The SMITour Project |
SMart Industrial Tourism in the Mediterranean

Work Package 1 –
State of the Art Analysis

D 1.2.1 Catalogue of Industrial Tourism Practices

SMITour | Interreg Euro-MED | Co-funded by the European Union

https://smitour.interreg-euro-med.eu/

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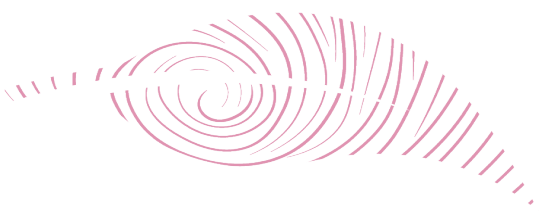


Executive Summary

This report presents a comprehensive Catalogue of Industrial Tourism Practices, drawing on data from a survey of industrial tourism sites. As part of its activities, the SMITOUR project conducts a "State of the Art Analysis," gathering information from partners about tourism systems, industrial tourism practices, and the application of advanced technologies in the tourism sector. This document, "D1.2.1 Catalogue of Industrial Tourism Practices," presents a picture of the current state of industrial tourism in the partner regions. It assesses the current state of industrial tourism, identify best practices, and highlight key challenges and opportunities for future development.

The catalog serves as a resource for anyone interested in industrial tourism in the Mediterranean, promoting heritage preservation and highlighting innovative approaches to make industrial history accessible, sustainable, and meaningful. Here are the key points from the document:

- **Digital and Augmented Experiences:** Digital technologies such as mobile apps, AR tours, VR reconstructions, and interactive maps are transforming industrial tourism, making sites more accessible and engaging.
    - **Mobile Apps:** Mobile and web-based apps provide real-time information, interactive storytelling, and self-guided tours, enhancing visitor engagement. Examples include the Cultural Route by the European Route of Industrial Heritage (ERIH) and the TIPO app for Prato.
    - **AR Tours:** Augmented reality tours overlay digital content onto physical environments, enabling visitors to visualize historical scenes and machinery in operation. An example of this is the MuCa (Museo della Cantieristica) in Italy.
    - **VR Reconstructions:** Virtual reality reconstructions provide fully immersive experiences, allowing users to explore historical sites and scenes as if physically present. Examples include the Museu Nacional Ferroviário (National Railway Museum) in Portugal and the JGL Pharmacy Museum in Croatia.
    - **Interactive Maps:** Interactive maps and geolocation apps guide visitors through sites, providing location-specific information. An example is the digital guide offered by Etno kuća Stara Vrbenska Kuća in Croatia and the Opolskie Economic Development Center in Poland.
- **Immersive and Interactive Activities:** These activities transform industrial sites into dynamic environments where visitors actively engage with history and culture.
    - **Theatrical Tours:** Theatrical and story-led tours use character-led narratives to portray the lives of people associated with the site. The Heritage Interpretation Centre of the Coal Basin in Teruel, Spain, is an example.
    - **Culinary and Craft Experiences:** Sites offer opportunities to sample local products and participate in craft-based workshops. The Museum of Leather in Slovenia offers a culinary experience in Villa Mayer.
    - **Activity-Linked Tours:** These tours allow visitors to participate in historical tasks or routines, such as mining simulations. Visitors can kayak through an old mine at Peca Mountain in Slovenia.
    - **Craftsmanship Workshops:** Visitors can learn and practice skills central to the site's history. Mon Artesania in l'Ametlla de Mar, Spain, offers hands-on workshops using natural fibers.

- **Educational and Community Engagement Programs**: These programs make industrial tourism accessible and educational for local communities, schools, and individuals.
    - **School Collaborations**: Industrial sites partner with schools to design field trips and educational workshops. Examples include the Maribor Textile Industry Museum in Slovenia and the Industrial Gas Museum in Greece.
    - **Socially Inclusive Programs**: These programs ensure accessibility for all, including people with disabilities, by providing sensory-friendly tours, multilingual resources, and community partnerships. The Benaki Museum in Greece is a good example.
    - **Open Archive Projects**: These projects involve making historical documents available to the public, inviting community engagement. The Barcelona Maritime Museum is an example of such.
- **Conservation and Heritage Preservation**: This section emphasizes the need to maintain historical sites and artifacts, including machinery and buildings.
    - **Preservation of Machinery:** Preserving machinery and artifacts is key to illustrating the technological advancements and work processes of historical industries. The Almadén Mining Park in Spain and the Fala Hydroelectric Power Plant Museum in Slovenia are good examples of this.
    - **Restoration and Adaptive Reuse:** The restoration and adaptive reuse of industrial buildings allow sites to evolve while retaining historical value. The Manresa Water and Textile Museum in Spain provides an example of this.
    - **Industrial Landmarks as Cultural Venues**: Industrial sites are repurposed into cultural venues for events like concerts and exhibitions. The Minas de Almadén in Spain and the Electricity Museum in Lisbon, Portugal, are examples.

Introduction to the SMITour project

The SMITour Project | SMart Industrial Tourism in the Mediterranean

The SMITour project identifies the need to develop new SMart Industrial Tourism (SMIT) activities as a common challenge for Mediterranean regions wishing to leverage their industrial and manufacturing sites to diversify the economy, stimulate social and economic growth, minimize environmental impact and boost research and technological innovation. The high rate of industry participation in industrial tourism clusters makes this sector ideal for experimenting with advanced and immersive technologies that are already being adopted by manufacturing industries and that have been greatly enhanced by the covid-19 pandemic, and that allow combining physical and virtual visits through the use of AR, VR or MR (Augmented, Virtual and Mixed Reality). The virtuous combination of industrial tourism with advanced technologies gives rise to Smart Industrial Tourism (SMIT).

SMITour aims at studying the social and economic potential of SMart Industrial Tourism in six Mediterranean regions, assessing the state of the art by analyzing existing good practices in industrial tourism and in the use of advanced technologies in the tourism sector, exploring pathways for the development of SMIT activities in the regions and cities involved.

The project addresses the partners' common challenges by pooling their experience and know-how and by creating transnational Focus Groups involving the regional stakeholders to implement a series of thematic Innovation Camps that will co-design roadmaps and figure out a common Strategy and Action Plan to develop SMart Industrial Tourism. The Strategy and Action Plan will help MED regions to diversify tourism to stimulate social and economic growth while enhancing technological innovation. The partners will eventually be able to mobilize the necessary resources (human, technical, financial) and structures (management and governance) to achieve the project's goals.

The following is the partnership of the project:

1. Municipality of Prato (IT) - Lead Partner
2. University Institute of Lisbon (PT)
3. Industrial Tourism Network of Catalonia - Barcelona (ES)
4. Prato Textile Museum Foundation (IT)
5. Hellenic Clothing Industry Association - Athens (EL)
6. eZAVOD institute (SI)
7. Faculty of Economics and Business Rijeka (HR)

SMITour is funded by the Interreg Euro-MED programme through the European Regional Development Fund and co-financed by the National Revolving Fund for the implementation of EU policies.

