (1982) is experienced sensually. Only certain segments of the battery are designated for highlighting its historical value, which should analogously be interpreted rationally. The same design principle is applied to natural elements in the space, distinguishing between the primary sensual approach that valorizes plant succession and the secondary rational approach that historicizes parts of the forest where historical traces of cultivation are visible. The proposed design method can be called tropistic, as a type of action that is carried out without cognitive thinking, depending on the sensual stimuli that are active.

**Pia Boljunčić, Studio 314A j.d.o.o.**

## REVITALIZATION OF TOWER FORT FORT MONTE GROSSO AND THE RESTORATION OF THE FORTIFIED PATH OF PULA

This study explores the revitalization of Fort Monte Grosso and the restoration of the fortified path of Pula. The analysis of historical and contemporary urban fabrics reveals the fragmentation of the defensive system due to urban expansion. The research proposes a multiscale intervention to reconnect these fortifications through an educational and recreational route, integrating a steel structure within the fort's existing framework without disrupting its historical integrity. The study employs historical analysis, architectural surveys, and digital modeling to reconstruct the fort's original appearance and develop an intervention strategy that enhances public engagement while preserving cultural heritage. The research is grounded in the study of Austro-Hungarian military architecture and its adaptation to evolving warfare technologies. The fortification system of Pula, constructed in the 19th and early 20th centuries, represents a strategic defense network that shaped the city's development. The study considers urban metabolism theory, analyzing the impact of modern urbanization on historical structures. The conceptual framework integrates heritage conservation principles with contemporary design strategies to propose a non-invasive intervention that harmonizes with the historical fabric while offering new cultural and touristic value. The research adopts a mixed-methods approach, combining historical documentation, field surveys, and digital modeling. Archival research provides insights into the original construction and transformations of Fort Monte Grosso. Traditional and digital surveying techniques, including photogrammetry and 3D modeling, facilitate reconstruction of the fort's structure. Comparative analysis of similar fortifications informs the restoration strategy. The proposed intervention is developed using AutoCAD and SketchUp, ensuring a design that aligns with the fortress's historical and spatial logic.

The study reveals that Pula's fortifications, once a coherent defensive network, have been fragmented due to post-war urban expansion and neglect. The analysis highlights the historical layering of the city's fabric, where remnants of fortifications are often concealed within modern developments. Fort Monte Grosso, located in a former military zone, retains its original form but has suffered structural damage from World War II bombings. The study identifies the potential of a revitalized military path to reconnect these fortifications, enhancing their accessibility and public appreciation. The proposed intervention offers a model for heritage conservation that balances historical preservation with contemporary functionality. The integration of a steel pathway within Fort Monte Grosso allows visitors to experience the site without compromising its authenticity. The study also contributes to urban planning discourse by demonstrating how historical military landscapes can be repurposed for cultural and educational tourismThe revitalization of Fort Monte Grosso and the reestablishment of the fortified path address the challenges of preserving historical military architecture amid urban transformation. By reconnecting fragmented fortifications through a non-invasive intervention, the project enhances public engagement and cultural heritage appreciation. The research underscores the importance of integrating historical analysis with contemporary design strategies, ensuring that architectural heritage remains an active component of urban identity. The proposed model provides a replicable framework for similar conservation efforts, promoting a sustainable approach to historical site revitalization.

## Panel 4 – FORTIFIED LANDSCAPES - CONCEPTUALIZATION AND INTERPRETATION

**Jana Rodić, LiveViewStudio, Belgrade**

### EXTENDED REALITY (XR) FOR THE DIGITAL VALORIZATION OF FORTIFIED HERITAGE: CHALLENGES, SOLUTIONS, AND AUDIENCE ENGAGEMENT

This paper investigates the use of extended reality (XR) technologies, augmented reality (AR), virtual reality (VR), and artificial intelligence (AI) to enhance the digital valorization of fortified and former military heritage. It explores how XR can transform the interpretation of these complex historical sites, specifically within the Adriatic region, through participatory, immersive spatial narratives. By merging physical and virtual elements, XR offers new opportunities to engage diverse audiences and interpret the multifaceted histories of these cultural landmarks. The concept of XR in heritage contexts is rooted in the theory that space is not static but shaped by social, cultural, and technological forces. As such, XR technologies enable dynamic, nonlinear experiences that challenge traditional notions of museum spaces. By integrating algorithms, data sculptures, and interactive elements, XR transforms the perception of heritage sites, allowing visitors to co-create meaning through their interactions with the digital environment. This framework emphasizes participatory governance, which encourages local communities and stakeholders to collaborate in the creation and interpretation of digital heritage. The study employs a qualitative approach, drawing on case studies from previous projects, such as the Hologrаd platform and UNESCO exhibitions, which have utilized XR technologies for cultural heritage engagement. Data was collected through interviews with project stakeholders, visitor surveys, and evaluations of user engagement. These methods allowed for an assessment of both the technical aspects and the impact of XR technologies on visitor experiences. Challenges such as content authenticity, technical limitations, and stakeholder collaboration were analyzed to identify effective solutions.

The findings suggest that XR can significantly enhance the interpretive value of fortified heritage sites by creating interactive, immersive experiences that engage visitors in new and meaningful ways. Digital overlays and participatory elements increase visitor involvement, allowing them to explore different historical perspectives and narratives. However, challenges such as the technical complexity of XR applications, issues of content authenticity, and the need for effective collaboration among stakeholders were identified. This paper contributes to the understanding of how XR can support sustainable heritage management and promote cultural peace. By fostering community participation in the creation of digital interpretations, XR technologies align with the principles of inclusive museology and participatory governance. Additionally, XR offers solutions to challenges such as seasonal dependency and accessibility, making heritage sites more accessible to a broader range of visitors year-round. This approach supports the long-term sustainability of heritage sites, contributing to sustainable tourism and urban regeneration. In conclusion, this research demonstrates the transformative potential of XR in the valorization of fortified heritage. The integration of XR technologies not only enhances visitor engagement but also supports sustainable tourism and transnational cooperation. The paper emphasizes the need for continued collaboration between local communities, cultural institutions, and digital technology developers to overcome existing challenges and ensure the sustainability of heritage management practices. By doing so, XR can contribute to cultural peace, intercultural dialogue, and the preservation of European heritage in the context of global challenges.

**Dunja Predić, AP Company, Belgrade**

# FROM CLOSED SYSTEMS TO SENSORIAL TRANSPARENCY: STRUCTURAL MONITORING OF FORTIFIED HERITAGE AS INFRASTRUCTURE OF TRUST AND SPATIAL RESILIENCE

In the context of climate pressures, tourism intensity, and growing institutional mistrust, fortified heritage represents not only a historical asset but also a site of infrastructural vulnerability and symbolic relevance. Structural health monitoring (SHM) has long served to protect heritage from physical degradation, yet remains largely implemented as a closed technical system—its data reserved for engineers and experts. This paper explores the possibility of reframing SHM as a transparent, publicly accessible infrastructure that could support participatory governance, spatial resilience, and shared responsibility.

This work is grounded in critical spatial practice and participatory epistemologies. It builds upon the notion of 'technologies of humility' (Jasanoff, 2003), where expert knowledge is integrated with public interpretation and ethical reflection. Drawing on urban media theory (Mattern, 2017), the research conceptualizes sensors as potential interfaces for civic dialogue rather than mere instruments of control. The emerging concept of 'sensorial transparency' is proposed to describe a new relationship between infrastructure, knowledge, and community. The methodology of this study is exploratory and transdisciplinary, reflecting the emerging nature of the topic and the limited availability of existing research. It combines desk-based research and conceptual design with elements of practice-based analysis, including long-term professional collaboration with sensor technology providers (Geokon, Sireg, Campbell Scientific, Vista Data Vision). Given the experimental character of the work, the methodology remains open and iterative. It involves the identification of relevant case studies (where available), comparative analysis of sensor applications in built heritage, and direct dialogue with producers and practitioners in the field. If conditions allow, the research may include a pilot sensor installation on a local fortification near Pula to test both technical viability and public interface scenarios. This approach acknowledges the absence of a standardized framework and instead proposes a pathfinding process that draws on a variety of tools—technical, spatial, participatory and speculative—in order to articulate the potential of structural monitoring as a cultural, civic and infrastructural practice.

