

PROTECTION OF POST-INDUSTRIAL CULTURAL HERITAGE. A TASK FOR SMART SOCIETIES

Ryszard MARSZOWSKI^{1*}, Robert HILDEBRANDT²

¹ Central Mining Institute, National Research Institute, Katowice; rmarszowski@gig.eu,
ORCID: 0000-0002-2855-7121

² Central Mining Institute, National Research Institute, Katowice; rhildebrandt@gig.eu,
ORCID: 0000-0001-5700-166X

* Correspondence author

Culture – this is what remains when you
forget everything you have learned.
S. Lagerlof

Purpose: In the cognitive space of the article, an important and significant social challenge arises, which is the preservation of cultural heritage in transformed post-industrial areas.

Methodology: the theses presented in the article were verified using the following methods: literature review, critical analysis of literature, analysis and comparison of documents and an example of good practices.

Result: the literature research confirms that the protection of cultural heritage is an important factor in socio-economic development. By preserving and using cultural heritage, the economic, cultural and social value of transformed post-industrial areas can be increased.

Originality: The literature research confirms that the protection of cultural heritage is an important factor in socio-economic development. By preserving and using cultural heritage, the economic, cultural and social value of transformed post-industrial areas can be increased.

Keywords: heritage, industry, society.

1. Introduction

Preserving post-industrial cultural heritage is one of the most important tasks for societies that want to remember and cherish their history and heritage¹. Post-industrial areas are not only monuments, but also important cultural and artistic sites that attract tourists and become an important element of regional development. The cultural heritage associated with mining is

¹ The article was financed as part of the project implemented by GIG PIB "Preservation and promotion of coal mining heritage as the cultural heritage of the European Union" financed by the Coal and Steel Research Fund (<https://coalheritageproject.eu>).

first and foremost an important part of our country's history and culture. However, due to continuous technological advances and changing trends in the economy, many mines are being decommissioned, which may result in the loss of cultural heritage. Therefore, the preservation of industrial monuments and intangible heritage related to mining is extremely important for preserving the cultural identity of regions and passing on knowledge of history and tradition to future generations.

A key determinant of heritage preservation is a wise society perceived as a group characterized by a high level of social awareness and responsibility toward each other and the environment in which they live. It is a society that prioritizes values such as honesty, solidarity, respect for diversity, dialogue, openness and tolerance. A wise society is able to effectively solve problems and conflicts, and act in a sustainable and responsible manner, taking into account the interests of present and future generations. A wise society cares about the development of its members, providing education, health, security and equal opportunities, while respecting individual privacy and freedom. In such a society, every person has the opportunity to express his or her views and participate in public life, which contributes to increasing civic engagement and strengthening democracy (Dudzik, 2017).

Through the preservation and use of cultural heritage, the economic, cultural and social value of transformed post-industrial areas can be increased and the sustainability and success of this process requires the involvement of society and local and regional authorities. The preservation of cultural heritage in transformed post-industrial areas is therefore an important aspect of socio-economic development (Ifko, Stokin, 2017). In this perspective - which we particularly emphasize - a wise society is a key factor in preserving cultural heritage. High social awareness and civic responsibility are qualities that allow a society to understand the importance of cultural heritage and to pass it on. A wise society realizes that cultural heritage is not only an element of culture and history, but also an asset for future generations - and therefore takes active measures to protect and preserve it (Kowalik, 2018).

2. Definitions describing the preservation of cultural heritage

The term "cultural heritage" has its origin in Latin. The Latin word "patrimonium" originally meant heritage received from a father or ancestors. Today, the word "patrimonium" is used in Italian and Spanish. In contrast, the English language has the term "heritage", which is used to describe cultural heritage and is derived from French and Old English – and means inheritance or legacy (Etymology..., 2011).