Work Package1 – State of the Art Analysis

Activity 1.2: Industrial tourism practices in the Mediterranean
Deliverable: D 1.2.1 Catalogue of Industrial Tourism Practices

Partner in charge: Iscte - University Institute of Lisbon
Partners involved: Prato, Iscte, XATIC, MDT, HCIA, eZAVOD, EFRI
Date of production: 31 January 2025

As a basis for its activities, SMITOUR pools and exploits the experience and know-how of its partners and regional stakeholders to create a shared knowledge-base that will be used by the transnational Focus and Working Groups (FWGs) to implement a series of thematic Innovation Camps. The Innovation Camps will in turn develop a number of thematic roadmaps to meet the several sub-challenges posed by the overall objective of developing Smart Industrial Tourism.

To create the shared knowledge-base, Work Package 1 of the project performs a "State of the Art Analysis", collecting information from its partners about the following three areas of interest:

A1.1 - Tourism systems in the partner regions

A1.2 - Industrial tourism practices in the Mediterranean

A1.3 - Application of advanced technologies in the tourism sector

The present document constitutes deliverable: **"D1.2.1 Catalogue of Industrial Tourism Practices"** resulting from activity A1.2 above. D1.2.1 is **a picture of the state of the art of Industrial Tourism Practices in the partner regions covering a significant number of Good Practices either in Industrial Tourism, or that have a bearing on Industrial Tourism.**

Introduction

The Mediterranean region has a rich industrial history, and industrial tourism is becoming an increasingly popular way to experience and learn about this heritage. This catalog showcases innovative and diverse approaches to industrial tourism in the Mediterranean, promoting local heritage while enriching the visitor experience. By blending digital, interactive, educational, and conservation methods, these practices help preserve the industrial history of the region in ways that are accessible, sustainable, and meaningful.

This catalog is intended to be a resource for anyone interested in industrial tourism in the Mediterranean. It includes examples of best practices from across the region, covering a wide range of industries and types of sites. The catalog is organized into four main sections:

- Digital and Augmented Experiences
- Immersive and Interactive Activities
- Educational and Community Engagement Programs
- Conservation and Heritage Preservation

Each section includes a variety of examples of best practices, along with information on the technology and methods used. The catalog also includes several case studies, which provide more detailed information on specific industrial tourism sites in the Mediterranean.

We hope that this catalog will be a valuable resource for anyone interested in industrial tourism in the Mediterranean. We believe that industrial tourism has the potential to be a major force for economic and social development in the region, while also helping to preserve the region's rich industrial heritage.

1. Digital & Augmented Experiences

The integration of digital and augmented experiences has revolutionized industrial tourism by making historical sites and artifacts more accessible, immersive, and engaging for visitors. Digital tools provide new ways to explore and understand complex histories, from interactive mobile apps to cutting-edge augmented and virtual reality (AR and VR) technologies. By enhancing sensory experiences and layering digital information onto physical landscapes, these tools allow industrial tourism sites to reach broader audiences and bridge the past and present in innovative ways. As a result, they cater not only to those who can physically visit these places but also to virtual tourists around the world who are curious about industrial heritage.

1.1. Mobile and Web-Based Apps

Mobile apps have become invaluable tools in the industrial tourism sector. They provide users with real-time information, interactive storytelling, and self-guided tours that adapt to individual preferences and pacing. From audio guides to archival images, apps enrich the visitor experience by providing historical context and personal stories linked to the site. Furthermore, these apps often include social features, allowing visitors to share their experiences, connect with other enthusiasts, and provide feedback to improve future offerings.

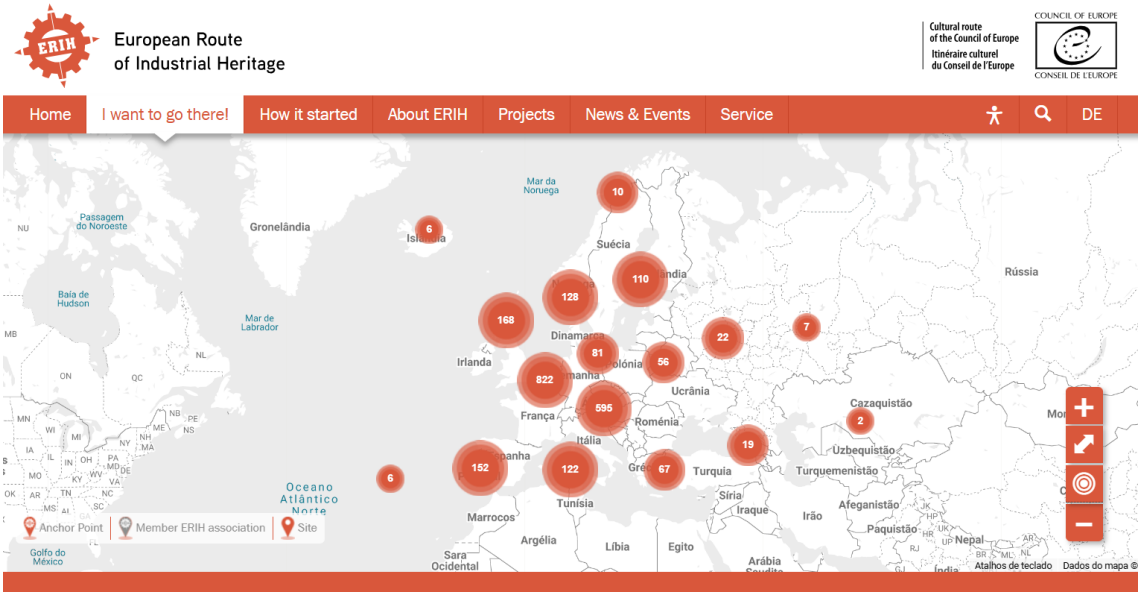
Many sites create digital pathways and storytelling experiences accessible through smartphones. For example, the Cultural Route by the European Route of Industrial Heritage (ERIH) guides visitors through industrial sites across Europe, offering historical insights and interactive maps. The *Guide to Europe's Industrial Heritage* by the (ERIH is a comprehensive reference for exploring key industrial heritage sites across Europe. It highlights historically significant locations where visitors can experience the legacy of European industry, from mining and metallurgy to textile manufacturing and transportation. This guide categorizes sites by thematic routes, covering various industries and countries, and includes information on over 1,850 sites across Europe, aiming to show how industry shaped Europe's landscape, economy, and culture.

The technology

Mobile and web-based applications serve as vital tools in enhancing visitor engagement and accessibility for industrial heritage sites. These apps provide information on historical context, site navigation, and customized tour options, delivering content through mobile devices and browsers in real time. Equipped with multimedia features, such as audio guides, video content, and interactive timelines, these applications enable users to explore the site's history at their own pace. Integration with GPS and location-based services allows for tailored, geotagged information that changes dynamically as visitors move through different areas. By offering multilingual content, ticketing options, and personalized experiences, mobile and web-based applications facilitate an inclusive and enriched exploration of industrial heritage.

