

COAL HERITAGE

RFCS Accompanying Measure Project

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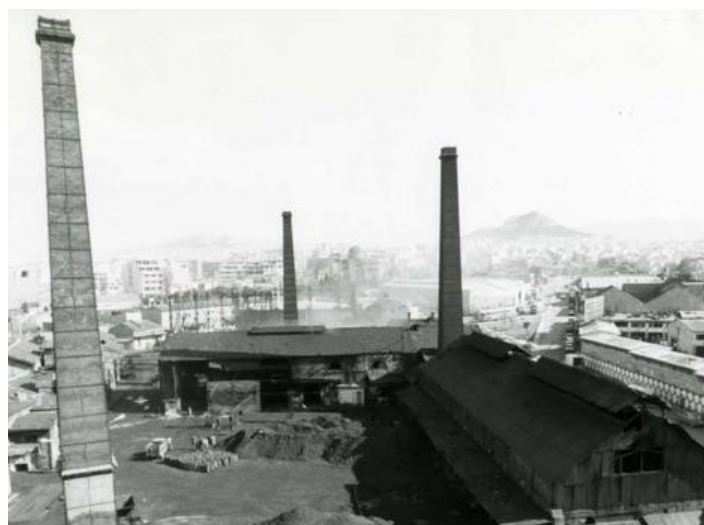
BEST PRACTICES IN COALHERITAGE PROJECT

Climate change and the need to reduce CO₂ emissions have subsequently led to the development of strategies for the decarbonisation of the energy sector by the EU, aiming for reductions of at least 53% by 2030 and 93% by 2050, rendering the transition out of coal for coal-intensive countries and regions inevitable. The issue of the management of these regions in general, including the mines, buildings, and equipment (movable and immovable) arises in particular by the transition after the stopping the coal production. Although this can be a very challenging task, it is also an opportunity to showcase the importance of these mining/industrial sites by converting and promoting them as sites of cultural heritage, and in particular coal and industrial heritage. An aspect to ensure the successful conversion is the engagement of the local (primary) stakeholders (including the public).

GREECE: Industrial Gas Museum (Athens)

by George-Orion Marias and Dan-Cezar Dutuc, CERTH

In 1857, French businessman, François Théophile Feraldi, had the idea of building a small gas plant in the city of Athens which would use gas from coal to lighten up the city's streets. His idea flourished, resulting in the city using this source of energy for street lighting for the following 60 years. The technological and mechanical improvement that took place in the year 1887 by Giovanni Battista Serpieri's administration had as a result the expansion of use of gas in homes and factories. The gas plant complex changed its ownership becoming property of the city of Athens in 1938. With the end of WW2, the use of gas experienced a huge decline in terms of demand and usage due to the introduction of new energy forms such



Photograph of plant's central courtyard (view between 1978-1981, source Archives of George Machairas (30/11/2012))



Current view of the plant's central courtyard with its illuminated chimneys. (source, studio kominis, <https://gasmuseum.gr/en/history-and-collection/>)

as electricity. In 1984, the retorts ceased operation and in 1986, the Ministry of Culture declared the site a listed historical monument. The first artistic events hosted on the gas plant complex ground took place in 1999 and since then it has hosted numerous activities. The Industrial Gas Museum opened its doors in 2013 aiming to raise public awareness on industrial history, further social inclusion and promote inclusive education for schools and individuals through educational programs, representing for the past 10 years one of the capital's most famous cultural sites. In addition, the museum is part of the European Route of Industrial Heritage (EIRH), a network of tourist information of the European Industrial Heritage that counts more than 2,000 sites and 300 members in 29 countries.

POLAND: Guido Coal Mine

by Kamil Szewerda, KOMAG

Formerly: Guido Historic Coal Mine, today: a closed hard coal mine being a part of Coal Mining Museum in Zabrze (<https://muzeumgornictwa.pl/>).

HISTORY (translation of parts of the elaboration available at <https://kopalniaguido.pl/historia>). The mine was founded by Count Guido Henckel von Donnersmarck, who received the mining grant on 2 October 1855, and the established facility was named after him. The Guido Mine's mining field was then 1.03 km². Earlier drilling in the area suggested that this mining field would be rich in coal deposits, as was the nearby state-owned Queen Louise mine (Königin Luise Grube). Count Guido Henckel von Donnersmarck hoped to obtain coal with coking properties when he built the new mine.

In 1885, a record amount of coal was mined in the history of the mine: 313,000 tonnes, but due to the generally low profitability in the same year, Count Guido began the



The Guido Coal Mine together with Sztolnia Królowa Luiza (Queen Luiza Adit) have attractive educational offer (educational trips).

process of selling the mine to the State Mining Treasury of Prussia (Königlich - Preussischer Bergfiskus), known as Fiskus. From then on it was state property. It was incorporated as the Southern Field in the state-owned mine "Królowa Luiza" (Queen Louise).