Expanding the space related to defining the term "cultural heritage", it is worth noting that it was first formulated in the early 20th century by French thinkers who began to draw attention to the need to protect national heritage from disappearing. French writer Prosper Mérimée was

one of the first to take action to protect France's monuments and cultural heritage. He was appointed inspector of monuments in 1837, which allowed him to inventory and protect many French monuments, including Notre-Dame Cathedral in Paris. Today, the term "cultural heritage" is widely used around the world and refers to various cultural elements, such as architectural monuments, works of art, handicrafts, music, literature, rituals and traditions. As has already been noted - the term in Latin emphasizes that cultural heritage is passed down through generations and forms the basis of national heritage, which should be protected and passed on to future generations (Chojecka, 2015).

In other terms, cultural heritage preservation is the process of protecting, conserving and managing monuments, works of art, traditions and other cultural elements that have historical, artistic, scientific or social value. Preservation of cultural heritage is aimed at protecting it from destruction, disappearance or oblivion. This activity includes not only monuments and works of art, but also local cultures, traditions, languages, rituals and beliefs. It is associated not only with issues of physical preservation, but also education, promotion and development of public awareness of cultural values. Preserving cultural heritage requires the cooperation of various institutions, organizations and local communities, which should work to protect it and preserve it for future generations (UNESCO, 2018).

3. Preservation of cultural heritage and its main objectives

Preserving cultural heritage is crucial for future generations, as it allows us to pass on the rich history, heritage and culture of our ancestors. These activities should be carried out at different levels depending on the tangible or intangible nature of the cultural value. Respect for cultural heritage determines the activities through which the tangible elements of culture will not be destroyed, lost or forgotten. There are various threats that can affect cultural heritage. These can include climate change, natural disasters, human activity, wars, inappropriate use of monuments, and lack of public interest and awareness in protecting cultural heritage. All of these factors can lead to the destruction of monuments and works of art, as well as the loss of knowledge and skills that were essential to their creation. In order to pass on cultural heritage to future generations, it is necessary not only to preserve it physically, but also to protect and develop public awareness of cultural values (Dąbrowski, 2012). Proper management of monuments, education and promotion of culture, as well as preservation of local traditions and languages are important elements of the process of preserving cultural heritage. In this way, mankind can benefit from cultural wealth and heritage, and understand the history and traditions of their country or region.

As indicated above, the preservation of cultural heritage is crucial to transmitting cultural wealth to future generations and protecting the historical, artistic and scientific values of monuments, works of art and local cultures (Murzyn, 2016). In addition, the preservation of cultural heritage also has a positive impact on social and economic development. Cultural tourism associated with visiting monuments, museums and other sites, contributes to income generation, job growth and improved tourism infrastructure. It is worth emphasizing that tourism should be carried out in a sustainable manner to avoid negative effects on cultural heritage and the environment.

Modern technology also plays an increasingly important role in the process of preserving cultural heritage (Cetera, 2022). Digitization and digital models of monuments make it possible to accurately represent their appearance and structure, and make it easier to access information about their history and significance to a region. Virtual tours of monuments and museums allow people to discover their rich history and art without having to travel long distances. Digitization and digital models are increasingly important tools in the process of preserving cultural heritage. One of the most important tools of digital technology in the process of preserving cultural heritage is laser scanning. This technique makes it possible to accurately represent monuments in a three-dimensional model that can be used for educational, scientific and reconstruction purposes. Laser scanning is particularly useful for monuments that are difficult to access or require special safeguards, such as sites of cultural significance or objects located in danger zones. Another tool of digital technology in the heritage preservation process are digital models, which allow the examination and analysis of monuments without touching them or exposing them to damage. Digital models can also be used to create virtual exhibitions or for educational purposes.

Another tool of modern digital technology used in the process of preserving cultural heritage is virtual tours, or interactive virtual tours of monuments or museums. Virtual tours allow people to remotely explore and understand cultural heritage and discover its history and art without having to leave home. This modern type of tour developed especially during the pandemic era, when it was not possible to physically visit monuments or museums.