ERIH's guide emphasizes interactive experiences at these sites, with many offering tours, museum exhibits, workshops, and cultural events that illustrate historical production processes and their social impacts. In addition to showcasing iconic sites like coal mines in Germany's Ruhr Valley, textile mills in England, and maritime ports in the Netherlands, it promotes smaller sites that play vital roles in regional history.

Figure 1. European Route of Industrial Heritage



Source: https://www.erih.net/i-want-to-go-there

Another example, the TIPO (Prato Industrial Tourism) app offers a unique opportunity to engage with the rich industrial history of Prato and its surrounding district. This digital guide allows visitors to explore key sites related to the textile industry, both past and present, through a combination of real-world visits and virtual experiences.

The app features:

- **Guided tours:** Follow curated itineraries that highlight significant landmarks, including monuments of hydraulic architecture, active textile companies, and former factories repurposed as cultural spaces.
- **Virtual access:** Explore locations that may be difficult to access physically through video animations and detailed information.
- **Thematic itineraries:** Delve deeper into specific aspects of Prato's industrial heritage with focused tours on selected topics.

By using the TIPO app, visitors can gain a comprehensive understanding of the textile industry's impact on Prato's development and its ongoing significance in the region.

Figure 2. Prato Industrial Tourism app

Source: https://play.google.com/store/apps/details?id=it.spacespa.prato.tipo&hl=it&gl=US

1.2. Augmented Reality (AR) Tours

AR is uniquely suited to industrial tourism, where visitors often want to experience a site as it once was, in its working prime. With AR tours, users can see layers of historical data and images overlaid onto the current landscape, creating an "enhanced" reality. This technology provides an interactive way to visualize the transformations of a site and understand the scale, materials, and machinery once active there. For example, visitors may view animations of factory floors bustling with workers or restored machinery in action, bridging the gap between past and present.

The technology

Augmented Reality (AR) technology enhances visitor engagement by overlaying digital content onto the physical environment of industrial heritage sites. Through mobile devices or AR glasses, visitors can view reconstructed historical scenes, visualize machinery in operation, or explore areas of a site that may no longer be physically accessible. The technology uses GPS and camera features to align virtual elements with specific site locations, creating an immersive experience that integrates historical insights with the present-day environment. By blending detailed 3D models, animations, and informational overlays, AR tours provide a dynamic and educational exploration, making historical context readily accessible and enriching the understanding of industrial heritage.

On example comes from Italy, where the MuCa (Museo della Cantieristica) utilizes technology and multimedia to provide a comprehensive and engaging exploration of shipbuilding and local history. Visitors can discover a range of topics, from construction techniques and ship design to the museum's notable 20th-century art collection, featuring works by Mušič, Mascherini, and Timmel.

The museum incorporates innovative multimedia systems to create an immersive experience for visitors of all ages. Interactive elements include:

- A sensory tunnel
- A crane simulator
- Augmented reality stations
- 3D reconstructions

Figure 3. 3D reconstruction stations at MuCa (Museo della Cantieristica)

Source: https://www.mucamonfalcone.it/en/experiences/

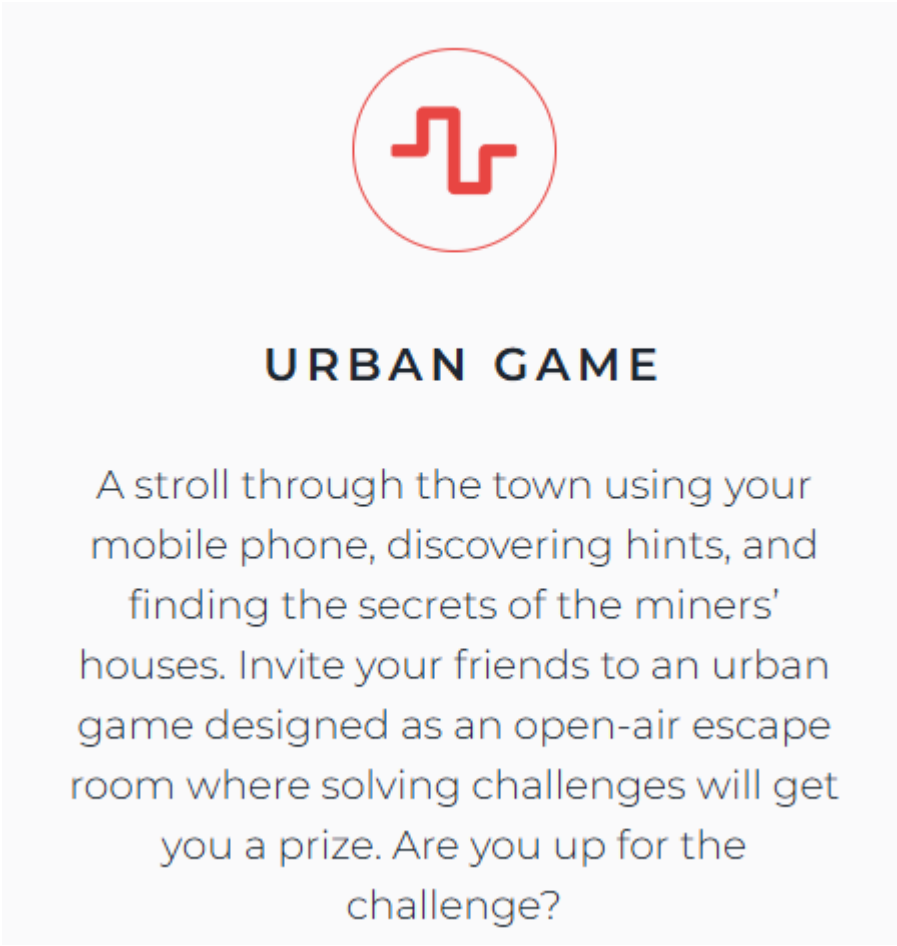
Another example is Idrija Miners' Houses (Slovenia). The Idrija Miners' Houses in Slovenia are historical buildings that provide a glimpse into the lives of miners and their families who worked in Idrija's mercury mines, one of the world's oldest and largest. Dating back to the 18th and 19th centuries, these preserved wooden houses reflect traditional Slovenian architecture and are furnished to show the modest yet resourceful living conditions of the mining community. Visitors can explore the simple interiors, learning about miners' daily routines, family life, and social customs. The site serves as a cultural and educational resource, highlighting both the local heritage and the broader history of mining in the region, which significantly influenced Idrija's development and cultural identity.

They offer an Urban Game where participants can discover the history and secrets of the miners' houses through an engaging urban game. This self-guided experience utilizes your mobile phone to lead you on a journey through the town, uncovering clues and solving challenges.

Features:

- **Interactive Exploration:** Engage with the town's history in a dynamic and participatory way.
- **Open-Air Escape Room:** Combine the excitement of an escape room with outdoor exploration.
- **Team-Based Challenge:** Invite friends to collaborate and solve challenges together.
- **Rewarding Experience:** Earn a prize upon successful completion of the game.

