COAL HERITAGE

RFCS Accompanying Measure Project

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BEST PRACTICES IN COALHERITAGE PROJECT

Coal-mining regions around the world face significant challenges in the wake of economic shifts, environmental concerns, and the global transition towards cleaner energy sources. As mines close and industrial activities decline, these regions often struggle with unemployment, environmental degradation, and a loss of cultural identity. However, some former coal regions have successfully transformed into thriving centers of innovation, cultural heritage, and sustainable development. This transformation is co-created with material objects of coal mining remnants which have become a protected part of the environment, a cultural heritage, co-creating the characteristics of both the past of coal mining and the present.

Greece: Technological and Cultural Park

by George S. Maraslidis, CERTH

Historical Overview

Lavrion, located in southeastern Attica, Greece, boasts a rich mining history that spans several millennia. The region is particularly known for its silver, lead, and zinc deposits, which have been exploited since ancient times.

Ancient Times

- **Classical Period:** Mining activities in Lavrion date back to the 5th century BCE during the Classical period of ancient Greece. The silver extracted from Lavrion's mines was instrumental in financing the Athenian navy, which played a crucial role in the Greco-Persian Wars (Figure 1). The mines contributed significantly to the wealth of ancient Athens, allowing for cultural and architectural advancements, including the construction of the Parthenon.
- **Mining Techniques:** The ancient Greeks employed sophisticated mining techniques, including the use of shafts, galleries, and washing tables to extract and process ore. Labor was primarily provided by slaves, including a significant number of captured prisoners of war.

Figure 1. Athenian tetradrachm (5th century BC coin) [1].

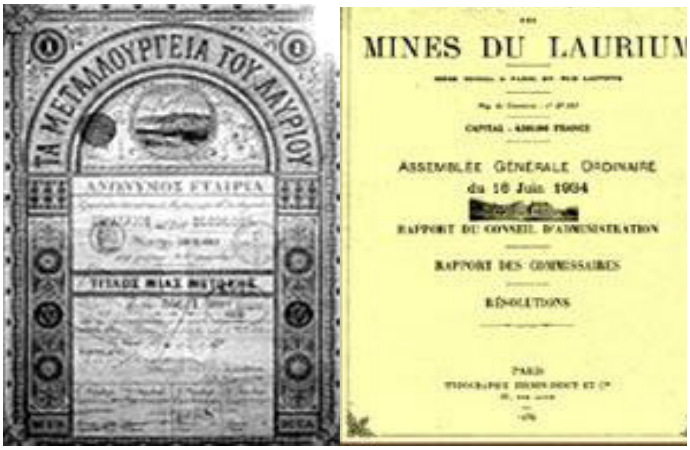

Figure 2. Share of 1873 of the company The Metallurgies of Lavrion and Annual General Meeting document [1].

Figure 3. Compagnie Francaise des Mines du Laurium (1890) [1].

Figure 4. The Lavrion Technological and Cultural Park from a bird's eye view [1].

Modern Era

- **19th Century Revival:** After centuries of inactivity, Lavrion's mines were revitalized in the mid-19th century. In 1864, a French-Greek company, the Compagnie Française des Mines du Laurium (Figure 2, 3), initiated large-scale mining operations. This period marked the introduction of modern mining

techniques and the development of extensive industrial facilities.

- **Economic Impact:** The revival of mining brought economic prosperity to the region, attracting a diverse workforce and leading to the establishment of the town of Lavrion. The mining industry spurred the growth of related industries, including metalworking and chemical processing.

Decline and Closure

- **20th Century:** By the mid-20th century, the profitability of Lavrion's mines declined due to depleted ore reserves and increased competition from other mining regions. The final closure of the mines occurred in the 1980s, leading to economic challenges and environmental degradation.

Transformation into Lavrion Technological and Cultural Park

The closure of the mines left Lavrion with abandoned industrial facilities and a need for economic and environmental revitalization. The transformation of the area into the Lavrion Technological and Cultural Park (L.T.C.P.) (Figure 4) represents a successful effort to repurpose the historical site.

Initiation and Vision:

- **Establishment:** The concept for the L.T.C.P. was developed in the late 1990s as a collaboration between the Greek government, the National Technical University of Athens (N.T.U.A.), and local authorities. The vision was to create a multi-functional space that preserves Lavrion's industrial heritage while promoting technological research, education, and cultural activities.
- **Goals:** The primary goals were to stimulate regional development, create job opportunities, and enhance the cultural and educational landscape of the area.

Development and Features:

- **Restoration and Preservation:** Significant efforts were made to restore and preserve the historical industrial buildings. These structures were repurposed to house research laboratories, conference halls, museums, and cultural centers. The reservation of the architectural and industrial heritage of Lavrion was a central aspect of the transformation.
- **Technological Hub:** The L.T.C.P. serves as a hub for technological research and innovation. It hosts various research institutions, startups, and tech companies, fostering collaboration between academia and industry. The N.T.U.A. has established research facilities within the park, focusing on areas such as renewable energy, environmental engineering, and material science.
- **Cultural and Educational Activities**: The L.T.C.P. also functions as a cultural and educational center. It includes museums that showcase the history of mining and metallurgy in Lavrion, as well as exhibitions on technological advancements. Educational programs and workshops are regularly conducted, attracting students, researchers, and tourists.

Economic and Social Impact:

- **Job Creation and Economic Revitalization:** The L.T.C.P. has generated new employment opportunities in research, technology, and tourism sectors, contributing to the economic revitalization of the region. The park has attracted investments and fostered the development of new businesses.
- **Community Engagement:** The transformation of Lavrion into a cultural and technological hub has engaged the local community, instilling a sense of pride and identity. The park has become a focal point for community activities and events, enhancing social cohesion.