At the beginning of the 20th century, water from the excavations of the Guido Mine was used to generate energy by launching an underground hydroelectric power plant.

In the first years of the 20th century, south of the "Guido" mine, a new mine "Delbrück" ("Delbrückgrube" - later the "Makoszowy" mine) was built, extracting coking coal. A coking plant was built next to it. In 1904, the workings of both mines were connected underground, and in 1912 the "Guido" mine was formally incorporated into the "Delbrück" mine.

In 1962, the Guido shaft became inoperative by a decision issued by the District Mining Office in Gliwice. In 1979, this shaft was backfilled to the level of 170 meters. On the other hand, the railway shaft lost its function as a downhill shaft and until 1967 it was used only for lowering materials necessary for the work of miners and wood for the construction of the support.

In 1967, the area of the former Guido Mine was transferred to Zakłady Konstrukcyjno-Mechaniczne Przemysłu Węglowego (Construction and Mechanical Plants of the Coal Industry). The M-300 Experimental Mine was established on its premises, the main task of which was to test new mining machines and equipment. During operation, the M-300 Mine excavated the remains of seam 620 at the 400-metre level. In 1975, the former Southern Field of the Królowa Luiza Mine was transferred into the hands of the KOMAG Central Design and Construction

Centre.

In 1982, an agreement was signed between the director of the M-300 Experimental Mine and the Coal Mining Museum in Zabrze, which was then represented by Krystyna Barszczewska. According to the provisions of the contract, part of the excavations was to be adapted for the purposes of an underground open-air museum.

In the same year, "Guido Open-Air Mining Museum was created at level 170, open to the public, and then entered into the register of monuments. In 2000, on the



The main point of the 170 level is St. Barbara's chapel, which is a great attraction in religion-related tourism. Religious ceremonies are held there.

wave of lowering costs at all costs in the coal industry, the dismantling of a unique, underground mine, which could be visited, began. However, the involvement of many institutions, primarily the municipal government of Zabrze, the Marshal's Office of the Silesian Voivodeship and private individuals, led to the suspension of liquidation activities and the establishment in 2007 of the Historic Mine "Guido" as an independent cultural institution of the City of Zabrze and the Silesian Voivodeship. In the same year, level 170 was reopened to tourists, and a year later level 320. In February 2015, sublevel 355 was opened.

In April 2013, the Guido Mine and the Zabrze Coal Mining Museum were merged into a single institution called the Zabrze Coal Mining Museum.

The Experimental Mine Barbara

by Sylwia Jarosławska-Sobór

At the heart of the groundbreaking CoalHeritage Project stands the Experimental Mine Barbara, a vital partner and the oldest segment of the Central Mining Institute – National Research Institute. It serves as an exemplary model of repurposing coal mine facilities for new and forward-looking purposes.

Established in 1925, the Experimental Mine Barbara became a crucial component of the Central Mining Institute after World War II. Initially conceived in the '20s as the Central Office of Mining Rescue and the Magnetic Observatory, it evolved into a multifaceted research institution.

Initiated by Deputy Director Stanisław Majewski, Eng., and Professor Henryk Czczott, the mine was founded in Pniowiec near Tarnowskie Góry. It started as the Experimental Station and the Central Mining Rescue Station, later renamed the Barbara Experimental Mine and relocated to Mikołów in 1926.

Throughout its history, the mine played a pivotal role in researching methane and coal dust explosion hazards, as well as explosives for the mining industry. Since World War II, it has been a key element of the Central Mining Institute's project, focusing on enhancing safety and

addressing dust and gas hazards prevalent in mines.

Today, the Experimental Mine Barbara stands as the sole old coal mine-based laboratory with underground facilities in Europe. It serves as a unique testing site, equipped not only with surface testing facilities but also specialized equipment, materials, and procedures for large-scale underground research.

With two levels - 30m and 46m underground - the mine offers a diverse range of testing configurations, from new mining solutions on the 30m level to experiments related to explosions on the 46m level. The mine has successfully generated strong dust explosions, including detonations of dust-air mixtures, marking a pioneering achievement in large-scale detonation experiments.

Ongoing research at EM Barbara includes methane explosions, burnings, and innovative projects focused on mining effectiveness, safety, and environmental protection. The underground infrastructure facilitates real-scale testing, making it a world-class facility for experiments with dust and gas explosions.

With modern equipment, experienced personnel, and a commitment to innovation, the Experimental Mine Barbara stands as a unique testing ground. Its applications extend beyond mining, encompassing safety in construction, industrial buildings, public transport, and even venturing into the realm of cybersecurity.

Dive into the depths of innovation with the Experimental Mine Barbara – where history meets cutting-edge research!