It is also worth noting that modern digital technology also creates new opportunities in the field of reconstruction and conservation of monuments. Through the use of techniques such as 3D printing, it is possible to recreate damaged or destroyed elements of monuments, allowing them to be rebuilt as authentically as possible. Digital technology also makes it possible to accurately analyze and study monuments and their surroundings, allowing for a better understanding of their history and significance. When using digital technology, it is worth remembering that it cannot replace real monuments or museums. Digital models and virtual tours complement, but do not replace, real cultural sites. Therefore, preservation of cultural heritage requires proper planning and management, as well as broad public participation (Culture..., 2021). It is important that the process of cultural heritage preservation be conducted in a sustainable manner and tailored to the needs and capabilities of the community. Appropriate

planning and approaches by decision-makers, as well as broad public participation, are key to the success of the cultural heritage preservation process.

In conclusion, the preservation of cultural heritage is important for the transmission of historical, artistic and scientific values to future generations, and has a positive impact on social and economic development. Therefore, the preservation of cultural heritage should be treated as a priority issue both locally and globally (Szot-Radziszewska, 2009).

4. Cultural heritage and transformation of post-industrial areas

In the past, industry was a fundamental element of economic development, but its development did not always go hand in hand with the preservation of cultural heritage (Janikowski, Krzysztofek, 2009). The transformation of post-industrial areas, such as steel mills and mines, was associated with the disappearance of the cultural heritage of these places. Old buildings, traditions or customs associated with the industry were disappearing. Thus, the process of industrial modernization contributed to the destruction of cultural heritage, which is an integral part of the history of these places. In this light, it is important to remember that preserving cultural heritage in transformed post-industrial areas involves a number of challenges. The first is the complexity of cultural heritage due to the fact of the rich history of these regions not only in terms of industrial activity itself, but also in terms of culture, traditions and customs. Many of these sites also have symbolic and emotional value for local communities. In this context, the preservation of cultural heritage in post-industrial areas requires consideration of many cultural, social and economic aspects.

The second challenge is to change the function of post-industrial areas into places attractive to tourists, cultural centers, recreational spaces or offices. In such a context, it is important that while preserving the cultural heritage, the needs of the new users of these places are not forgotten, while at the same time their original character and value to the local community is not lost. Another challenge is the dangers of neglecting heritage sites. Post-industrial areas are being destroyed and devastated. Often, these are forgotten places that require a huge amount of money and work to preserve them for future generations. It is important to take appropriate steps to protect these places from destruction.

Preservation of cultural heritage in transformed post-industrial areas brings many benefits to society (Nilson, Thorell, 2018). First, the preservation of cultural heritage contributes to the economic value of these places. Such places attract tourists who are eager to visit places with rich history and culture. This translates into increased employment and income for local residents.

Preserving cultural heritage in transformed post-industrial areas contributes to the preservation of cultural identity. By preserving cultural heritage in transformed post-industrial areas, the unique identity of places and their residents can be preserved. Third, preserving cultural heritage in transformed post-industrial areas contributes to the development of local communities. Thanks to such places, people have the opportunity for joint activities and interactions. Many of these places become centers of culture and social development, attracting people with different interests and skills.

In order to preserve cultural heritage in transformed post-industrial areas, it is important to take appropriate steps (Konior, 2021). First, it is important to conduct a comprehensive analysis of the cultural heritage of these sites. Second, it is necessary to take into account both industrial and cultural aspects, traditions and customs.

It is important to use the cultural heritage in transformed post-industrial areas in an appropriate way. Appropriate ways should be found to use these sites so that they are user-friendly, and at the same time, retain their cultural and historical character, while being properly protected from damage and devastation. There are many ways to protect cultural heritage, such as designating protection zones, carrying out conservation and restoration work, and ensuring that heritage sites are properly supervised. Another important aspect is the education and promotion of cultural heritage through the organization of cultural events, exhibitions and other activities to raise awareness of its cultural and historical value.

In addition to the above-mentioned activities, the preservation of cultural heritage in transformed post-industrial areas requires cooperation between various representatives of public life.... It is important that local authorities, NGOs, local communities, as well as representatives of industry and business participate in the process of cooperation. Cooperation between these representatives could contribute to finding innovative solutions that will allow the use of cultural heritage in transformed post-industrial areas in a way that is beneficial to all concerned.