Figure 4. 3D reconstruction stations at MuCa (Museo della Cantieristica)



Source: https://www.rudarske-hise.si/en/for-visitors/

1.3. Virtual Reality (VR) Reconstructions

VR brings a more immersive experience to the exploration of industrial sites, especially those that may be inaccessible or too fragile for extensive physical tours. By recreating entire historical settings in 3D, VR allows visitors to "walk through" factories, mines, or transport hubs as they would have appeared in past centuries. VR experiences can include detailed historical narratives, realistic soundscapes, and interactive elements, providing an engaging and memorable perspective on industrial heritage.

The technology

Virtual Reality (VR) reconstructions provide a fully immersive experience, allowing users to explore industrial heritage sites and historical scenes as if they were physically present. VR technology uses high-resolution 3D models, panoramic imagery, and spatial audio to create a realistic virtual environment that replicates historical settings, machinery, and activities of the past. By donning VR headsets, users can navigate through these environments, interact with elements, and experience the sights and sounds of industrial processes and events. This technology allows for the preservation of fragile or inaccessible locations, granting viewers a detailed, interactive view into the past and offering an educational experience that fosters deeper engagement with industrial heritage.

In Portugal, the Museu Nacional Ferroviário (National Railway Museum). The Museu Nacional Ferroviário (National Railway Museum) in Entroncamento, Portugal, is a major cultural institution dedicated to preserving and showcasing the history of Portuguese railways. Housed in a historic railway complex, the museum offers an extensive collection that includes vintage locomotives, passenger carriages, and railway memorabilia, reflecting Portugal's industrial and transportation heritage. Spanning over 160 years of railway history, it features rare steam engines, historic tools, and artifacts, offering visitors an immersive journey through the evolution of rail transport. The museum's interactive displays, restored trains, and thematic exhibitions allow visitors to experience the importance of railways in Portugal's social and economic development, as well as their impact on modern mobility and technology.

The museum uses VR to showcase rail transport history and its impact on social change. The museum offers interactive experiences that allow visitors to engage with railway operation firsthand:

- **Driving Simulator:** Step into the role of a train driver and experience the challenges and complexities of operating a locomotive.
- **Model Railway Circuit:** Embark on a journey through a miniature railway landscape, observing the intricacies of railway systems in a scaled-down environment.

Figure 5. Advertisement allusive to VR usage at Museu Nacional Ferroviário

Source: https://www.e-cultura.pt/artigo/28180

Another example is the Virtual reality in the JGL Pharmacy Museum, Croatia. The JGL Pharmacy Museum in Rijeka, Croatia, is a unique museum dedicated to the history and evolution of pharmacy, showcasing the rich heritage of pharmaceutical practices in Croatia and beyond. Established by the JGL pharmaceutical company, the museum features an extensive collection of historical medical instruments, antique pharmacy furnishings, traditional remedies, and rare manuscripts, tracing the development of pharmacology from ancient times to the present. Visitors are offered a detailed look into the scientific, cultural, and historical aspects of pharmacy through interactive displays and educational exhibits. The museum also emphasizes the role of pharmacists in healthcare and provides insight into the traditional methods and innovations that have shaped modern medicine. One experience consists of a virtual pharmacist application where the user helps patients in pharmacies with their complaints through VR glasses.

Figure 6. Virtual reality in the JGL Pharmacy Museum

Source: https://muzej-farmacije.jgl.hr/virtual-reality-in-the-jgl-pharmacy-museum/?lang=en

1.4. Interactive Maps and Geolocation Apps

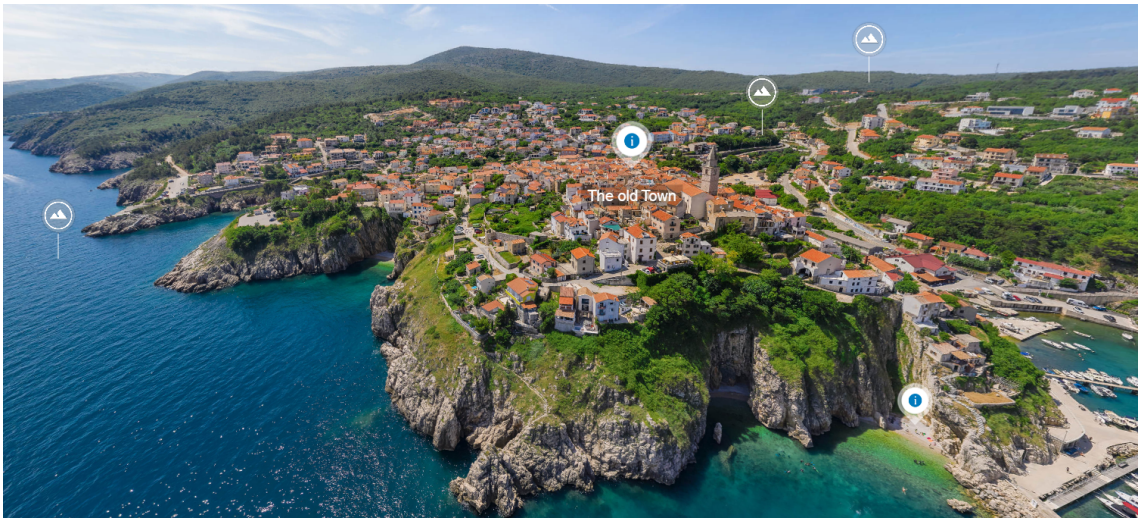
Interactive maps and geolocation apps have expanded the possibilities for exploring industrial heritage in situ. By using GPS-based technology, these apps guide visitors through designated routes, marking points of interest and revealing site-specific information as they move through industrial landscapes. These tools also allow users to customize their journey, either focusing on particular areas of interest or following curated thematic tours. With interactive mapping, industrial sites gain a narrative and spatial coherence that helps visitors connect individual locations to the broader history of industry.

The technology

Interactive maps and geolocation apps use GPS technology and digital mapping to provide real-time navigation and location-specific content for industrial heritage sites. These tools guide users through points of interest on a map, offering rich, multimedia information—such as text, images, audio, and video—at each stop. Geolocation functionality ensures that users can easily navigate extensive sites or historical routes while receiving relevant historical or contextual insights as they move from one location to another. In addition, these apps often allow for personalized route planning, proximity alerts, and interactive layers that highlight various themes, helping visitors access a tailored, self-paced exploration of industrial heritage landscapes.

One example is the digital guide offered by Etno kuća Stara Vrbenska Kuća (Vrbnik Etno House), Croatia. Etno kuća Stara Vrbenska Kuća is a traditional ethnographic house in Croatia that serves as a cultural heritage site, preserving the historical lifestyle and architecture of rural Croatian villages. Located in the village of Vrbanja, this house is part of a local initiative to celebrate and protect regional heritage by showcasing authentic architecture, traditional furnishings, and historical artifacts. Visitors can experience the unique cultural identity of the region through exhibitions of traditional tools, crafts, and clothing, providing an immersive look at the daily lives of past generations. The site also hosts educational programs and community events, promoting awareness and appreciation of local history and rural customs among visitors and the local community. It provides a virtual tour with information on multiple languages, allowing to overcome language barriers and enhance accessibility.