Preliminary insights suggest that most existing monitoring systems are designed for internal expert use, limiting their contribution to public awareness or strategic planning. However, comparative analysis and stakeholder conversations indicate strong potential for using sensor-based data as a platform for inclusive spatial governance. The proposal of a "public dashboard" for structural and environmental health data emerges as a key innovation. This paper contributes a novel conceptual and methodological approach to fortified heritage management. By reframing structural monitoring as an accessible and civic-oriented system, it aligns heritage preservation with values of transparency, resilience, and co-responsibility. The implications extend beyond heritage, suggesting applications in climate adaptation, risk communication, and participatory urban policy. Fortified structures are often perceived as closed and monumental. Yet, by embedding them with open, living systems of observation and care, they can become active spaces of trust, knowledge, and belonging. In this light, structural monitoring is not only a technical measure, but a potential cultural practice of peace.

**Marijana Fabijanić, Vana Đapić, University of Zadar, Department of Tourism and Communication Studies**

# FORTIFIED HERITAGE TERMINOLOGY AND LINGUISTIC LANDSCAPE: THE CASE OF THE TRANSNATIONAL UNESCO SITE "VENETIAN WORKS OF DEFENCE BETWEEN THE 16 TH AND 17 TH CENTURIES. STATO DA TERRA – WESTERN STATO DA MAR"

The aim of this research is to investigate the presence of fortified architecture terminology in public spaces, with the focus on terms of defensive architecture and fortification systems of the transnational UNESCO site "Venetian Works of Defence between the 16 th and 17 th centuries. Stato da Terra – Western Stato da Mar". The presence of fortified architecture terminology is searched for primarily in the linguistic landscape of cities of this UNESCO World Heritage site (Bergamo, Peschiera del Garda, Palmanova in Italy, Zadar and Šibenik in Croatia, Kotor in Montenegro). Examples from some other cities in the Adriatic region are also considered. Since the unit of analysis in linguistic landscape studies is commonly perceived as "any piece of text within a spatially definable frame" (Backhaus 2007), the research comprises any inscription with analysed terms perceived in the cultural landscape.

However, particular attention is paid to names of streets and squares, shops, bars, restaurants and hotels. Data collection is based on observation of specific geographic locations in physical and digital environment (Google Street view, official web sites). Description of linguistic signs comprises language related features (etymology and definition of the term as well as its communication function in the perceived context) and non-linguistic features (such as location of the sign). The expected contribution of the research is shedding light on the relation between fortified heritage and its environment.

**Julia Gesell, Inclusion representative of Fortress Königstein**

# MUSEUMS AND CULTURAL INSTITUTIONS AS INCLUSIVE SPACES: THE EXAMPLE OF FORTRESS KÖNIGSTEIN

Museums and cultural institutions bear a particular responsibility to make history and knowledge accessible to all people—regardless of individual limitations or specific needs. Inclusion in the museum context goes far beyond simply adapting physical infrastructure. It is about designing a holistic, barrier-free experience that allows all visitors to participate on equal terms.

At Fortress Königstein, this responsibility is taken seriously. The institution is committed to developing innovative strategies to make its historical spaces, exhibitions, and educational programs inclusive and accessible. The focus is not just on compliance with legal standards but on proactively rethinking the visitor experience through the lens of diversity and inclusion.

This includes a variety of measures: tactile models for people with visual impairments, multilingual and sign language-based digital guides, step-free routes and accessible rest areas, as well as guided tours specifically designed for visitors with hearing impairments, dementia, or learning difficulties. Digital tools such as augmented reality and audio descriptions also play an increasing role in providing low-barrier access to historical content.

The fortress collaborates with experts and advocacy groups—such as associations for the hearing-impaired or institutions for accessible design—to ensure that measures are developed with, not just for, people with disabilities. In doing so, Fortress Königstein moves toward its goal of being not just a historic monument, but a vibrant and inclusive cultural space.

This article highlights the practical steps, strategic partnerships, and measurable successes on the fortress's path toward greater inclusion in cultural education. It shows how a centuries-old site can become a model for future-oriented accessibility, offering everyone the chance to experience history in their own way.

**Panel 5 – ADRIATIC CROSS-BORDER FORTIFIED HERITAGE - HISTORICAL AND CONTEMPORARY PERSPECTIVES**

**Karla Papeš, Andrija Nakić, Public Institution Fortress of Culture Šibenik**

# FORTIFYING THE EASTERN ADRIATIC UNDER FRENCH RULE (1806–1813)

The seven-year span of French governance in the eastern Adriatic at the dawn of the 19th century marks a crucial chapter in its military and infrastructural development. Extending from 1806 to 1813, this era can be delineated into two distinct phases: the initial administration, limited to Dalmatia until 1809, and the expanded territorial governance following the establishment of the Illyrian Provinces, which broadened French dominion over a larger segment of the eastern Adriatic.

This paper explores the strategic objectives and tangible outcomes of French fortification efforts, both on the mainland and the islands. Recognising the regions' strategic significance, the French authorities made substantial investments in military infrastructure to secure the newly acquired frontier of the Napoleonic Empire. This investment included the construction of new roads, ports, and, most importantly, fortifications designed to bolster defences against external threats and internal unrest.

The study is based on an analysis of various sources and provides an overview of fortification projects that were completed, those that remained in the planning stage, and others that were partially or entirely dismantled during the French administration. By mapping these military constructions within theirgeographical and historical context, the paper seeks to offer a visual and analytical synthesis of the spatial strategies employed by the French in Dalmatia.

Special attention is devoted to the dual nature of French military policy in the region: defensive, in terms of safeguarding the coast and vital inland routes, and symbolic, asserting the imperial presence through monumental and strategically situated structures.

Though brief, the French presence left a durable legacy. The remnants of their military infrastructure reflect both the practical and symbolic dimensions of empire-building, offering insight into Napoleonic ambitions and the layered historical identity of the Dalmatian coast. The ambitions and untapped potential of the eastern Adriatic, not fully realised by the Venetians, were later taken up by the Austrians in the 19$^{th}$ century.

Through strategic fortification efforts – such as extending island defences, exploiting key ports like Šibenik and Pula, and extending influence towards the western Ottoman Empire – the eastern Adriatic was transformed from a peripheral zone into a strategic gateway for territorial expansion.

**Gorana Barišić Bačelić, Josip Pavić, Public Institution Fortress of Culture Šibenik**

# EMPHASIZING THE DISSONANCE: THE REOPENING AND REUSE OF A WORLD WAR II TUNNEL BENEATH THE ST. JOHN'S FORTRESS IN ŠIBENIK, CROATIA

St. John's Fortress in Šibenik was constructed in somewhat panicked circumstances during the summer of 1646, just before the attack of the Ottoman army. Spearheading the new defensive system of the city, it withstood two Ottoman sieges and was then expanded into its final form over the next decade. Built on a 120-meter-high hill above the Old town, and extending over almost 20,000 square kilometers, the fortress was used by successive armies until the second half of the 20th century, after which much of it was left to vegetation and decay. A sports ground was briefly functioning below the main wall, and a massive telecommunication transmitter was later installed on the highest point of the fortress. In the early 2010s – following revitalization projects of other Šibenik fortifications – there was a renewed interest in the Šibenik's largest fortress. The City of Šibenik and its partners finally implemented a EU-funded revitalization project from 2016 to 2022. Through this project, St. John's Fortress got some new features, but every older structure (whether previously found or newly discovered within the archaeological supervision of the construction works) was documented, and most of them were retained and/or restored. One of these structures is a WW2 *tobruk* bunker buried within the southwest bastion, in which a mini-exhibition was set up in 2024. A slightly larger structure is a 70-meter-long tunnel dug into the living rock under the fortress in a north-south direction, ending with a concrete rangefinder overlooking Šibenik and its archipelago. The tunnel was probably built in 1944, during the German occupation of the city, when Šibenik was threatened by Allied bombing.