The history of Lavrion's mines is a testament to the region's significant contributions to ancient and modern Greek history. The transformation of the abandoned mining site into the Lavrion Technological and Cultural Park is a remarkable example of successful industrial heritage re-purposing. By blending historical preservation with technological innovation and cultural promotion, the L.T.C.P. has revitalized Lavrion, making it a model for sustainable development and heritage conservation. This transformation highlights the potential for post-industrial areas to reinvent themselves and contribute positively to regional and national growth.

References

[1] https://en.ltcp.ntua.gr/history/

Germany: Hoheward - Top of the Ruhr

by Hernan Flores, DMT-THGA

Hidden in the heart of the Ruhr region lies the Colliery Ewald, a former coal mine that has transformed into a thriving tourist and business destination. With a history dating back to 1872, when it was established by Essen entrepreneur Ewald Hilger, this colliery played a vital role in the industrial rise of Germany. At its peak, Colliery Ewald employed over 4,000 miners, driving productivity after World War II. Though its mining operations came to an end in 2001, the mining historic place Ewald has risen again, this time as a center for heritage, culture, recreation, and economic development.

Colliery Ewald's rich history has been carefully preserved, offering visitors a rare glimpse into the past while highlighting the innovative future of the site. Ewald Industrial Heritage Park allows guests to wander through the preserved mining buildings, such as the iconic Malakow tower and headframes, and learn about the region's deep connection to coal mining (Figure 5). The Herten revue, a multimedia show hosted in the old power station, brings this past to life through a blend of historical footage, interviews, and artistic performances.

Figure 5. Panoramic view of Colliery Ewald (© RVR, 2024).

For a more immersive experience, join one of the guided tours that venture through the old mining facilities (see Map on Figure 6). Get hands-on in the Training Mine, where visitors can explore the conditions, miners once faced and discover the techniques used underground. Towering over it all is Schacht 7 (Shaft 7), an architectural marvel that now serves as both a landmark and event venue.

Figure 6. Map of Europe's largest waste dump landscape in Herten, Germany (© RVR, 2024)

A place to relax, explore, and create new memories: while the Colliery Ewald is steeped in history, it's also a destination for outdoor enthusiasts and festival-goers. The Ewald promenade is perfect for leisurely walks, offering stunning views of the industrial structures. If you're in the mood for a more active adventure, the surrounding biking and hiking trails lead to the nearby Hoheward spoil tip, a former mining dump now transformed into a natural paradise with panoramic views of the Ruhr (Figure 7).

Throughout the year, the site also hosts cultural events and festivals (Figure 7), where the industrial backdrop enhances the atmosphere, creating a one-of-a-kind experience. After a day of exploration, take a break at one of the restaurants or cafés that overlook the historic buildings, blending local cuisine with a taste of history.

Figure 7. Panoramic view of Hoheward spoil tip, current place for outdoor activities, festivals and cultural events along the whole year (Modified from RVR, 2024).

Colliery Ewald isn't just a destination for tourists—it's also home to the innovation and business park, where former industrial spaces have been repurposed for business development. This modern hub fosters creativity, entrepreneurship, and economic growth, showing how old industries can give way to new opportunities.

CoalHeritage Project Now Featured on EGDI Platform

by Andreas Karavias and Pavlos Krassakis, CERTH

The CoalHeritage project is now officially available on the European Geological Data Infrastructure (EGDI) platform. This marks an important development in making Europe's coal mining heritage more accessible. The platform now hosts the geospatial dataset of the project, which includes sites related to coal mining heritage from various countries across Europe.

Users can easily explore these datasets by navigating to Mineral Resources > Mines > CoalHeritage within the EGDI portal (Figure 8). The spatial data provide detailed information on coal mining sites, allowing for an interactive exploration of their historical and cultural significance.

We extend our thanks to the EGDI team for their valuable support in hosting and making this important data available to a wider audience.

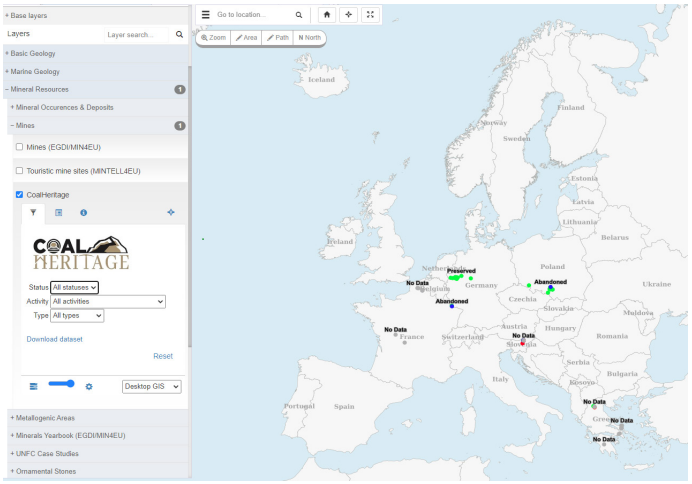

Figure 8. Screenshot of the Coalheritage geospatial data hosted in the EGDI platform.

To explore the CoalHeritage project and its geospatial data, visit the EGDI portal: https://maps.europe-geology.eu/#baslay=baseMapGEUS&extent=-58107.189189189114,1155970.0000000002,8563087.189189188,5309410

This addition to the platform supports the project's mission to preserve and promote Europe's rich coal mining heritage through accessible and comprehensive data.

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