Figure 6. Virtual tour at Etno kuća Stara Vrbenska Kuća



Source: https://vrbnik.hr/hr/stara-vrbenska-kuca/

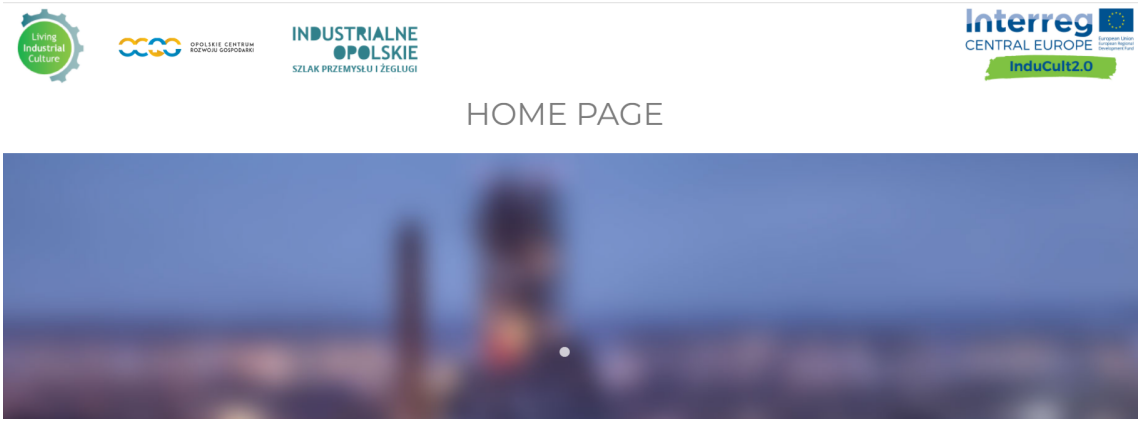
Another example is the the Opolskie Economic Development Center, in Poland is an institution dedicated to supporting and promoting economic growth in the Opolskie region, Poland. It offers resources for businesses, including consulting services, investment support, and programs for small and medium-sized enterprises to foster local entrepreneurship. The center actively collaborates with regional and international partners to encourage economic innovation, provide training, and improve competitiveness in various industries. Its initiatives aim to enhance the regional economy, attract investment, and create sustainable economic opportunities for the local community.

They offer an interactive online map with geolocation for regional industrial tourism in Opolskie. The guide to the "Industry and Shipping Route," enhancing exploration and understanding of the region's industrial heritage.

Features:

- **Accessibility:** Available in both mobile and full versions for convenient access on various devices.
- **Visual Appeal:** Enhanced with photographs of key attractions along the route.
- **User-Friendly Interface:** Offers clear navigation and the option to select the main route or thematic routes for a customized experience.
- **Event Promotion:** Features an advertising banner highlighting events related to industrial culture.

Figure 7. Homepage of the geolocation for regional industrial tourism in Opolskie



Source: https://industrial.opolskie.pl/en/home-page/

2. Immersive & Interactive Activities

Immersive and interactive activities have transformed industrial tourism sites from passive viewing spaces into dynamic environments where visitors can actively engage with history, culture, and craftsmanship. By offering hands-on experiences and narrative-driven tours, these sites bring industrial heritage to life, fostering deeper connections and understanding. This shift towards interactivity allows visitors to appreciate industrial sites not just as historical landmarks, but as spaces where they can participate in reenactments, learn traditional crafts, and even taste the flavors of the past. Through such active involvement, industrial tourism creates memorable and personal experiences that enrich the visitor's journey.

2.1. Theatrical and Story-Led Tours

Theatrical and story-led tours are an increasingly popular way to immerse visitors in the industrial past, using character-led narratives and dramatic storytelling to vividly portray the lives of workers, owners, and other historical figures associated with the site. Guides often assume the roles of historical characters, offering insights into daily life, struggles, and achievements, while moving visitors through significant areas of the site. By framing the site's history as a series of personal and dramatic moments, theatrical tours engage visitors emotionally and intellectually, providing them with a powerful and memorable connection to the industrial era.

Implementation

To implement theatrical and story-led tours, sites should collaborate with skilled storytellers, actors, or local historians who can bring the industrial narrative to life. Training guides to embody historical figures or create engaging narratives enhances visitor immersion. The use of period costumes, props, and interactive elements further enriches the experience.

One example is the Heritage Interpretation Centre of the Coal Basin in Teruel, Spain, that uses theater to engage visitors in the history of coal mining. Actors in period costumes perform scenes from mining life, highlighting the dangers, routines, and social impacts of coal mining.

The Dinamiz-ARTj program breathes new life into communities undergoing economic transition by fostering cultural engagement through theatrical performances. During the month of June, 22 diverse performances will be offered in the province of Teruel, Spain, featuring 14 emerging artists from the Dinamiz-ARTj catalog. These productions, ranging from theater to music, cater to audiences of all ages and take place in municipal spaces across 10 towns. By providing free access to these performances, Dinamiz-ARTj aims to enrich the cultural landscape of areas affected by the closure of coal mines and power plants, supporting both young artists and local communities.

Figure 9. Logo of the Dinamiz-ARTj catalog

Source: https://ciuden.es/archivo-noticias/dinamiz-artj-promueve-22-actuaciones-en-la-provincia-de-teruel-durante-el-mes-de-junio/

The Chios Mastic Museum, Greece, offers a captivating and multi-sensory experience that delves into the history and production of mastic, a unique resin harvested from trees on the island. A video wall immerses visitors in the landscape and culture of Chios, while a multimedia model and projection mapping showcase the intricate details of mastic cultivation. A 3D camera provides a unique perspective, allowing visitors to step into the shoes of a mastic producer and experience the harvesting process firsthand.

The museum collaborates closely with the local mastic producers' association and Mediterra, a research and trade organization, to ensure an authentic and engaging representation of this important cultural tradition.

Figure 10. Chios mastic museum

Source: https://www.piop.gr/en/diktuo-mouseiwn/Mouseio-Mastixas/to-mouseio.aspx

2.2. Culinary and Craft-Based Experiences

Culinary and craft-based experiences at industrial sites often focus on the local products, food traditions, and artisanal skills that played an essential role in the area's industrial history. Many sites offer tasting tours, culinary workshops, and opportunities to sample products created using historic techniques and recipes. These experiences allow visitors to "taste" history while learning about the processes and labor that once fueled local industries, from brewing to baking to textile production. Culinary experiences can deepen visitors' understanding of how industries impacted daily life and culture, linking them to the broader historical landscape.

Implementation

Implementing culinary and craft-based experiences involves researching and showcasing local products, food traditions, and historical recipes. Partnering with local artisans, chefs, or food historians ensures authenticity and provides visitors with hands-on opportunities to learn and create. Offering workshops, tastings, or demonstrations allows visitors to connect with the tangible aspects of industrial heritage.

For example, the Museum of Leather in Slovenia offers a culinary experience in Villa Mayer. The Museum of the Leather Industry in Slovenia presents a comprehensive history of leather tanning in Šoštanj, spanning over 200 years. The museum chronicles the industry's evolution from its beginnings in a family-run tannery to its growth as a major economic force, and finally to its closure in the late 20th century. Exhibits showcase the impact of the industry on the town, highlighting the Vošnjak family's role and showcasing aspects of workers' lives. Visitors can also explore a collection of leather processing machines, providing insight into the tools and techniques of the trade.