An excellent example of an action aimed at preserving cultural heritage in the space of a transformed post-industrial area is the project entitled CoalHeritage (Preservation and promotion of coal mining heritage as EU cultural heritage). Implementation of the project will last from 2023 to 2025. The project will be implemented in a consortium of the following partner institutions: Ethniko Kentro Erevnas Kai Technologikis Anaptyxis - Greece, Komag Institute of Mining Technology - Poland, Central Mining Institute - Poland, Premogovnik Velenje Doo - Slovenia, Bureau De Recherches Geologiques Et Minières - France and Dmt-Gesellschaft Fur Lehre Und Bildung MBH - Germany. CoalHeritage aims to develop an interregional network for the protection and promotion of coal mining heritage in post-mining areas. The project partnership, after identifying, inventorying and valorizing the assets of the selected mines, will develop a strategy for their preservation based on best practices - and identify the processes necessary to qualify a coal mine as a national heritage, and then develop a European Visual Map Journal for coal heritage as an intangible asset.

The key activities leading to the project's goal, the European Journal of Visual Maps for Coal Heritage as an Intangible Asset, are:

- to describe the current state of mining heritage in Europe,
- developing a clear and standardized method for inventorying the management processes of movable and immovable mine assets,
- implementation of a web-based geographic information system that will inform a wide audience about coal heritage.

Coal Heritage (Preservation and promotion of coal mining heritage as EU cultural heritage) is an activity aimed at developing an interregional network for the protection and promotion of coal mining heritage in post-mining regions. The project partnership, after identifying, inventorying and valorizing the assets of the selected mines, will develop a strategy for their preservation based on best practices and define the processes needed to recognize the mines as national heritage.

The project perspective described above corresponds perfectly with the local action entitled "Łażna Moszczenica" implemented in the city of Jastrzębie-Zdrój. "Łażna Moszczenica" is a multifunctional post-industrial space created in the building of a former mining bathhouse and the main brand of a public cultural institution called "Institute of Heritage and Dialogue - Łażnia Moszczenica". The main building of the bathhouse is the carbonarium. It is a permanent exhibition about the history of coal - from the element, through its use in industry and the role coal played in the history of the city of Jastrzębie-Zdrój. The exhibition presents the uses of coal in the world of science, addresses the topic of mining transformation and ecological ways of using coal. The exhibition allows visitors not only to read and see the history of coal, but also to feel and discover for themselves the content that stays in the memory for longer. The reconstruction of the old bathhouse began in 2021, 20 years after the liquidation of the Moszczenica hard coal mine.



Figure 1. Łażnia Moszczenica before reconstruction.

Source: Photograph by Aneta Czarnocka-Kanik, Radosław Kaźmierczak.

The project is implemented in cooperation with Dolní Vitkovice, which is located in the administrative territory of the city of Ostrava in the Czech Republic. In the future, in Łażnia Moszczenica, the Jastrzębie Understanding Center and business and entertainment space will

be built (Neja, Kurpierz, 2013). The city of Jastrzębie-Zdrój has a secured own contribution for the implementation of the "Łaźnia Moszczenia" measure in the amount of PLN 14 million 47 thousand 710, which constitutes 36.63% of the implementation costs of the entire project.

5. Preservation of cultural heritage in social and economic space

Cultural heritage is our legacy, that which is left behind by our ancestors and which is the foundation of our culture and national identity. The preservation of cultural heritage is extremely important because it preserves our history, traditions and values, and passes them on to future generations. However, preserving cultural heritage is a task - as noted in the introduction to the article - for wise societies that realize its value and importance (Kobyliński, 2011).

One of the key ways to preserve cultural heritage is to protect and conserve it. Monuments, works of art and other elements of cultural heritage are exposed to many factors, such as aging, erosion, theft and vandalism. Proper conservation and protection of monuments is therefore crucial to preserving cultural heritage. Preservation of virginity can include its repair, restoration and maintenance to keep it in the best possible condition. Protection, on the other hand, involves ensuring that the heritage is properly supervised to prevent damage or theft. Another important aspect of preserving cultural heritage is, as mentioned earlier, its digitization. Through digital models and archives, cultural heritage items can be made available online and passed on to future generations, while being protected from destruction. Digitization allows monuments to be recreated virtually, and information about their history, significance and context can be made available.