The bunker and tunnel on St. John's Fortress are the first steps in a significantly broader theme – the revaluation and future use of 19th and especially 20th century fortification heritage. Since Šibenik was a crucial strategic point during this period, bunkers are located on the tops of almost all the hills in the immediate hinterland. In recent years, this plain concrete defensive architecture has entered the category of dissonant heritage, as it is a reminder of the bloodiest period of humanity. As this heritage was built in (by today's standards) attractive locations in non-urbanized areas around the city, it is already (or will be in the future) under pressure from potential commercial contents, changing of owners or changes in spatial planning. There are, however, many European examples in which recent fortification heritage has served as a scene for artistic projects, urban interventions or as a space for reconciliation (of peoples, cultures or landscapes). The renovation of the tunnel on St. John's Fortress is taking this very path. The conceptual architectural project was developed in 2024, and the EU funds were obtained in the same year. Instead of the well-known, expositional story of Šibenik during the wars, the future interpretation of the tunnel should be focused on an artistic and sensory exhibition based on lights and sounds.

**Ilija Lalošević, University of Montenegro, Faculty of Architecture**

# FORTIFICATION ARCHITECTURE OF BOKA KOTORSKA BAY

Author of the paper studied and followed investigation and conservation works of military architecture of Boka Kotorska Bay (Bocche di Cattaro) through more than 30 years long practice. Many documents from local and foreign archives and libraries, such as old manuscripts and rare publications, engraving, vedutas, military architecture plans, geodetic maps and photo documentation was studied. Through collecting, studying and systematization of such authentic sources as well as through its analysis and comparison with available relevant literature, and through comparison with preserved previously studied building structures, a solid documentation base was made. Upon this base development of the fortification architecture of this area was studied, followed with conservation projects and restoration works.

Research confirmed extraordinary historic importance of Boka Kotorska Bay fortifications. The town of Kotor and the bay had been the key strategic area through centuries. It was particularly important to Venetian Republic and Austro-Hungarian Empire, since being very important check point in trade routes of the Mediterranean basin for Venetian Republic, as well as important border fortress and military port for Austian Empire. Its architecture testifies of its historic strategic role, representing genuine testimony of values of cultural heritage, showing its quality and important place in the context of wider defensive systems.

Paper establishes and present genesis and typology of city fortifications and defensive points close to urban settlements or on strategically important locations inside the bay, as well as recognized influence of the architecture of other regions and similar examples from surrounding on the defensive architecture of Boka Kotorska bay.

Research of the Boka Kotorska bay fortifications, beside direct scientific interest, has an evident practical value. After the fall of the Venetian Republic and especially after fall of Austrian monarchy in 1918, these places, especially those far from sea and frequent roads, lost their strategic importance, and became abandoned and exposed to decay and devastation, to atmospheric and seismic influences, vegetation and neglect. Scientific research of this category is a base for the future process of its successful revitalization. One of direct consequence of studying and conservation Bay of Kotor fortification system is inclusion of Kotor Fortress to the World Heritage List as serial nomination of venetian fortresses, together with Šibenik and Zadar in Croatia and Bergamo, Palmanova and Peschiera del Garda in Italy, in 2017.

**Saša Slijepčević, Gacko Municipality, Saša Nikolić, Gat Gacko - Citizens' Association, Bosnia and Herzegovina**

## THE FORTIFIED HERITAGE OF "KORDONPOSTEN GAT" AS ONE OF THE PILLARS OF TOURISM DEVELOPMENT IN GACKO

The Gat Hill with the remains of an Austro-hungarian fortress represents a key tourist potential for the Gacko municipality in B&H. The hill is located in a protected nature area covering 60 ha and is managed by a local citizens' association that, in cooperation with the municipal administration, has begun activities to valorise the tourist potential. A group of enthusiasts gathered around the Gat Association, appreciating the historical, cultural and natural heritage of the Gat Hill and its surroundings, have actively engaged in preventing further destruction of this historical site and its promotion and valorization, with the aim of forming multiple tourist offers. With the support of the municipal authorities, activities were undertaken to form a natural and cultural-historical memorial park. The Association has been actively engaged in finding all available literature related to the Gat, including archival material from the time of the Austro-Hungarian Empire. Work has begun on research and restoration of part of the fortification, in order to maintain the military spirit and enable safe access for tourists.

The current state of the fortification was reviewed. The number of tourists in transit and the possibility of bringing them to the site were analyzed. Activities have begun to research available information and archival materials, while simultaneously promoting and increasing the visibility of the association's activities. Experts in archaeology and restoration of old buildings were consulted. The initial goal was the arrangement and restoration of the main building at the top and adaptation of the purpose. For this, original sketches from the Austro-Hungarian archives were used. The information obtained will be used to implement the project and create a narrative that related to this fortification. During the excavation and restoration, certain artefacts were found that will be part of the exhibition in a specially designed room within the fortress. Aftermath of the activities undertaken: the wider area of the hill with the remnant of the fort declared a protected area which includes numerous natural and historical sites; a hill race has been held for the past three years become traditional, the number of visitors the site increased, the local population invests in tourism capacities. Expert assessments show that the protected area of the Gat hill with its surroundings and numerous natural, cultural, historical contents from prehistory, Roman times, the Middle Ages to the 20th century, represents a locality that can be the backbone of the development of tourism in the municipality of Gacko.

**Panel 6 – SUSTAINABLE FORTIFIED HERITAGE ECOSYSTEMS – ITALIAN EXPERIENCES**

**Nicola Camatti, Università Ca' Foscari di Venezia; Federico Camerin, Ramón y Cajal, Universidad de Valladolid; Francesco Gastaldi, Università Iuav di Venezia**

## INVESTIGATING THE REUSE OF ADRIATIC FORTIFIED HERITAGE THROUGH REAL AND DIGITAL BUSINESS ECOSYSTEMS. THE CASES OF ITALY AND CROATIA

This study investigates the business ecosystem potential of fortified cultural heritage sites in the Adriatic region under the lens of real and digital business ecosystems. The research aims to identify the direct and indirect economic benefits generated by these assets and their impact on entrepreneurial and non-profit activities. This study is based on the concept of 'business ecosystems,' which defines an economic community as a network of organizations and individuals that interact to produce goods and services, creating value for customers—who are themselves integral participants in the system. Within this ecosystem, members utilize shared resources and platforms, including cultural assets, and engage in collaborative strategies to achieve a common purpose. In this context, certain key drivers motivate companies to build business ecosystems around cultural assets:

- Tourist-oriented reuse, which seeks to leverage the historical and natural appeal of these sites for tourism (e.g., Valletta, Malta);
- Business-oriented reuse, according to which fortresses are transformed into hubs for innovative products and services, taking advantage of their unique cultural, logistical, and environmental characteristics (e.g., business district developed within the Ingolstadt fortress in Germany and the luxury resort established in Fort Beemster in the Netherlands); and
- Preservation-oriented reuse, prioritizing the restoration and conservation of these sites without assigning them specific functional or economic uses (e.g., the ABRI shelter in France and the Citadel of Diest in Belgium).

This inquiry scrutinizes various fortresses located in the Adriatic coastline in Italy and Croatia to uncover their drivers of economic interconnectivity according to the aforementioned three main approaches to reuse. The methodology relies on using official statistical data and cross-border surveys targeting fortress managers and companies engaged in heritage-related activities to examine their role in fostering local economic development. The surveys aim to:

- Identify businesses that currently operate within or around these fortresses; assess the role played by specific types of companies in the business ecosystem, particularly as keystone and niche players; explore potential future participants in the ecosystem, including service and product providers linked to these heritage sites.

Beyond the tangible economic activities, the study delves into the digital dimension of this ecosystem, investigating existing and prospective digital services that could support and enhance business operations related to fortresses. A key focus is the integration of fortified heritage sites into the digital economy, particularly through the emerging Metaverse. The study found how businesses associated with fortresses could leverage this digital space to enhance their visibility, improve customer engagement, and develop innovative economic opportunities. The case study analysis provides insights into how fortresses can serve as catalysts for new economic activities and digital transformation. This research results in a comprehensive mapping of the key players, economic potentials, and socio-economic effects associated with real and virtual business ecosystems linked to fortresses.