Figure 11. Culinary experience in Villa Mayer

Source: https://www.slovenia.info/en/things-to-do/slovenia-unique-experiences/85-flight-to-the-tannery-of-europe

2.3. Activity-Linked Historical Tours

Activity-linked historical tours provide hands-on experiences that immerse visitors in the day-to-day tasks and routines of workers from the industrial age. These tours might involve participants in activities such as mining simulations, milling grain, or operating vintage machinery under the guidance of skilled interpreters. Such activities help visitors grasp the physical demands, technical skills, and ingenuity required in various industrial occupations. By allowing them to feel, see, and hear the labor firsthand, these tours offer a more tangible understanding of the industrial heritage being preserved.

Implementation

Implementing activity-linked historical tours requires careful planning and collaboration with experts who can recreate historical tasks or routines safely and authentically. This may involve restoring vintage machinery, developing simulations, or designing interactive exhibits that allow visitors to participate in activities related to the site's industrial past.

In Peca Mountain, Lead and Zinc Mine Mežica, Slovenia, visitors can explore a defunct lead mine by kayak, paddling through underground passages once used for ore transportation. Mežica lead and zinc mine was one of the last lead-zinc mines in Europe that was still operating at the end of the twentieth century. In its more than three hundred years of operation, it fed many families over the centuries, and it had a strong influence on life outside the mine in the Mežica valley area. After the closure of the mine, a rich technical, cultural and natural heritage remained. Due to the strong local initiative and the desire of the employees to preserve this heritage, the company RSC Mežica v zapiranju d.o.o. also included the mining project “Protecting parts of the Mežica mines for the purpose of preserving the natural, technical and cultural heritage” among the closing projects.

Figure 12. Kayaking at the Lead and Zinc Mine Mežica

Source: https://lh3.googleusercontent.com/p/AF1QipNAXd2fXo64R6ocrbirpv26W-uLcLoTqEENIXUY=s1360-w1360-h1020

2.4. Craftsmanship Workshops

Craftsmanship workshops allow visitors to learn and practice skills central to the site's history, such as blacksmithing, weaving, pottery, or metalworking. Led by artisans or expert craftspeople, these workshops offer a direct and meaningful connection to the traditional crafts once associated with the industry and region. Participants often create their own souvenirs or products, which not only deepens their engagement but also provides a lasting reminder of the experience. Craftsmanship workshops offer a rare opportunity to preserve and appreciate the artisanal expertise that helped shape industrial culture and community identity.

Implementation

To implement craftsmanship workshops, sites need to identify and collaborate with skilled artisans who can teach traditional crafts. Providing dedicated workshop spaces with necessary tools and materials ensures a hands-on learning experience for participants. Offering workshops that allow visitors to create their own souvenirs or products enhances engagement and provides a lasting connection to the site's industrial heritage.

Mon Artesania in l'Ametlla de Mar, Spain, offers visitors the opportunity to engage with traditional craft techniques. The site includes a workshop and shop where visitors can:

- **Learn about natural fibers:** Discover the unique properties and uses of "pauma," "boga," and "espart," traditional plant fibers used in crafts.
- **Explore craft techniques:** Learn about the techniques involved in working with these natural materials.
- **Create a personalized souvenir:** Participate in a hands-on workshop and craft a bracelet or the initial of your name.

Figure 13. Craftsmanship to create a personal souvenir

Source: https://xatic.cat/ca/descobreix/mon-artesania

3. Educational & Community Engagement Programs

Educational and community engagement programs play a pivotal role in industrial tourism, expanding its impact beyond visitors to include local schools, communities, and individuals who may not typically engage with these sites. By developing programs that are inclusive, accessible, and educational, industrial tourism sites transform into vital community resources, fostering intergenerational knowledge-sharing and local pride. These initiatives help establish industrial sites as interactive learning environments, blending academic and community-driven approaches to make the history of industry relevant to contemporary life and future generations.

3.1. School Collaborations and Student Programs

School collaborations and student programs provide young people with unique opportunities to learn about the industrial past through hands-on and curriculum-linked experiences. Many industrial sites partner with schools to design field trips, interactive workshops, and educational resources that align with classroom learning objectives, covering topics from history to environmental science. These programs introduce students to the realities of industrial work and its influence on society, fostering an appreciation for the region's heritage while stimulating curiosity about technological and social evolution.

Implementation

Implementing successful school collaboration and student programs at industrial heritage sites requires a multifaceted approach. Key strategies include:

- Curriculum Alignment: Design programs that directly support educational curricula, offering hands-on experiences that reinforce classroom learning.

- Interactive Learning: Develop engaging activities, such as workshops, experiments, and role-playing, to foster deeper understanding and knowledge retention.

- Teacher Partnerships: Collaborate closely with educators to tailor programs to specific learning objectives and age groups.

- Outreach and Promotion: Actively promote programs to schools and educational organizations, highlighting their educational value and relevance to current curricula.

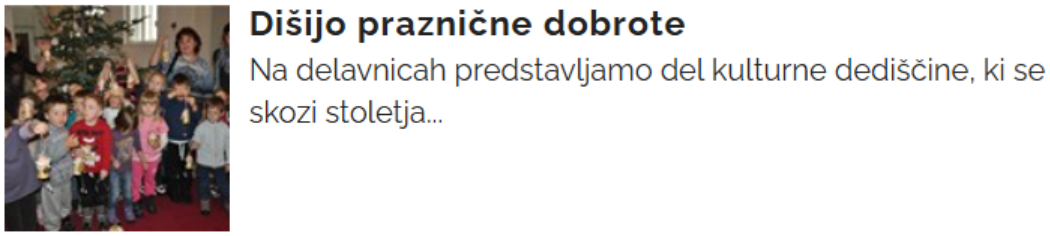
The Maribor Textile Industry Museum in Slovenia collaborates with local schools to offer educational workshops about the textile production process. Students learn about weaving, dyeing, and sustainable practices, bridging the gap between past techniques and modern environmental awareness.

The Maribor Textile Industry Museum offers a unique opportunity to engage with the region's cultural heritage through a special program during the Christmas holidays.

Program Highlights:

- **Festive Table Display:** Explore a traditionally decorated festive table showcasing local customs and culinary traditions.
- **Creative Workshops:** Participate in hands-on workshops and create unique crafts inspired by the museum's collection and local traditions. Participants can take their creations home as souvenirs.

Figure 14. Creative workshops with schools



Source: https://museu.ms/activity/details/13/disijo-praznicne-dobrote

The Industrial Gas Museum, Greece, offers an interactive and educational experience (Exploring the Museum with a backpack) designed specifically for families with children aged 4 to 11. Equipped with a "yellow backpack" filled with age-appropriate activities, young explorers embark on a self-guided journey through the museum, uncovering its history and operation through hands-on exploration.