Another important way to preserve cultural heritage is the education of the public, mentioned earlier. Knowledge of cultural heritage allows it to be better understood and appreciated. Education on cultural heritage can be carried out in schools, museums or cultural centers. Through education, the public is more aware of the importance of cultural heritage and more willing to protect it (Odoj, 2012).

All of these ways to preserve cultural heritage require the involvement of the public. It is the people who create cultural heritage, and it is they who should be vigilant about its preservation. The public should be active in heritage preservation, get involved in digitization and education projects, and support cultural institutions and museums. Another important aspect of preserving cultural heritage is its promotion. Societies should encourage people to learn about and respect their cultural heritage, and to share it with others. This will allow it to be further revived and developed, as well as passed on to future generations.

In conclusion, preservation of cultural heritage is not only a matter of protecting historical monuments and traditions, but also a key aspect of forming national and social identity. By respecting and cherishing cultural heritage, societies can build their identity, while also contributing to the preservation and promotion of culture and history for future generations (Hausner, 2013).

Preserving cultural heritage in economic space is an extremely important challenge for modern societies. Increasing economic development and growing social needs put the future of many cultural heritage sites in question. At the same time, cultural heritage represents not only historical and cultural wealth, but also economic wealth, so the proper preservation and use of it in economic space is not only an ethical issue, but also an economic one (Nocca, 2017). One of the most important aspects of preserving cultural heritage in economic space is its proper management. Cultural heritage management requires planning, coordination and implementation of activities aimed at protecting, preserving and making cultural heritage available for future generations. Proper management makes it possible to increase the potential of cultural heritage in the economic space, and thus its use for tourism, education or cultural purposes. An equally important aspect of preserving cultural heritage in the economic space is its sustainability. Sustainable development of cultural heritage means its development, which simultaneously takes into account economic, social and environmental aspects. The proper use of cultural heritage can benefit the local community, contribute to improving the quality of life and attract tourists, which can consequently increase tourism and culture-related revenues.

As has already been noted - in the era of digitization and technology development, digital tools are playing an increasingly important role in preserving cultural heritage in the economic space. Thanks to them, it is possible to digitize, share and promote cultural heritage on the Internet, which allows it to reach a wider audience. The introduction of digital tools makes it possible to increase the accessibility of cultural heritage and popularize its value, which contributes to increasing interest in it among a wide audience.

Despite the many challenges facing the task of preserving cultural heritage in the economic space, there are many positive examples of measures taken to preserve it. One example is the growing cultural tourism, which is becoming an important source of income in many regions of the world. At the same time, it should be noted that the development of tourism can lead to the destruction of cultural heritage, so it is necessary to introduce appropriate rules and regulations to protect monuments and other important elements of cultural heritage (Pacelt, 2014).

Another way to use cultural heritage for economic purposes is to adapt it for new purposes. A good example is factories and warehouses adopted as art galleries, museums, or commercial premises. Such adaptation of objects to new functions can contribute to the preservation of cultural heritage and at the same time use it for the needs of modern communities. Another example could be cultural heritage restored or preserved for educational purposes. For example,

the establishment of ethnographic parks and museums, open-air museums that show traditional ways of life and work of people from different regions of the world. Such museums are important because they allow the preservation and presentation of elements of cultural heritage that are in danger of extinction. At the same time, they are a valuable source of education for younger generations, who can learn about the history of their country and understand the culture of other nations.

In conclusion, one of the most important methods of preserving cultural heritage in the economic space is education and developing public awareness. People should realize the value of cultural heritage and its importance in forming national and cultural identity. By increasing social awareness and education, people will be more inclined to act to preserve cultural heritage (Poland's Cultural Wealth, 2020).

