

Examples of development of the postindustrial objects from the liquidated mines

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Príklady rozvoja postindustriálnych objektov likvidovaných baní

The paper concerns with the problem of developing of different kind industrial objects and administrative-social buildings, comprising an important part of the surface infrastructure of liquidated mining plants. The regulations of Polish law in the scope of mines' liquidation and their surface building objects management are discussed. The ways of proceeding with this type of objects for chosen hard coal mines on the area of Upper and Lower Silesia are presented together with examples of the development of few postmine objects.

Key words: building engineering, mines' liquidation, development

Introduction

In the beginning of the 1900s the coal industry restructuring process, started in Poland comprising also closures of unprofitable mines. The result of this process is a reduction of the number of operating mines from 71 to 37.

The present paper concerns the possibility to manage various types of post-mine objects on the surface. At the moment a necessity occurs to take suitable decisions and actions with respect to the demolition of these objects or their maintaining and managing. A considerable part of post-mine objects can be adapted to new useful functions. Many objects have historical and technical values and some of them are unique technical monuments. Shaft head gears constitute characteristic elements of the landscape of areas where the mining activity is conducted or terminated. The paper presents Polish law regulations relating to the mine closure and the management of post-mine objects on the surface. Moreover, the paper shows ways to proceed with objects of such a type in the course of closing of several selected hard coal mines in the Upper and Lower Silesia areas and presents examples of the post-mine objects adaptation to new useful functions.

Polish law regulations with respect to proceeding with industrial objects of closed mines

The Polish law regulations determine general rules of proceeding with closed mine objects. The geological and mining law relating to the underground mines closure obliges an entrepreneur to protect or liquidate objects and installations of a mine, as well as to undertake necessary steps to develop areas remaining after the mining activity. The operational plan of a mine designed for the closure should anticipate the way of execution of these obligations. The law regulations provide for agreeing this plan with local authorities, i.e. with the appropriate borough leader of community, mayor or president of city, and such an agreement has the power of a decision. In conformity with the order of the Minister of Internal Affairs and Administration, the operational plan of a mine designed to be closed should determine anticipated changes of the character and consequences of the liquidation of the mine's fundamental objects and installations. The plan should also present way of protection of the objects, installations or workings constituting monuments of material culture. The law on the monument protection and cure of monuments determines the subject, scope and forms of protection of technique's monuments and the care of them. The monument protection obliges also the law on the site planning, determining the rules of creating a special policy of local self-government and governmental units. The demolition or adaptation of post-industrial objects holding a monumental value to new useful functions requires a consent of the monument conservator.

The principles of financial restructuring and employment in mines and the rules of hard coal mines closures has been determined by the law on the hard coal mining restructuring in the years 2003-2006. According to this law, closed mines are taken over by economic subjects specially appointed for that purpose – Mine Restructuring Companies – which further conduct activities relating to the closure and property

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management of these mines. In Poland there exist two economic subjects of such a type – Mine Restructuring Company PLC and Bytom Mine Restructuring Company Ltd, where 100% of shares holds the mine Restructuring Company PLC. The subject of their activities according to the law constitute operations regarding the closure of those mines which already have terminated their production, the management of the closed mines property and the creation of new work places. The management of post-industrial sites is currently one of the most important economic tasks on the national scale. The Council of Ministers has adopted in April 2004 the Governmental Programme for post-industrial sites, including also post-mine sites, the aim of which is to create conditions and mechanisms for the development of these areas, as well as to work out criteria relating to revitalisation priorities.

The ways of proceeding with post-mine objects on the surface - An example of selected mines

The means of proceeding with objects on the surface in the process of hard coal mine closure in Poland and connected problems can be analysed on the example of the Wałbrzych Hard Coal mines, located in the area of Lower Silesia, as well as the mines „Sosnowiec”, „Katowice”, and „Gottwald”, located in the Upper Silesian area.

The Wałbrzych city region is one of the first areas in Poland, where a comprehensive action connected with the entire elimination of mining activity was undertaken. The territory of Wałbrzych city and its surroundings have developed an industrial infrastructure, combined with the centuries-old mining activity. In this region arose numerous mines with drawing shafts and objects localised close to the shafts. Along with the development of hard coal mines, old shafts and objects located close to the shafts were liquidated or extended; also new mines were built. The process of entire elimination of the mining industry in the Wałbrzych region started in 1990, when three mines – „Thorez”, „Victoria”, and „Wałbrzych” – were put into liquidation. One of stages of the mining industry elimination was the merger of these mines in 1993 and a creation of one enterprise named Wałbrzych Hard Coal Mines (WHCM). This enterprise consisted of many industrial areas around shafts located in Wałbrzych and neighbouring communities. Most of the industrial objects of WHCM were demolished. Subject to the liquidation were mainly objects in bad technical conditions and objects, suitable to an adaptation to new useful functions. In agreement with the Provincial Monument Conservator also many damaged monumental objects were torn down. Within the period 1991-99, totally 189 buildings with a total cubature of 481 313 m³ and 134 installations and industrial structures of various types were demolished (Kowalski, 2000), (Płonka, 1999). A part of these objects and post-mine sites was sold to various economic subjects and natural persons, and a part was made over to local self-governments. A complex of structures at the shafts „Julia” and „Sobótka” of the former „Thorez” mine was transformed into the Museum of Industry and Technique (Gerber, 1998). This museum contends with many problems, first of all with a lack of financial means for the maintenance of monumental objects, their renovation and conservation.