Backpacks tailored for younger children (4-6 years old) focus on sensory experiences, inviting them to touch, hear, and smell the remnants of the gas production process. For older children (7-11 years old), the backpack encourages discovery of the museum's machinery and inventions, highlighting the ingenuity of the Industrial Revolution.

Figure 15. Exploring the Museum with a backpack

Source: https://gasmuseum.gr/en/exploring-the-museum-with-a-backpack/

3.2. Socially Inclusive Programs

Socially inclusive programs aim to make industrial tourism accessible to all, reaching out to underserved communities, people with disabilities, and individuals who may face economic or social barriers to participation. These initiatives may include discounted admission, sensory-friendly tours, or multilingual resources, ensuring that everyone can engage with the historical significance of these sites. Through such programs, industrial tourism sites contribute to social equity, allowing diverse audiences to learn from, appreciate, and feel connected to local heritage.

Implementation

Implementing socially inclusive programs at industrial heritage sites is crucial for ensuring accessibility and engagement for all visitors. Key implementation strategies include:

- Accessibility Audits: Conduct thorough assessments of the site to identify and address potential barriers to access for people with disabilities.

- Universal Design Principles: Apply universal design principles to exhibits, programs, and facilities to accommodate diverse needs and abilities.

- Sensory-Friendly Options: Offer sensory-friendly tours, exhibits, and materials to cater to visitors with sensory sensitivities.

- Multilingual Resources: Provide interpretive materials and programs in multiple languages to cater to diverse linguistic needs.

- Community Partnerships: Collaborate with community organizations and disability advocates to ensure programs are inclusive and responsive to the needs of diverse audiences.

The Benaki Museum / Mentis – Antonopoulos ('NEMA') Passementerie, Greece, has a strong commitment to accessibility and inclusion. Recognizing the diverse needs of its visitors, the museum has developed specialized programs to ensure that individuals with disabilities can fully engage with its collections and exhibitions. These programs may include:

- **Tactile Tours:** Offering hands-on experiences and descriptive language for visitors with visual impairments.
- **Audio Guides and Transcripts:** Providing auditory information and accessible formats for visitors with hearing impairments.
- **Accessible Routes and Facilities:** Ensuring physical access to museum spaces and amenities.
- **Specialized Educational Programs:** Designing tailored programs that cater to the specific needs of visitors with disabilities.

Figure 16. Tactile Tours at the Benaki Museum

Fonte: https://www.benaki.org/index.php?option=com_educations&view=education&id=1023427&Itemid=165&lang=el

3.3. Open Archive Projects and Public History

Open archive projects and public history initiatives involve making historical documents, images, and artifacts available for public access and engagement. These projects invite the community to explore, interpret, and even contribute to the preservation of industrial history. By hosting events like archival exhibitions, public lectures, and digital galleries, industrial sites encourage local residents to participate actively in the curation of their shared history, ensuring it remains a living resource for collective memory.

Implementation

Implementing open archive projects and public history initiatives at industrial heritage sites requires a commitment to accessibility, community engagement, and digital innovation. Key implementation strategies include:

- Digitization and Online Platforms: Digitize archival materials and create user-friendly online platforms for public access and exploration.

- Community Engagement: Involve local communities in the interpretation and presentation of archival materials, fostering a sense of ownership and shared history.

- Public Programming: Host public events, such as workshops, lectures, and exhibitions, to showcase archival materials and engage diverse audiences.

- Digital Storytelling: Utilize digital storytelling techniques to bring archival materials to life and connect with wider audiences.

The Barcelona Maritime Museum actively engages with public history through its open archive projects, making its rich collection accessible and fostering a deeper understanding of the city's maritime past. The museum's exhibitions, "Shipyards and Galleys" and "Catalonia Beyond the Sea," showcase the evolution of Barcelona's Royal shipyards and their role in the Crown of Aragon's Mediterranean dominance.

By presenting artifacts, scale models, and interactive displays, the museum invites visitors to explore the history of shipbuilding, from the construction of powerful galleys to the city's maritime expansion between the 18th and 20th centuries. This approach transforms the museum into a dynamic space where visitors can connect with Barcelona's rich maritime heritage and its significance in shaping the city's identity.

Figure 17. Barcelona Maritime Museum room

Source: https://www.mmb.cat/en/exhibitions/shipyards-and-galleys/

4. Conservation & Heritage Preservation

Conservation and heritage preservation are fundamental to the success and sustainability of industrial tourism, ensuring that valuable historical sites and artifacts remain intact for future generations. Industrial heritage sites often encompass complex machinery, expansive structures, and unique landscapes, each with stories that reflect the ingenuity and labor of past industries. By focusing on preservation, these sites offer visitors authentic glimpses into the past, while helping communities maintain cultural continuity. Effective conservation not only protects physical elements but also highlights the importance of industrial history in shaping local identities and economies.

4.1. Preservation of Historical Machinery and Artifacts

The preservation of machinery and artifacts is a key element of conservation in industrial tourism, as these objects illustrate the technological advancements and work processes that defined historical industries. By maintaining and restoring these machines, industrial sites offer a tactile connection to the past, allowing visitors to witness and, in some cases, experience historical production methods. Such preservation requires specialized knowledge in maintenance and conservation, often involving collaborations with engineers and historians to ensure authenticity. These artifacts not only enrich the visitor experience but also serve as educational resources for understanding industrial progress.

Implementation

Preserving historical machinery and artifacts requires a multifaceted approach that involves:

- Documentation and Inventory: Meticulous documentation of each item, including its history, function, and condition.

- Stabilization and Conservation: Cleaning, stabilization, and conservation treatments to prevent further deterioration.

- Restoration (if necessary): Careful restoration of damaged or missing parts, adhering to ethical conservation principles.

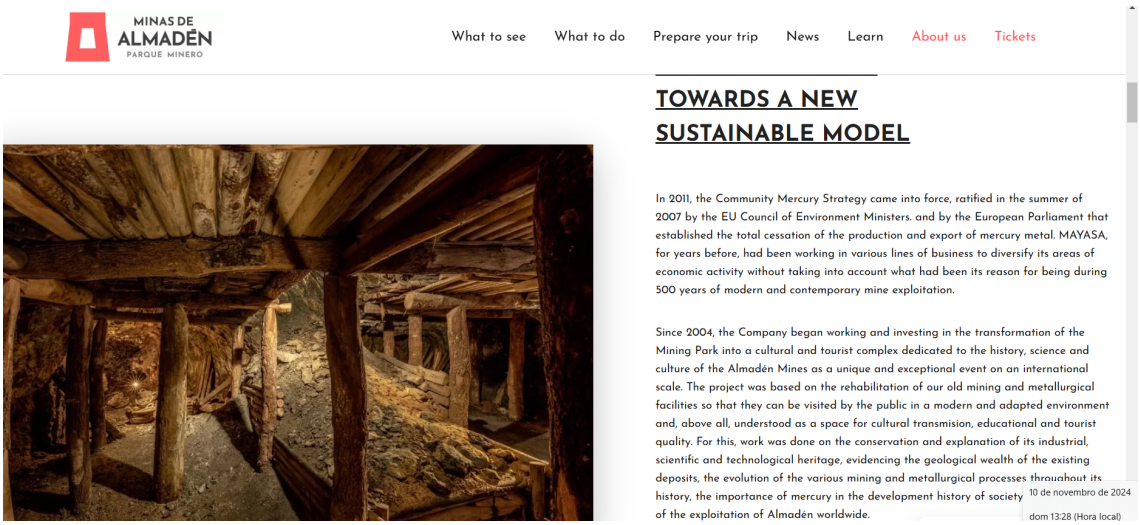
- Preventive Measures: Implementing measures to control environmental conditions (temperature, humidity, light) and prevent damage from pests or human contact.