**Fiorenzo Meneghelli, Study Center Forte Marghera, Venice**

## THE RECOVERY OF FORTIFIED HERITAGE IN THE PROCESS OF ENVIRONMENTAL AND URBAN REDEVELOPMENT: FORTE TESORO AND FORTE AURELIA

This paper presents the recovery and enhancement of cultural heritage of military origin, integrating it into the processes of territorial and urban regeneration. The focus is on Forte Monte Tesoro, located in the Monti Lessini, and Forte Aurelia Antica, situated in the suburban area of Rome. Forte Monte Tesoro, built in 1911, was part of the Kingdom of Italy's defensive system against the Austro-Hungarian Empire. During World War I, it lost its defensive function as the front line moved beyond the Monti Lessini. The restoration project has received significant recognition, including an award at the 2014 ICOMOS conference "The Landscape as a Cultural Habitat" and the 2021 award for Best Restoration from the Order of Architects of Verona, highlighting the initiative "Forte Monte Tesoro: from Military Outpost to Landscape Stronghold." The valorization project revolves around three main themes: the restoration of the powder magazine and barracks, the promotion of hospitality and recreational activities, and the conservation of biodiversity in the Lessinia forests. The fortress, located at the mountain's peak and previously enclosed by barbed wire, served as a NATO military base until the 1990s. It remained an abandoned and inaccessible site for a long time. Following its transfer to the municipality of Sant'Anna in 2013, a redevelopment project was launched, actively involving the local community in the economic and social revitalization of the mountainous area.

The restoration of Forte Aurelia, located within the urban fabric of Rome, represents a significant step in the broader rehabilitation of the city's Campo Trincerato fortifications. Built between 1877 and 1881 with a polygonal layout inspired by Prussian models, Forte Aurelia serves as a link between Rome's urban periphery and the Regional Park of Casali, emphasizing its dual role in both military history and contemporary urban planning. The recovery project for Forte Tesoro has transformed an abandoned site into a cultural meeting space, fostering cultural and recreational activities. The intervention emphasized the site's historical elements while deepening the connection between the fortress and its surrounding natural environment. While preserving its historical character, the fortress has been repurposed as a flexible venue for various events, including theater performances, concerts, and gastronomic gatherings, promoting conviviality and local identity and allowing the local community to reclaim the site as part of their heritage. The project aims to maintain the fortress as a living historical landmark within a military complex while allowing for public engagement. By experimenting with a dual-purpose approach, the intervention ensures that the site retains its institutional function while also becoming an accessible space for the community. The transformation of Forte Aurelia includes the creation of a multicultural hub, which integrates a museum, a temporary exhibition space, a multifunctional hall, and an extensive green area. This fusion of history and modernity positions Forte Aurelia as a significant cultural center, serving both the local community and the broader city.

**Daniele Sferra, Ca'Foscari University of Venice, Fiorenzo Meneghelli, Study Center Forte Marghera, Venice**

# FORTE MARGHERA, A TANGIBLE EXAMPLE OF SUSTAINABLE FORTIFIED HERITAGE BUSINESS ECOSYSTEM

Fortified sites are a significant example of tangible heritage business ecosystem of cultural tourism destination. Forte Marghera, with its sustainable business eco-system based on 4 functions: monument, public park, culture and leisure, is a tangible example of good governance between public and private stakeholders.

Furthermore, adopting a community driven approach to foster a multilevel environment and governance for creating enabling conditions for a sustainable local and regional business eco-system of fortified sites, it represents a unique excellence in an extraordinary context of being a green gate between the lagoon of Venice and the mainland. The fortified site of Forte Marghera can be seen as multifunctional area and a powerful economic driver and engine for local and regional development in all its relevant components: urban planning, environmental context, socio-economic development of local communities and an extraordinary opportunity of implementing local circular economies. A concise overview of the state of art of the reality of Forte Marghera with the relevant investments of renovation undergone in the last years and still ongoing.

**Gerardo Semprebon, Department of Architecture and Urban Studies, Politecnico di Milano**

# AFTER NATO IN LESSINIA (VERONA): DESIGN QUESTIONS FOR THE SUSTAINABLE DEVELOPMENT OF DECOMMISSIONED TELECOMMUNICATION SITES

The Lessinia area, the plateau above Verona, has historically been contested by kingdoms, empires, states, and international organizations due to its strategic position straddling the mountains and the Po Valley, controlling one of the most important communication routes through the Alps, the Valdadige. The geopolitical arrangements established at the end of the Second World War made this region one of the most significant Cold War theaters in the European chessboard, not so much because of its border position—since Austria and Yugoslavia had declared themselves neutral—but for a series of other reasons.

First and foremost, nuclear deterrence systems, reshaped after the Cuban Missile Crisis according to NATO's "flexible response" strategy and the principle of "graduality", included barracks, military airports, and guided interceptor bases relying on Nike and Hawk systems. Secondly, Lessinia was a transit area for one of NATO's main telecommunications systems, the Line of Sight 114F (LoS) system, alongside the ACE High troposcatter system. Both had their nerve centers at the NATO peace-time headquarters in Verona, at Palazzo Carli, and in protected sites of Back Yard (Site A, Grezzana) and West Star (Site B, Affi, the largest nuclear bunker in Europe). As these abandoned sites gradually fall under the ownership of the municipalities where they are located, following the effects of state property federalism, a dense network of public areas is emerging, available for new uses as opportunities for local development.

This paper aims to initiate a reflection on the significance these areas might acquire once they become accessible again to local communities, opening a variety of architectural and landscape transformation scenarios. In particular, the study focuses on Site T (transmitter, Sant'Anna d'Alfaedo), Site R (receiver, Erbezzo, Contrada Vaccamozzi), and Site W (radio relay, Velo Veronese), all part of the 114F system directly connected to Site A (Back Yard, Grezzana) and Site B (West Star, Affi) of the Allied Land Forces Southern Europe (LANDSOUTH), serving NATO's Verona headquarters. In the long period between the acquisition of these areas and political planning, the Prefecture has intervened, identifying the barracks near two of the sites (T and R) as extraordinary reception centers (CAS) for asylum seekers. The commendable attempt to repurpose unused spaces has unfortunately clashed with social dynamics, further complicating the already difficult recovery of former military sites. While significant initiatives are currently underway to transform the protected headquarters of Back Yard and West Star into museums, the future of Cold War military sites in Lessinia remains uncertain. This paper introduces the architectural and landscape characteristics of these unique sites, which are partially underground and still inaccessible to the public, to discuss potential sustainable development scenarios. The findings suggest that only a project capable of considering a multi-scalar vision, based on a new idea of a socio-cultural network, can lead to meaningful outcomes for the future management of decommissioned military heritage.

**Panel 7 – EUROPEAN BEST PRACTICE IN FORTIFIED HERITAGE MANAGEMENT**

**Tuija Lind, Governing Body of Suomenlinna, Helsinki**

## A CRITICAL ANALYSIS OF A LONG-TERM REUSE PROJECT OF FORTIFIED HERITAGE SUOMENLINNA (HELSINKI, FINLAND)

The 18th fortress and naval base of Suomenlinna-Sveaborg was built to protect Sweden against the Russian fleet between Stockholm and the newly founded city of St. Petersburg. Sweden lost territories including Finland in the Great Northern War – Suomenlinna becoming a Russian garrison for a century (1809–1917). After the WWI and the independence of Finland, the fortress gained the status of a national monument. In 1973, when Finnish Army relocated its costal regiment away from Suomenlinna, the 80-ha site of seven fortified islands was handed over to one owner: the Ministry of Education (and Culture) and the site started to be developed according to a master plan.

The responsibility of the development of the fortified site was given to a public, apolitical body named Governing Body of Suomenlinna (GBS). During the first 35 years of its existence some 70 investment projects were accomplished, but the need for maintenance and renovation of buildings and fortified landscape was less anticipated.

By dividing investment projects by category of reuse, the aim is to create a grid of analyse to better understand the impact of different kind of usage to heritage as well as analyse the sectors where the lack of maintenance is causing damage to the site and for the intrinsic values of Suomenlinna fortified heritage.

Since GBS is a group of heritage professionals with no political agenda, the reuse of the site is planned in accordance with architectural, historic, cultural and social values permitting the site to gain a World Heritage label in 1991. The noble principle of preserving as much authentic structures and materials as possible, has also had some negative impacts. Today the increasing humidity and dampness also affecting the indoor air of old buildings causes mould and wakes up microbes that can be toxic for sensible lungs.