Another aspect worth emphasizing in the context of preserving cultural heritage in economic space is corporate social responsibility (Fordhem, 2018). Many companies operate in areas where there are important monuments or places of historical significance. In such situations, companies should act responsibly, respecting cultural heritage and taking care to protect it. It is worth noting that taking such actions not only positively affects the company's image, but also allows to create positive relations with the local community and increase employee involvement. Finally, a key element of preserving cultural heritage in the economic space is - repeatedly mentioned in the article - education. Knowledge of cultural heritage and its importance should be taught not only in schools, but also in companies, organizations and institutions involved in tourism or culture. In this way, the local community, tourists and employees will have a better understanding of the importance of cultural heritage and be more committed to its protection and preservation. Preserving cultural heritage in economic space is a task not only for cultural institutions and local authorities, but also for businesses and entire communities. A key element in this area is cooperation action in partnership, as well as corporate social responsibility. Only in this way, can cultural heritage be effectively protected and preserved for future generations.

6. Preservation of cultural heritage in the decommissioned mining space

Preserving cultural heritage in the decommissioned mining space is a significant challenge for local communities and municipal authorities. Mining over the centuries has played a key role in the development of many regions, and the remains of this activity are not only important industrial monuments, but also places of religious worship, tradition and intangible heritage. Mining has been one of the key industries for centuries, generating huge profits and attracting people from different regions and cultures. However, the end of mines has often meant the

closing of one chapter in history and the opening of a new one, in which this cultural heritage associated with mining becomes one of the most important elements.

Mining, as an industrial phenomenon, left behind a material heritage in the form of mines, shafts, machinery, installations and other equipment and buildings related to the extraction of natural resources. Along with tangible heritage, mining also had an impact on the creation of intangible heritage in the form of traditions, religious worship and cultural heritage. Mining is an important part of the history and identity of many communities, and the traditions and customs associated with it have often survived for centuries (Jelen, 2018). Mining not only influenced the development of industry, but also the creation of precisely cultural and religious heritage. Mines were often centers of social and cultural life, and their decommissioning is associated with the loss of many cultural and historical values. One of the most characteristic elements of cultural heritage associated with mining are the mines' chapels and churches. An example is the Marian Shrine in Górka Klasztorna near Lezajsk, which was built on the site of a former salt mine. There are also numerous chapels and churches in mining towns, many of which were built by miners as votive offerings for rescue from danger underground.

Another important element of intangible heritage related to mining is mining culture. Miners have their customs, traditions, costumes, songs and dances, which constitute a separate branch of culture. Equally important elements of intangible heritage are also the knowledge and skills that have been passed down from generation to generation among miners. These include traditions, beliefs, rituals, as well as a specific culture of language, especially the miners' dialect. In some regions, miners form their own unions and organize sports competitions. Today, many communities are trying to preserve these elements of intangible heritage by organizing festivals, workshops, exhibitions and other events (Fruzyński, 2012).

In Poland, there are many examples of mining-related sites that constitute important cultural and industrial heritage. One of them is the Wieliczka Salt Mine, which is one of the most important monuments of material culture in the world, listed as a UNESCO World Cultural and Natural Heritage Site in 1978. Other examples include the "Guido" Historic Coal Mine in Zabrze, the Gold Mine in Złoty Stok, and the Historic Silver Mine in Tarnowskie Góry. Not only the mines themselves, but also their surroundings and the memories associated with them are an important part of cultural heritage. An example is the traditions and customs associated with mining, such as the celebration of Barbórka, the holiday of the patron saint of miners, St. Barbara, which takes place in December in many mining towns in Poland.

The modern use of former mine sites also has an impact on the preservation of cultural heritage. Often, former mine sites are converted for tourist, cultural or educational purposes. Good examples include the Coal Mining Museum in Katowice and the Old Mine Science and Art Center in Walbrzych. In this area, an example of good practice in preserving cultural heritage related to mining is the Silesian Voivodeship's Technological Monuments Route, which consists of dozens of sites related to the history of mining in the Silesian Voivodeship.

This route not only attracts tourists, but also has an educational function, preserving the memory of the work and daily life of miners.