More info: <https://lnkd.in/dB3qm8xK>



The Experimental Mine Barbara



SLOVENIA: Coal Mining Museums

by Tadeja Jegrišnik and Matjaž Kamenik, *PREMOGOVNIK VELENJE*



The Coal Mining Museum of Slovenia

The Coal Mining Museum of Slovenia, is the only underground museum in Slovenia, which allows experiences also to disabled, weak-sighted and partially deaf people. In the museum, the visitors will enter the coal mine exactly as the miners did last century, at 160 meter depth, through the Old shaft from 1888, dressed in mining clothes, overcoat, with a helmet on head and with a snack in hand. In the underground tunnels visitors see in an hour and a half a vivid demonstration of how the miners work looked like in the past and how it does today. A story in the museum is created by scenes and puppets of miners who come to life with modern audio-visual equipment, so visitors become acquainted with the mechanisation of the mine in recent decades of the development of Coal Mine Velenje. The visit continues with a ride on the underground railway. At last the audience visit the museum on the surface with an exhibition on the development of coal mining in Slovenia, a coal miner's apartment before 1930, the history of the legendary "jump over the skin" and exhibitions of famous artists. The interesting multimedia story is also available in English, German, Italian and Croatian languages to ensure our foreign guests a perfect experience.

The Zagorje Mining Museum first opened its doors in 1995 to commemorate 240 years of mining in the Zagorje Valley. The Municipality of Zagorje ob Savi is in charge of the preservation of mining heritage, and in 2015, it completed its project of renovation and rejuvenation of the Mining Museum. Since September 2015, the museum boasts new additional interactive content that attracts visitors from all over Slovenia and abroad. The museum's mining heritage collection includes a large number of photographs showing the development of mining in the valley. The museum also houses a collection of tools, rocks and mining equipment that miners used in their work. Right next to the museum there is a collection of heavy mining machinery (locomotive, mining carts etc.) which illustrates the rapid progress of coal mining techniques. A



Velenje Underground Project in the Coal Mining Museum of Slovenia

great attraction is the simulated tunnel, which displays the development of the shaft supports and the coal mining technique. Visitors can also view a multimedia projection about mining in the Zagorje Valley.

This is the first museum in Slovenia that is designed interactively, meaning that the visitors can view it on their own with the help of smart phones.

More photos of Mining Muzej Zagorje:
<https://www.rudarski-muzej-zagorje.si/>



The Zagorje Mining Museum

FRANCE: Wendel Mine Site and Lewarde Mining Center History

by Laurent Beccaletto, *BRGM*

As the spatial consequences of three centuries of industrialization, the transformations undergone by the landscape are particularly visible in the coal mining areas, and France is no exception.

From the 1970s onwards, people started to think about preservation of what is now considered as legacy to be valued within the framework of the conversion process. Long treated with disdain, destroyed or in ruins, industrial buildings became the subject of a new academic discipline called "industrial archaeology" and were recognized, like ancient monuments, as historical testimonies that needed to be preserved. Two sites bear witness to this successful



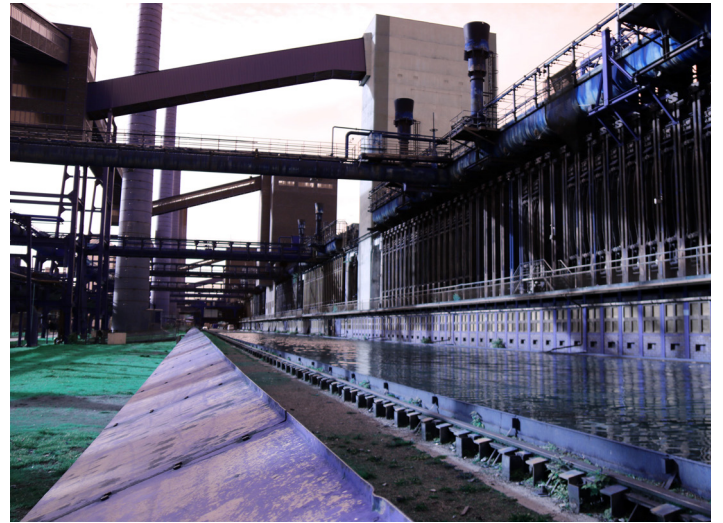
GERMANY: Zollverein Coal Mine Industrial Complex

by Hernan Flores and Tansel Dogan, THGA

The Zollverein Coal Mine Industrial Complex, located in Essen, Germany, is a former coal mine that stands as one of the most significant industrial heritage sites globally, designated as a UNESCO World Heritage Site in 2001. During its active industrial period from 1851 to 1986, the Zollverein Coal Mine Industrial Complex was the largest coal mine in the world, with the largest coking plant in Europe.