It is easier to get investment money bringing income, than justify the need for running costs for maintenance of the existing situation of fortified heritage. It is worth underlining that one of the many keys to slow down the future climate change would be the timed repair of heritage and its maintenance.

**John Ebejer, University of Malta**

## CONSERVATION ISSUES OF A FORTIFIED HISTORIC TOWN: THE CASE STUDY OF VALLETTA

Urban conservation is closely linked to the overall context within which it takes place. The paper explores the role of individual and social perceptions of heritage on the planning and design processes in historic areas. Approaches to historic area conservation should not be limited to the physical fabric of the buildings but should also consider enhancing liveability. The paper uses Valletta as a case study to debate these issues.

Valletta is a fortified historic town. The resident community has strong social and cultural ties with the city. The town is subject to significant pressures because of tourism and leisure activity. The paper considers the impacts of commercial activities on Valletta's urban spaces and hence on its liveability. It argues for a more robust planning and management framework to safeguard the very characteristics that makes Valletta attractive for tourists.

**Tomáš Jirouch, FORTE CULTURA**

# FORTIFIED HERITAGE POLICY IN THE CZECH REPUBLIC: THE CASES OF TEREZÍN AND JOSEFOV

This paper examines the cases of Terezín and Josefov, two well-preserved former fortified cities in the Czech Republic, analyzing how their issues were reframed and elevated to the national policy agenda leading to the creation of two specialized programs for fortress preservation financed from the national budget. Adopting a public policy analysis framework, the research integrates process tracing, autoethnography, and documents collection to uncover the empirical dynamics behind policy formation.

The analysis reveals how continuous shifts in governmental narratives and political contexts in the 21st century have catalyzed or retraced the transformation of the heritage localities into nationally prioritized agendas mobilizing up to €143.58 million for their future redevelopment. By reconstructing key moments in the policy cycle, the study identifies the roles played by political actors, advocacy coalitions, and heritage professionals in redefining the importance of these complex sites.

Moreover, the paper examines the dual impact of Europeanization and restrictive EU funding policies, highlighting how changes in access to structural and investment funds have reshaped local revitalization strategies. This interplay between national and European policy mechanisms provides a deeper understanding of how external influences can reconfigure local heritage management practices. In addition, the structure of the two developed programs for fortress preservation is examined, and their current implementation progress is evaluated based on available data.

The findings underscore that effective agenda-setting for heritage preservation relies on a delicate balance between grassroots initiatives, strategic narrative reframing, and active policy engagement. Ultimately, the cases of Terezín and Josefov serve as a lens through which broader processes of heritage valorization and policy adaptation can be understood, offering valuable lessons for sustainable cultural policy and urban development in Europe.

**Anna Staniewska, Jadwiga Środulska-Wielgus, Krzysztof Wielgus, Cracow University of Technology, Faculty of Architecture, Chair of Landscape Architecture**

# "FINIS CORONAT OPUS" – WHAT INFLUENCES SUCCESSFUL FORTIFIED HERITAGE RESTORATION? EXPERIENCES FROM RECENT CASE STUDIES FROM THE KRAKOW FORTRESS

Kraków, the most visited city in Poland by tourists, and for 1000 years, the city, situated at a critical, geographically and strategically important point, has also fulfilled defence and communication functions. The historical and geopolitical conditions prevented Krakow from becoming a major industrial centre until after World War II, when this role was imposed on the city by the communist regime. In the 19th century, as part of the Austrian Empire, Krakow became a consumer of advanced technical products. The city has become an important transport hub and the largest fortress of the Austrian Monarchy and from 1867 of the dual Austro-Hungarian Monarchy. Constructed in the second half of the 19$^{th}$ century great ring fortress significantly influenced the shaping of the city space and the way of life of its inhabitants. The consequences of this are still clear today, more than hundred years after the fall of the monarchy. Several hundred defensive and non-defensive (garrison) structures of the fortress, connected by a network of fortress roads and in many places by systems of special camouflage trees, are still an underused historical, compositional and tourist wealth of the city and the region.

While there are numerous studies on the history of the particular elements of the Kraków Fortress and multiple policy and planning documents, no evaluative studies of already implemented projects have been conducted. That is why the critical analysis of success factors of fortified heritage restoration in Kraków Fortress is needed. The paper is based on a qualitative review and analysis of the successful case studies of recent fortified heritage restoration in Kraków Fortress. Authors refer not only to the available planning and design documents and archive studies obtained from the desk studies but also to the participatory observation of particular finished and ongoing projects.

An overview of recent successful restoration and adaptive reuse of fortified heritage case studies from Kraków Fortress shows that the final result of the process depends on multiple factors of various natures. They can be grouped according to their prominence and are linked (but not limited to): Object typology and its intrinsic features, which may limit introduction of contemporary functions and the state of the structure preservation;

- The quality of pre-design research (availability of archival materials showing the structure and technical details of the object and its landscape connections; appropriate interpretation of the historical data);
- The choice of the appropriate contemporary function and use that does not annihilate the historic substance and the overall architectural quality of contemporary design;

- Understanding the contemporary urban and social context of the project site;
- Finding the narrative telling the story and history of the object and landscape to its contemporary users;
- Securing funding to carry out the project at its full capacity without compromising on the quality of the chosen solutions and materials;
- Finding and choosing experienced construction work contractors ready to work in heritage buildings and respect historic substance.
- Cooperation of all partners involved and a managing institution aware of the values of fortified heritage.

Collected observations summarise the experiences of the processes taking place over the last years address existing knowledge gap. The findings of this study should contribute to the improvement of the policies and future actions which have an impact on planning, design solutions and decision-making processes referring to fortified heritage not only in Kraków but in other ring fortresses of the former Austro Hungarian Monarchy.

Successful adaptations of individual forts should now result in a combined, systematic treatment of the fortress as yet another aspect of the attractiveness of Krakow and Malopolska. Despite a good state of research and understanding of this resource – a combined treatment of the various types of Krakow's engineering heritage - monuments of fortifications, railways, water and road construction, industry, power industry and aviation is still a challenge. The largest, in terms of extent, complex of engineering monuments, which is the former fortress, should be protected, adapted and promoted not separately, but together with other complexes of industrial heritage. While the stigma of foreign heritage of little artistic and historical value seems to fade when faced with successful adaptation of particular fortifications for functions such as local cultural centres and museums, still a tendency to take over fortress and post-industrial plots for development purposes without taking into account their cultural and heritage meaning remains a serious threat.

Nonetheless, strong pressure from experts, non-governmental organisations and local self-governments provides the basis and hope for the action of a great recovery of Krakow's military-industrial heritage.

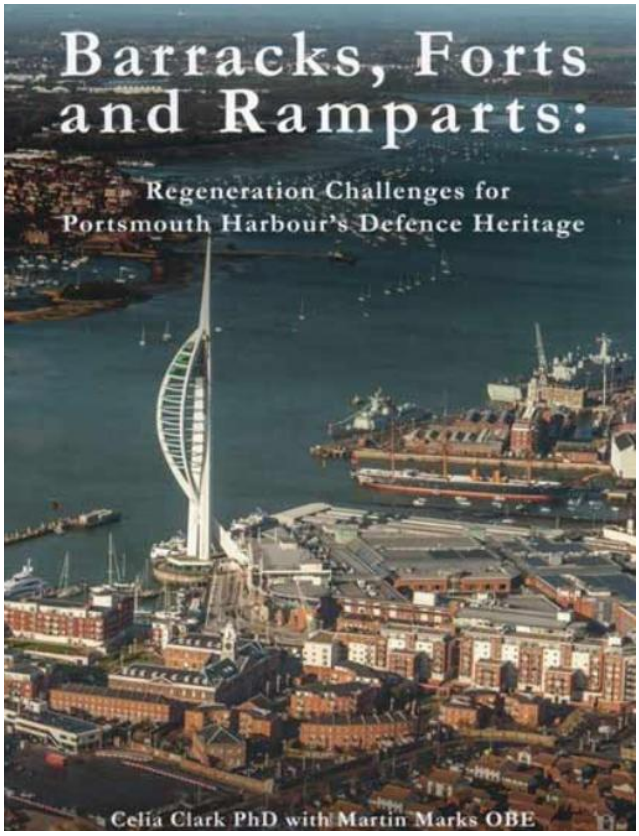
**Celia Clark, Naval Dockyards Society, Portsmouth**

## BARRACKS, FORTS AND RAMPARTS. REGENERATION CHALLENGES FOR PORTSMOUTH HARBOUR'S DEFENCE HERITAGE

Portsmouth Harbour has one of the densest concentrations of specialised defence establishments in England. Its extensive area, narrow entrance from Spithead within the shelter of the Isle of Wight and proximity to our rivals on the high seas made it ideal for development of a dockyard, defended by a ring of protective forts.