- Interpretation and Display: Creating informative displays that explain the significance of the objects and their role in the industrial process.

The Almadén Mining Park in Spain stands as a remarkable example of industrial heritage preservation. The park safeguards a vast collection of historical machinery and artifacts that illustrate the evolution of mercury mining in the

region over centuries. Visitors can explore preserved mining infrastructure, including shafts, furnaces, and workshops, gaining insights into the processes and technologies employed in mercury extraction. The park's commitment to preserving these tangible remnants of mining history offers a valuable educational experience and ensures that the legacy of Almadén's mining industry endures for future generations.

Figure 18. Almadén Mining Park website frontage



Source: https://parqueminerodealmaden.es/en/about-us/

The Fala Hydroelectric Power Plant Museum in Slovenia houses an original, fully operational turbine from the early 20th century. This preserved machine is displayed during guided tours, allowing visitors to witness the historic machinery in action.

Figure 19. Original machine house with the fully preserved turbine at Fala Hydroelectric Power Plant Museum

Source: https://www.visitmaribor.si/en/what-to-do/sights/5127-

4.2. Restoration and Adaptive Reuse of Industrial Buildings

The restoration and adaptive reuse of industrial buildings enable industrial heritage sites to evolve beyond their original purposes while retaining their historical essence. Transforming warehouses, factories, and mills into spaces for public use, such as museums, event venues, or even hotels, breathes new life into these structures, blending their historical significance with modern functionality. This practice often requires a careful balance between preserving architectural elements and introducing contemporary updates that make the space functional and accessible. Adaptive reuse projects, therefore, offer a sustainable approach to conservation, allowing communities to retain their heritage while meeting current social and economic needs.

Implementation

Adaptive reuse projects require a comprehensive approach that balances preservation with functionality:

- Historical Assessment: Thorough documentation of the building's history, architecture, and significance.
- Condition Assessment: Evaluating the building's structural integrity and identifying necessary repairs.
- Planning and Design: Developing a plan that respects the building's heritage while meeting the needs of the new use.
- Sustainable Practices: Utilizing sustainable materials and technologies in the restoration and renovation process.
- Accessibility: Ensuring the building is accessible to all visitors, regardless of physical abilities.

The Manresa Water and Textile Museum in Manresa, Spain, has repurposed an old textile mill as a cultural space for exhibitions and events. The intervention allowed to conserve the building’s original architecture, honoring the region’s industrial past while providing a new community-centered venue.

Figure 20. Repurposed old water deposits at Manresa

Source: https://150elements.mnactec.cat/company/diposits-vells-de-manresa/

4.3. Industrial Landmarks as Cultural Venues

Turning industrial landmarks into cultural venues fosters a deep connection between industrial history and contemporary culture. Concerts, art exhibitions, and theatrical performances held within these sites provide unique experiences that draw diverse audiences and enrich the local arts scene. These events add value to industrial landmarks, helping people see these spaces as vibrant community assets rather than relics of the past. By intertwining cultural activities with heritage conservation, these venues promote ongoing public engagement and contribute to the dynamic preservation of industrial history.

Implementation

Transforming industrial landmarks into cultural venues involves:

- Creative Programming: Developing a diverse program of events that appeal to a wide range of audiences.

- Adaptive Reuse: Repurposing industrial spaces to accommodate cultural events while preserving their historical character.

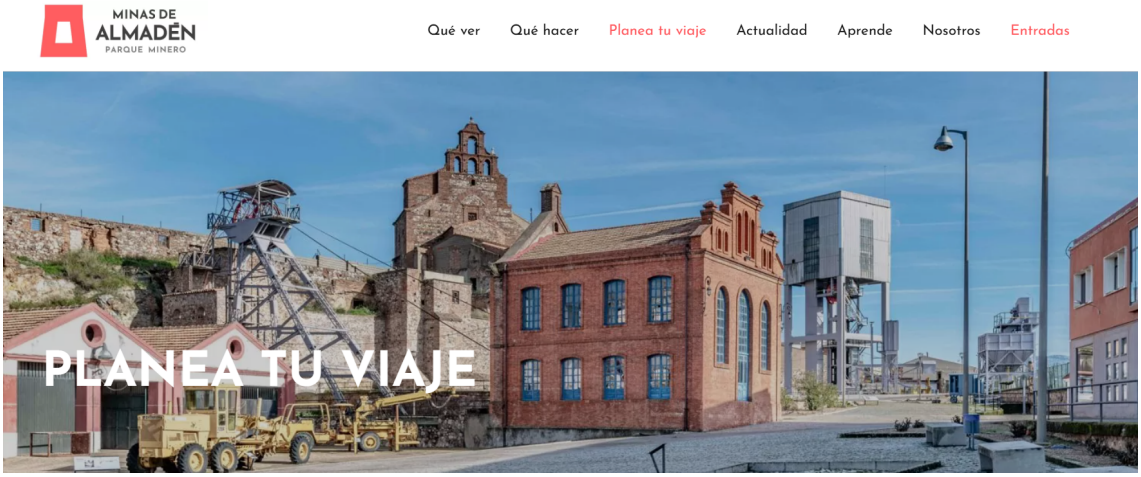
- Community Partnerships: Collaborating with local artists, organizations, and businesses to create a vibrant cultural hub.

- Accessibility and Amenities: Ensuring the venue is accessible to all visitors and providing necessary amenities (parking, restrooms, etc.).

- Marketing and Promotion: Effectively promoting the venue and its events to attract local and international visitors.

The Minas de Almadén, a UNESCO World Heritage Site, exemplifies the adaptive reuse of industrial landmarks for cultural purposes. The site, once the world's largest mercury mine, now serves as a dynamic venue for cultural events and experiences. Its historic buildings and industrial spaces have been repurposed to host exhibitions, conferences, workshops, and artistic performances. By transforming this former industrial site into a vibrant cultural center, Minas de Almadén fosters community engagement, promotes cultural expression, and ensures the preservation of its industrial heritage for future generations.

Figure 21. Industrial Heritage of Minas de Almadén Transformed into a Cultural Hub



Source: https://parqueminerodealmaden.es/planea-tu-viaje/

In Lisbon, Portugal, the Electricity Museum occupies a former power plant that has become a cultural landmark, complete with exhibitions on renewable energy. This adaptive reuse draws attention to Lisbon's industrial history while promoting sustainable innovation.

Figure 22. Imponent facade of an industrial place as a landmark

Source: https://www.feriasemportugal.com/museu-da-electricidade-lisboa