In the space of decommissioned mining in the preservation of cultural heritage - which once again should be noted with great importance - the key role is played by education and raising public awareness. In this area, educational campaigns and training should be conducted for employees in the tourism and cultural sectors so that they are able to provide adequate care for the cultural heritage associated with the related to mining. It is also important to involve the local community in the process of preserving mining-related cultural heritage. Local residents are an extremely valuable source of mining-related stories and histories and of passing on their knowledge and traditions to the next generation. It should also be ensured that local communities can enjoy the cultural heritage associated with mining so that they can enjoy its beauty and value.

Finally, it is important to make mining-related cultural heritage visible and accessible to all. This requires not only the preservation of the sites themselves, but also the provision of appropriate tourism infrastructure, such as hiking trails, tourist information centers, as well as accommodation and rest areas. In this perspective, the preservation of mining-related cultural heritage is not only important for historical and cultural reasons, but also has the potential to generate economic and social benefits. However, this requires cooperation among various stakeholders and investment in the protection, promotion and accessibility of mining-related cultural heritage (Jelinčić, Glivetić, 2020).

At the same time, the decommissioning of mines associated with socio-economic changes, introduces many difficulties in the process of heritage preservation. An important challenge is the preservation and documentation of the remnants of mining, such as mine buildings, machinery, equipment and tools, but also elements of the cultural landscape, such as pits, dumps, culverts, bridges, roads and canals. Many of these sites are historic and in need of preservation, and their preservation and protection are often a costly challenge for local governments and private investors. In addition, the process of decommissioning mines not infrequently involves environmental problems, such as soil and water contamination, which requires the implementation of appropriate reclamation procedures. In such a situation, the preservation of cultural heritage must be included in reclamation and mining waste handling plans.

In conclusion, the preservation of cultural heritage in the space of decommissioned mining is an important task for society, as it allows for the protection of cultural heritage and the formation of regional and local identity. However, this requires action at both the institutional and social levels, as well as consideration of ecological and sustainable development aspects (Burzyński, 2017).

7. Summary

Preserving cultural heritage in transformed post-industrial areas is an important challenge for modern society. These sites not only have historical and cultural value, but also potential for economic and social development. Therefore, the preservation of cultural heritage in transformed post-industrial areas is not only a matter of heritage preservation, but also of socio-economic development. In the process of preserving cultural heritage in transformed post-industrial areas, it is important to take into account the diversity of cultural heritage and the diverse needs of local communities. Preserving cultural heritage in transformed post-industrial areas is an important challenge, but at the same time it is an opportunity to revitalize these places and use them in a way that benefits society. Cultural heritage can contribute to the development of tourism and cultural activities, as well as inspire new social and business projects (Culture..., 2017).

It is worth noting that preserving cultural heritage in transformed post-industrial areas requires a long-term approach and the involvement of local communities. It is a process that requires time, work and resources, but at the same time brings many benefits to society. Cultural heritage is not only a reminder of the past, but also a forward-looking source of inspiration and development. Nowadays, when many post-industrial sites are undergoing transformation and change, preserving cultural heritage becomes even more important. These sites can be managed responsibly and sustainably, taking into account both their cultural value and their economic and social value. As the preservation of cultural heritage in transformed post-industrial areas is an important challenge, it must be approached with determination and an understanding of its importance for the future of society. Preservation of cultural heritage is an investment in the future that benefits all concerned (Kuzior, 2022).

References

1. Burzyński, T. (2007). *The heritage of industrial culture as an opportunity for the development of European tourism*. Katowice: Upper Silesian University of Commerce, City Hall in Zabrze.
2. Cetera N. et al. (2022). *Digital cultural heritage. How to prepare for digitization and sharing of collections online*. Warsaw: Ministry of Culture and National Heritage.
3. Chojecka, M. (2015). Cultural heritage protection policy in Poland. *Scientific Journals of the Poznań University of Technology. Organization and Management*, 69.
4. Culture and cultural heritage orientation paper. Urban Agenda for the EU 2019.