For centuries fleets and armies sailed from the country's premier naval port to fight our enemies and to supply and garrison the global British empire. During wars, for every uniformed person in action, thousands of civilians and a substantial portion of the nation's material and financial resources were dedicated to supplying and equipping them. A complex support system developed: gunwharf, victualling and ordnance yards, hospitals, barracks and airfields. Until after WWII many local defence installations were guarded by a substantial army presence.

Many of these widely varied and complex sites are no longer required for the nation's defence. Those defined as 'defence heritage' present a considerable and ongoing reuse challenge - to the communities around the harbour, to developers, successor owners and to conservationists. Creative restoration, adaptation and reuse of our rich historic defence legacy within this one smallarea is, arguably, an exemplar in microcosm of how to repurpose historic defence heritage.



**Jeroen van der Werf, Monumentenbezit, Naaeden, Netherlands**

# PRESERVATION THROUGH DEVELOPMENT, THE CASE OF NAARDEN

An important way to guarantee the preservation of a monumental building, a fort for example, is by giving it a new life, to re-use it. Doors and windows open, humidity and vermin disappear, the building warms up and lives and breathes again.
Besides that, an open monument can be shared with the public. By sharing the monument and its history, people get a long-term connection with it, ensuring preservation by future generations.
This presentation discusses the pros and cons of re-use and looks at the way the Dutch NGO *Monumentenbezit* has approached this challenge in Naarden. Although the examples are Dutch, many of the considerations discussed here, can apply to other European countries as well.

**Panel 8 – VALORISING FORTIFIED ARCHITECTURE AND CULTURE OF PEACE IN EUROPEAN CROSS-BORDER REGIONS**

**Marcin Górski, Warsaw University of Technology, Faculty of Architecture**

# PROBLEMS OF USING FORTIFIED OBJECTS IN THE PROCESS OF DESIGNING NEW FUNCTIONS IN SREBRNA GÓRA FORTRESS

Srebrna Góra Fortress, known as one of the largest mountain fortification structures in Europe, was built between 1765 and 1777 by Frederick the Great to strengthen the borders of the newly acquired Prussian province. Over time, Srebrna Góra Fortress lost its original military function. In 1860, it was abandoned by its original user – the Prussian army. In later years, the fortress suffered numerous damages caused by the use of its walls for testing explosives. However, the fortress's greatest natural enemy remains the harsh highland climate, characterized by high precipitation and extreme temperature fluctuations.

The construction and subsequent maintenance of such a complex and extensive defensive line, stretching over two kilometers, required enormous financial outlays. These were possible only because the fate of the entire state depended on this investment. As with most modern fortresses, the development of siege techniques usually outpaced modernization works. When the fortress finally lost its military significance, it became useless and was abandoned without sentiment. For contemporaries, it ceased to possess all the features of a building because, despite its enormity and beauty, it lost its utility value. It became a picturesque ruin, a storage of building materials, and a testing ground for artillerymen.

The reuse of the fortress at the turn of the 19th and 20th centuries involved restoring its utility features related to tourism and recreation. In a more or less conscious way, one of the basic conditions for effective protection of cultural values was already being implemented in the 19th century by restoring the object's utility value. Although this was not a function related to state security, the expenditures on adaptation works were relatively smaller than in the past. Even then, they did not ensure the possibility of ongoing maintenance of all fortifications, only those elements that were made available to new users.

From the perspective of architectural theory, since Vitruvius's time, one of the key elements that make up the concept of architecture is utilitas (Latin for utility). In military architecture, the pursuit of creating an ideal defensive system makes the need for utility particularly valuable. Defensive utility is a system of perfectly functionally and communicatively connected defensive elements that must first be read and then understood. Professor Janusz Bogdanowski describes the art of fortification as the fusion of utility and beauty in a geometric shape. Durability and utility are particular features of military architecture. Combined with beauty, expressed through harmony with the mountainous landscape, they create an internal logic that combines these features into a whole. Works of defensive art, such as Srebrna Góra Fortress, expressed through their architectural form the process of shaping space to defend against the enemy. The beauty of the fortress integrated into the landscape of Owl Mountains

is a material document of the past, history of architecture, military technique inscribed in the outline of Srebrna Góra bastions. The protection of architectural fortified monuments is not only about protecting values resulting from monument analysis recorded in material substance (durability), not only about protecting composition and relations with landscape interpreted as beauty but also, perhaps above all, about fighting to maintain utility value by assigning new functions.

Currently, after nearly 30 years of efforts carried out since the 1990s, a significant part of Srebrna Góra Fortress is already utilised. It houses museums, exhibition spaces, a hostel, gastronomic functions. Work is underway to adapt other parts of the object to new functions. The article synthesizes nearly 30 years of experience gained through collaboration on successive stages of revitalization efforts aimed at rescuing and making the fortress accessible. This paper focuses on conditions resulting from architectural features of Srebrna Góra Fortress that influence the design process related to adapting the fortress to tourist functions, conducted with participation from author.

**Filippo Cailotto, FORTE CULTURA**

## INTEGRATING CREATIVE TOURISM AND NEW EUROPEAN BAUHAUS PRINCIPLES IN THE MANAGEMENT OF FORTIFIED HERITAGE

Fortified heritage represents one of Europe's most distinctive cultural legacies, yet it faces pressing challenges from climate change, socio-economic transformations, and fragmented governance. This paper argues that fortified sites must pursue a dual mission: to ensure the preservation of their architectural and symbolic value, while developing innovative cultural tourism models that engage communities and foster sustainable development. To address this, the study explores the integration of two complementary frameworks: Creative Tourism and the New European Bauhaus (NEB).

Creative Tourism emphasises active participation, co-creation, and experiential engagement with heritage, allowing visitors and residents to interact with places through learning, creative self-expression, and community-based activities. The NEB, by contrast, provides a strategic European framework based on the values of sustainability, inclusivity, and aesthetics, operationalised through participatory, multi-level, and transdisciplinary approaches. Together, these frameworks enable fortified sites to move beyond traditional conservation and mass-tourism models, positioning them instead as living laboratories for cultural innovation, social cohesion, and regenerative development.

Drawing on policy analysis, the CREATOUR project in Portugal, the FORTE CULTURA Cultural Route, and examples of NEB-awarded projects, the paper demonstrates how fortresses can be reimagined as inclusive spaces of peace and creativity. It concludes with a proposal for an integrated model of fortified heritage management, based on participatory governance, adaptive reuse, and transnational networking. In doing so, the paper situates fortified heritage at the intersection of European cultural policy and the United Nations Sustainable Development Goals, showing how these monuments of conflict can be transformed into symbols of sustainability, creativity, and shared European identity.

**Tetiana Vietrova, Viktor Vietrov, State Historical and Cultural Reserve "Mezhybizh", Ukraine**

## THE LITHUANIAN PART OF MEDZHYBIZH CASTLE IN THE CONTEXT OF THE EUROPEAN FORTIFICATION HERITAGE OF THE 14TH–15TH CENTURIES

Medzhybizh Castle is one of the most significant fortifications of Ukraine from the 12th to 19th centuries. The Lithuanian period of its construction, which was in the 14th-15th centuries, attracts special attention. The study of the Lithuanian part of the castle allows us to consider the evolution of the defensive architecture of the Grand Duchy of Lithuania and its connections with the European fortification traditions of that time. In addition, the analysis of this period allows us to trace the influence of military technologies and political processes on the formation of the defensive structures of the region.