The Parc Explor Wendel is now part of the European Route of Industrial Heritage (ERIH), co-funded by the Council of Europe



transition, and will be the French case studies for Coal Heritage.

A policy to preserve mining heritage has developed in Lorraine area, where several headframes have been preserved and, most notably, the Wendel Mine Site (Petite Rosselle), classified as a historical monument. Converted into a mining museum, which opened in June 2006, it is part of a large cross-border project developed in cooperation between the Forbach Agglomeration Community, the State of Saarland, and the city of Saarbrücken. This project, called the "Development Park of the Rosselle Valley," aims to rehabilitate, enhance, and convert the mining and industrial heritage of the Saar-Lor-Lux coal basin.

The conservation and protection of mining heritage have also developed significantly in the Nord-Pas-de-Calais coal basin, where the Lewarde Mining History Center was created, even before the closure of the last coal mine in 1990. There are also several other mining museums in places like Anzin, Noeux-les-Mines, or Bruay Labuissières, as well as mine sites arranged for visits, such as in Oignies. All of these sites have been preserved and classified as historical monuments with its listing in 2012 as a UNESCO World Heritage site under the category of "evolving and living cultural landscape".

In these two places, and in many others in smaller coal-mining regions, cultural (e.g. industrial) and natural (e.g. geological) heritage have a prominent place.





Today, Zeche Zollverein has been repurposing into a cultural and recreational center. The site is home to the Ruhr Museum, offering insights into the industrial history of the region. Additionally, the area features contemporary art exhibitions, restaurants, and hosts various events. Notably, the 21st Abandoned-Mining Colloquium "Altbergbaukolloquium", organized by our partner from the Post-Mining Research Center at the THGA, was recently celebrated in one of the complex halls of Zollverein. The event attracted around 500 participants with diverse expertise, engaging in discussions on the future post-mining landscape and further developments in post-mining opportunities.

The Zollverein Coal Mine Industrial Complex serves as a testament to how coal heritage can be preserved and adapted for modern uses.

Designed by the Bauhaus-influenced architects Fritz Schupp and Martin Kremmer, the site's iconic structures include the pits, coking plants, railway lines, pit heaps, miner's housing and consumer and welfare facilities.

References

Zollverein, 2023. Available online:
<https://www.zollverein.de/>

Coal Heritage Partners and Members

ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS (CERTH, Greece)

- Dr. Nikolaos Koukouzas: koukouzas@certh.gr
- Dr. Theodoros Zarogiannis: zarogiannis@certh.gr
- Ms. Ioanna Badouna: badouna@certh.gr
- Ms. Eleonora Manoukian: manoukian@certh.gr
- Ms. Rania Karametou: karametou@certh.gr
- Mr. George S. Maraslidis: maraslidis@certh.gr
- Mr. Stratos Giouvanidis: ef.giouvanidis@certh.gr
- Ms. Eleftheria Karampetsou: karampetsou@certh.gr
- Ms. Evangelia Zygouri: zygouri@certh.gr
- Mr. Pavlos Krassakis: krassakis@certh.gr
- Mr. Andreas Karavias: karavias@certh.gr
- Mr. Dimitris Karapanos: karapanos@certh.gr
- Dr. Georgios-Orion Marias (Editor): g.marias@certh.gr
- Mr. Dan-Cezar Dutuc (Editor): dutuc@certh.gr

INSTYTUT TECHNIKI GORNICZEJ KOMAG (KOMAG, Poland)

- Dr. Kamil Szewerda: kszewerda@komag.eu

- Dr. Dariusz Michalak: dmichalak@komag.eu
- Dr. Jarosław Tokarczyk: jtokarczyk@komag.eu

PREMOGOVNIK VELENJE (PV, Slovenia)

- Ms. Tadeja Jegrišnik (Editor): tadeja.jegrisnik@rlv.si
- Mag. Matjaž Kamenik: matjaz.kamenik@rlv.si

BUREAU DE RECHERCHES GEOLOGIQUES ET MINIERES (BRMG, France)

- Dr. Laurent Beccaletto: l.beccaletto@brgm.fr
- Dr. Christophe Didier: c.didier@brgm.fr

GLOWNY INSTYTUT GORNICTWA (GIG, Poland)

- Dr. Weronika Pojoy Guzman: wpojog@ig.gig.eu
- Dr. Robert Hildebrandt: rhildebrandt@gig.eu
- Dr. Sylwia Jarosławska-Sobór: sjaroslawska@gig.eu

DMT-GESELLSCHAFT FUR LEHRE UND BILDUNG MBH (DMT-THGA, Germany)

- Dr. Tansel Dogan: tansel.dogan@thga.de
- Mr. Hernan Flores: Hernan.Flores@thga.de

CONTACT AND CONNECT

E-mail: coalheritageprojecteu@gmail.com

QR codes for Social Media Channels:

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