5. *Culture without borders: Cultural heritage management for local and regional development* Current Affairs Committee. Dourou E. Toce B. Report CG (2021).
6. Dąbrowski, A. (2012). Revitalization of post-industrial facilities on the example of "Manufaktura" - the former Izrael Poznański Plant in Łódź. *Scientific Journals of the WSB University in Poznań*, 42, *Space in New Economic Reality*.
7. Dudzik, I. (ed.) (2017). *The role of ethical values in the modern world. Ethical values of modern man*. Jarosław: Publishing House of the State Higher School of Technology and Economics, priest Bronisław Markiewicz.
8. Etymology of the word heritage (2011). *Sprawia wieki*, No. 5.
9. Fordhem, A.E. et al. (2018). Mapping meanings of corporate social responsibility – an Australian case study. *International Journal of Corporate Social Responsibility*, vol. 3, Article no. 14.
10. Fruzyński, A. (2012). *Outline of the history of hard coal mining in Poland*. Zabrze: Coal Mining Museum.
11. Hausner, J. et al. (2013). *Culture and development*. Warsaw: National Cultural Center.
12. Ifko, S. Stokin, M. (2017). *Protection and Reuse of Industrial Heritage: Dilemmas, Problems*. Monographic Publications of ICOMOS Slovenia I 02. Ljubljana.
13. Janikowski, R., Krzysztofek, K. (2009). *Culture sustainable development. Environment, spatial order, heritage in the light of UNESCO documents and other international organizations*. Warsaw: Polish Committee for UNESCO.
14. Jelen, J. (2018). Mining Heritage and Mining Tourism. *Czech Journal of Tourism*, 7(1), pp. 93-105.
15. Jelinčić, D.A., Glivetić, D. (2020). *Cultural heritage and sustainability. Practical guide: Effective policy for sustainable and self-sustaining projects in the cultural heritage sector, INTERREG Europe project, financed by the European Regional Development Fund*.
16. Kobylińsko, Z. (2011). *What is it, who needs it and who owns cultural heritage?* Mazowsze Regional Studies, pp. 21-47.
17. Konior, A. (2021). Cultural heritage management in the context of the revitalization process of post-industrial areas. *Cultural Management Library*, vol. XXI. Kraków.
18. Kowalik, W. (2018). Social and cultural capital, civil society and socio-economic development - analysis of connections. In: R. Boguszewski (ed.), *Civil society in theory and practice*. Warsaw: SGGW Publishing House.
19. Kuzior, A. et al. (2022). Revitalization of Post-Industrial Facilities in Economic and Socio-Cultural Perspectives—A Comparative Study between Poland and the USA. *Sustainability*, 14(17). pp. 1-15.
20. Murzyn, M. (2016). Cultural heritage management based on values. *Management in Culture*, vol. 17, iss. 3, pp. 195-213.
21. Neja, J., Kurpierz, T. (2013). A breath of freedom (August 1980). In: A. Haas, B. Linek, *Upper Silesia in People's Poland* (p. 35). Opole.

22. Nilson, T., Thorell, K. (2018). *Cultural Heritage Preservation. The Past, The Present And The Future*. Författarna och Halmstad University Press.
23. Nocca, F. (2017). The Role of Cultural Heritage in Sustainable Development: Multidimensional Indicators as Decision–Making Tool. *Sustainability*, 9(10), pp. 1-28.
24. Odoj, G. (2012). Cultural heritage as a key concept of regional education: terminological considerations. *Studia Etnologiczne i Antropologiczne*, 12, pp. 44-55.
25. Pacelt, J. et al. (2014). Józef Piłsudski University of Physical Education in Warsaw Development of cultural tourism while maintaining the principles of sustainable development on the example of the Alicante province in Spain. *Turystyka Kulturowa*, No. 11, pp. 24-37.
26. Poland's Cultural Wealth 2020.
27. Szot-Radziszewska, E. (2009). Post-industrial heritage of the Old Polish Industrial District in the cultural landscape of the Kielce region: threats and opportunities. *Ochrona Zabytków*, 62/4(247), pp. 69-82.
28. UNESCO (2018). *Convention Concerning the Protection of the World Cultural and Natural Heritage*. <https://whc.unesco.org/en/conventiontext>.