Medzhybizh Castle, located at the intersection of important trade routes, played a significant role in the military-strategic system of the Grand Duchy of Lithuania. Its fortifications served not only as a defence, but also as an administrative centre for the region. When Podolia became a part of the principality in the 14th century, a large-scale reconstruction of the defence structures began. It corresponded to European trends in fortification and took into account the latest achievements of military engineering. One of the main aspects was the construction of a stone, triangular castle. Over time, the castles defence capabilities were strengthened in response to the growing threat from the Golden Horde and other aggressors. For this, advanced fortification technologies were used, which allowed it to more effectively resist sieges.

Despite further reconstructions of the castle in the 16th-17th centuries, the fortification principles laid down in the Lithuanian period remained the basis for its development. The Lithuanian period played an important role in creating a solid foundation for future fortification improvements. The location and planning of the defensive structures, characteristic of the 14th-15th centuries, were preserved in subsequent periods, serving as the basis for adaptation to new methods of warfare. In the 16th century, changes occurred due to the spread of firearms, and the castle began to transform in accordance with new challenges. However, it was the Lithuanian fortifications that ensured the original security and strategic importance of this fortification.

The Lithuanian stage of the development of Medzhybizh Castle is an important component in the context of European fortification heritage. The analysis of this part of the castle allows not only to understand the history of fortifications in Ukraine more deeply, but also to integrate it into the broader European context of medieval military architecture. Further research of Medzhybizh Castle and its Lithuanian part may provide new information about the methods of fortification construction, fortification technologies and the organization of military defence in the 14th-15th centuries. This also allows us to better understand the role of the Grand Duchy of Lithuania in the formation of the fortification culture of Europe and its relationship with neighbouring states.

**Alena Bagro Alena, New Europe College, Institute for Advanced Study, Bucharest**

# FORTIFIED SITES AS GREEN AREAS: EXAMPLES OF IMPLEMENTATION IN WESTERN UKRAINE AT THE END OF THE 19TH CENTURY, SELECTED EXAMPLES

The presentation aims to analyse urban parks and other green areas that existed before World War I in the immediate neighbourhood of fortification objects in Western Ukraine. Such a historical research provides an opportunity to analyse the prospects that green areas offer to the local community and the possibility of increasing the tourist attractiveness of the object. Ukrainian fortifications cover various historical periods: from the Middle Ages to the end of the 19th century. A characteristic feature of Ukrainian territory is that the majority of fortifications date back to the late 16th and 17th centuries, i.e. the early modern period. They have the typical style of Western European architecture, especially Italian. Classic examples of ideal bastion systems involve constructing a facility on a flat surface in a new location. Most examples in Ukraine are indeed of this type.

However, in Western Ukraine, there are often cases where both bastion fortifications and those built shortly before or at the same time are constructed on the foundations of existing fortifications. At the same time, these late medieval and pre-bastion structures often used natural landforms as additional protection. Examples include high hills, natural ravines, and the confluence of two rivers. Such cases are not rare in the historical regions of Podillia, Volhynia, and Galicia in Western Ukraine. Architectural historians even classify them as a separate group – triangular irregular castle fortifications. I would like to point out that in almost all such examples nowadays, the area surrounding the structures are overgrown with trees, forming irregular forest parks. However, the tree-covered slopes are not used in any way, for the following reasons: legally protected from development as part of the ground adjacent to a historical monument, and as a measure to prevent erosion and landslides. As a result, existing green areas are not used as natural and cultural resources by the local communities living in close proximity, which does not have a positive impact.

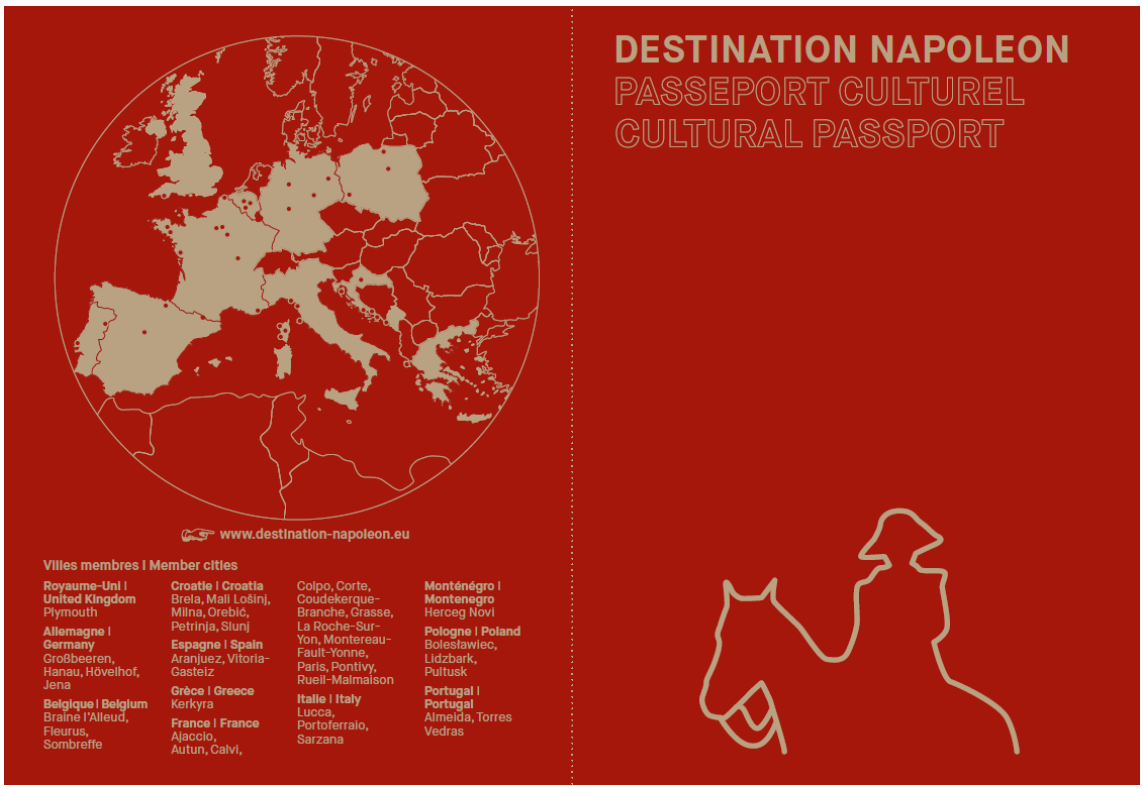
I propose to refer to the forgotten historical practice of using territories near the fortifications of several concrete objects in Ukraine, namely at the turn of the 19th and 20th centuries. According to archival data, inclusive of photographic documents of the period (as well as postcards), we observe that near the castle, in Terebovlia, as an example, at the end of the 19th century, a city garden was established with pavilions, benches, and monuments. This garden was a location for city festivals, gatherings, and commemorative celebrations. During the military conflicts of the 20th century, these park buildings were completely destroyed. However, it is possible to return to the practice of using the surrounding areas near fortifications as urban gardens, making the fortifications themselves much more attractive. The example of a successfully implemented project is the park in Kiev called Vladimirskaya Gorka, located since the mid-19th century on the banks of the Dnieper River. In 2019, a project was implemented to renovate the walking zone with updated pavilions, a historic fountain and a modern playground. Now the park area has become a new centre of attraction for city promenades.

**Panel 9 – CULTURAL ROUTES AND SPECIAL INTEREST TOURISM**

**Eleonora Berti**

## CULTURAL ROUTES OF THE COUNCIL OF EUROPE: TOOLS TO CONNECT FORTIFIED HERITAGE - THE EXPERIENCE OF DESTINATION NAPOLEON

The presentation elaborates on the Cultural Routes of the Council of Europe as tools for connecting fortified heritage at transnational level. Analyzing the experience of the Destination Napoleon Cultural Route of the Council of Europe, the author will introduce the concept of the Cultural Route and explain the main actions of this specific route in the field of fortifications, battlefields and battlescapes (as a specific form of cultural landscape) as well as possibilities of using these insights and good practice by other similar routes.

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INSTITUT EUROPÉEN DES ITINÉRAIRES CULTURELS

**Dirk Röder, FORTE CULTURA**

# FORTE CULTURA – EUROPEAN CULTURAL ROUTE OF FORTIFIED MONUMENTS

## Catalyst for the valorisation and sustainable use of fortified cultural heritage based on international cooperation

As a European Cultural Route, FORTE CULTURA connects historical fortified monuments to tell the story of militarily defensive buildings and their transformation into cultural sites that bring people together. Along the route, over 60 stations in more than 10 countries represent fascinating "architectura militaris" of the last six centuries, built to protect people and regions from war and destruction.

The dissonant legacy of these monuments continues to shape the history and identity of cities, regions, nations and the European Union to this day and has great potential for sustainable cultural and educational tourism on the history of Europe.

FORTE CULTURA fulfils two essential functions in this context:

The FORTE CULTURA **Cultural Route** acts as a catalyst for the development of qualified cultural and travel offerings along the fortified heritage of Europe and as a multiplier for cultural tourism in fortresses.

The FORTE CULTURA **Network** acts as a catalyst for interdisciplinary knowledge exchange and for activities, projects and cooperation aimed at enhancing and sustainably utilising the fortress heritage at local, regional and transnational level. The topics range from restoration and revitalisation, site- and urban development, fortress management, marketing and tourism, education, culture and art to inclusion, sustainability and climate change, youth exchange and the promotion of peace and democracy.

By providing impetus for cooperation between experts and stakeholders from a wide range of interest groups, FORE CULTURA creates sustainable partnerships and projects to support fortified cultural heritage, which often develop into best practices for innovation and international cooperation.

FORTE CULTURA
NETWORK OF THE CULTURE ROUTE FORTIFIED MONUMENTS

**Marie-Luise Binder-Krieglstein, James Miller , FH Joanneum University of Applied Sciences, Bad Gleichenberg, Austria**

## THE CASTLE ROAD: A CASE STUDY IN THE USE OF A NETWORK OF FORTIFICATIONS AS MOTORS OF SUSTAINABLE RURAL TOURISM DEVELOPMENT

For more than three decades the cultural route known as "The Castle Road" has promoted rural tourism development, first in Austria and now more recently in Slovenia and Croatia, as well. Linking castles, fortresses and other culturally important historical places, the organisation has successfully raised awareness of the region as a tourist destination.

Cultural routes are designed to thematically bundle cultural tourism offers in a specific region and thereby promote regional tourism development (Graf & Popesku, 2016). When well-designed they do so in a sustainable way that benefits a large number of regional stakeholders, as well as addressing the interests of tourists. Keys to the success of a cultural route include, as with all non-profit. organizations, effective management, stable financing, coordinated stakeholder engagement and concerted efforts to develop a common identity, in this case for a region (Bryce, 2017). This is a crucial part of the effort to give a destination a distinctive narrative, which in turn gives tourists a reason to visit it.

Although the organization itself did not do a good job of information management in the first decades of its existence, some of its early members were able to fill in some of the documentary gaps. All available documents on the organization's history were gathered into a digital archive. This evidence was then augmented with oral history interviews with stakeholders from the early days, as well as more recently, to provide as systematic an overview of the strengths and weaknesses of the Castle Road's development as possible.

The history of the Castle Road makes it clear how crucial for an organization it is to successfully address key questions, including how to handle growth, how to secure solid financing, how to manage internal and external communication, as well as how to develop and maintain an effective narrative reflective of a clear identity.

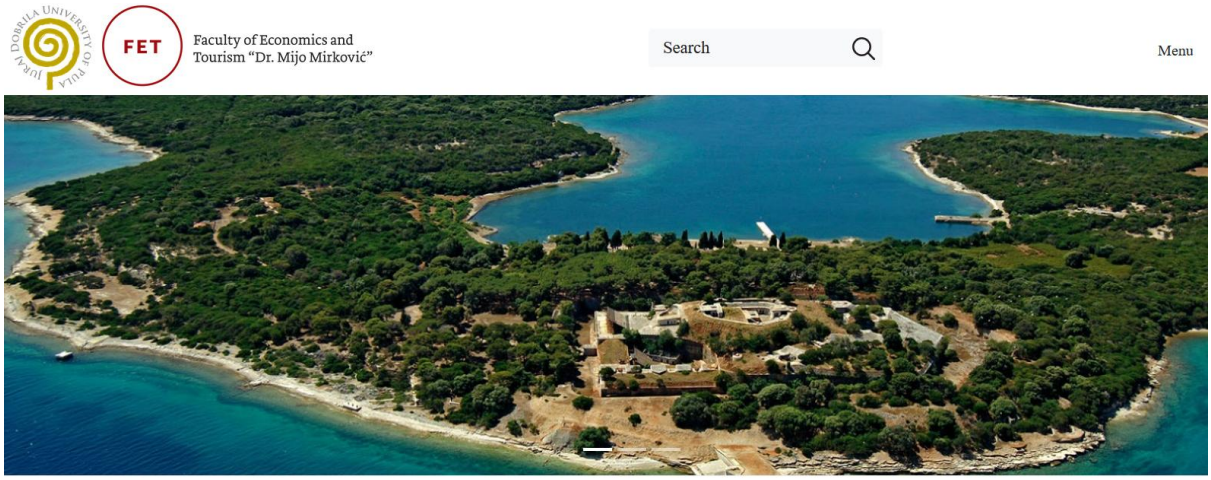
The example of the Castle Road illustrates how a cultural route, when successfully managed, can serve as a motor of sustainable tourism development. Its struggles to adapt to new circumstances over the years can also serve as a guideline for management of non-profit, non-governmental regional tourism organizations. Precisely because The Castle Road has existed for so long, it has been forced to evolve with a changing regional development landscape, and this makes it a very valuable example of how to navigate such change.

**Teresa Colletta, University of Naples “Federico II”, DIARCH**

# CREATIVE TOURISM AND CULTURAL ITINERARIES. AN INNOVATIVE STRATEGY FOR THE ENHANCEMENT OF FORTIFICATION NETWORKS

The consideration of the relevance of the fortified and military heritage as an integral part in each period of human history is now acquired. Fortifications are cultural assets rich in VALUES, unique in their form and in the great diversity of the set of architectural structures from other types of cultural heritage. Therefore, fortified architectures today constitute a testimony of a cultural identity, being the values of the art of fortification present in all regions in the world and highlighting the traditions of a community (ICOMOS ICOFORT Charter 2021). Fortified structures no longer identified as individual “castle” structures, “fort” elements or sites, but considered parts of a territorial defensive system developed over a long period of time; fortification systems integrated into “cultural landscapes” and environmental territories, according to the diversity of the site’s nature, in different “fortified landscapes” connected with historic cities. New opportunities for the enhancement of fortifications**.** Today's research focuses on the formation of "networks" of fortified architecture -network- and also on possible "fortified itineraries". A "conservative" line to be considered positively since the "Cultural Itineraries" are widely recognized at international level as a valid strategy for the reuse and enhancement of "assets" in a systemic perspective.

The type of scientifically organized cultural route offers a great opportunity for both tourism and cultural heritage. For tourism, the validity of the "itineraries" is found in the opening of new markets and products in line with the new dynamics, profiles and needs of customers, in the opportunity for the development of sustainable tourism and a diversification of tourist destinations. Mainly the creation of a "route" gives rise to a more "informed" and quality cultural tourism (ICOMOS Cultural Tourism ICTC Charter 2022). For cultural heritage, the identified “pathway” gives rise to a new context that can make the management of the asset profitable, included in a “network,” promotes their greater participation, which is essential for their enhancement, and ensures their “integrated preservation” for future generations. Therefore, the great opportunity to focus and implement the concentration of close relationships between tourism and cultural itineraries is affirmed by many (ICOMOS Cultural Itineraries CIIC Charter 2008). In the survey carried out, a fragmented presence of historical cultural routes involving fortified and military heritage is noted: both in the “cultural routes” of the Council of Europe and in the fortified places of the World Heritage List of UNESCO, for the most part bastioned cities between the 14th and 17th centuries, except for the national and transnational fortified "serial sites". The current proposals for "cultural routes" concerning the European fortified heritage, the ongoing projects for the creation of European networks are compared with the cultural itineraries on fortified sites in Italy, mostly at regional level, established as "thematic itineraries", referred to in the "Tourism Code", not being mentioned in the "Code of Cultural Heritage and Landscape". While recognizing the close relationship between tourism and cultural itineraries and for fortifications a great opportunity to reconstruct the liveability of individual structures, as a system of fortified sites in unitary projects of re-use for new functions, having lost the original ones for which they were designed. A good line to continue one’s way.

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