Examples of a comprehensive management of the post-mine areas of WHCM constitute the localisation region of the former „Teresa” shaft and the „Chrobry” shafts (Kalisz, 2005). The area of the “Teresa” shaft has been sold to one owner, and the objects on the surface were adopted for a car showroom (Fig. 1).



Fig. 1. General view of the adapted post-mine objects at the “Teresa” shaft.



The objects located in the region of „Chrobry I and II” shafts together with the head gears were sold to various economic subjects and were adopted to the needs of service and production activities (Fig. 2).

Fig. 2. View on the adapted post-mine objects at the „Chrobry I” and „Chrobry II” shafts



An interesting and not typical example of post-mine object management is also the adaptation of the winder building of the liquidated „Krakus” shaft to an apartment building (Fig. 3) (Kalisz, 2005).

Fig. 3. Building of the winder of „Krakus” shaft adapted for an apartment building.

The process of „Sosnowiec” mine closure started in 1996. Most of cubature objects of the steel bearing construction were demolished, including the preparation plant built in the eighties of the 20th century. Only the steel construction of the head gear and shaft inset building of the „Anna” shaft have not been demolished. Also, the building of the winder of „Anna” shaft, a building of the mechanical workshop, main store, series of administrative-social buildings with a bath, gathering room, lamproom and an administration building (Fig. 4) (having historical value building of the main switching station) were maintained (Fig. 5).



Fig. 4. Area of the former „Sosnowiec” mine – head gear of the „Anna” shaft with objects located close to the shaft and the administrative-social building



Fig. 5. Area of the former „Sosnowiec” mine – the building of main switching station.

Most of the maintained cubature objects indicate bad technical conditions; they are devastated to a considerable extent. A fragment of the former mine area was adapted by the newly established Control and Measuring Apparatus Production Plant. A part of the area was taken over by the Katowice Special Economic Zone, and the remaining area part together with the maintained post-mine objects were made over to the Sosnowiec community. This part already is not managed, but the Municipal Office provides for its transformation into an industrial-technological park (Borkiewicz, 2004).

The process of „Katowice” mine closure started in 1999. The programme of the mine closure assumed a demolition of 227 surface objects with the total cubature 378 000 m³ and 625 t of installations and objects with steel construction (Borowy, 1997). However, the programme was modified, among other things because of the development of a traffic node on a part of the post-mine area. Still have been demolished surface objects which are characterised by bad technical conditions and objects which on account of the current destiny were not suitable for the adaptation to a new useful function. Many objects with the steel and steel-brickwork construction were demolished, among them objects of the preparation plant and head gears of the majority of shafts. From surface objects, only social and administrative buildings (from which only a part is used at present) as well as buildings of a monumental character were maintained. They the head gear, the building of the shaft inset, the building of the winder of „Bartosz” shaft as well as the building



of the electrical workshop (Kalisz, 2005). The monumental objects along with their location area constitute since the property of the Silesian Museum in Katowice 1 January 2005. The adaptation of these objects to a new seat of the Museum is planned (Fig. 6).

Fig. 6. Area of the former „Katowice” mine – the general view of the maintained post-mine objects

An industrial example of the adaptation of post-mine objects constitutes the area of the former „Gottwald” mine, which after ceasing its extraction in the seventies of the 20th century was a part of the „Katowice-Kleofas” mine. On the mine area a big commercial and service centre (called Silesia City Center) was established into which the maintained, monumental post-mine objects, (the building of the boiler-room and engine room, building of winder and the head gear of the filled in „Jerzy” shaft) have been successfully incorporated. In the restored building of the boiler-room and engine room have been localised office rooms, art gallery, house equipment salon and a restaurant. The renovated building

of the head gear was adapted for a several objects (the St. Barbara's chapel), and the head gear restored localised in the vicinity will be used as an advertising mast, which constitutes a characteristic point in the panorama of the city (Fig. 7). The industrial part of the localization area of the new commercial and service centre resemble also old mining machines and devices.



Fig. 7. General view of the Silesia City Center with the restored objects of the former „Gottwald” mine

Assessment of realised hitherto methods of proceeding with post-mine surface objects

It results from the current practice in Poland that decisive technical condition as regards the proceeding way with surface objects of closed mines are the value of secondary raw materials which can be recovered and the value of the object as a subject of sale or lease (Czernicki, 1999; Kalisz, 2005). The coal mine closure process with respect to the surface management comprised the following directions of action:

- sale of objects along with the adjacent area, including parts of monumental objects,
- demolition of parts or all objects in the given area and sale of plots for new investment activity,
- lease of objects and terrain,
- making over objects and terrain to local self-governments,
- adaptation of post-mine objects for museum purposes.

A considerable part of maintained post-mine buildings is not adapted and is subject to a gradual degradation. From archival materials results that some demolished buildings were suitable for an adaptation to new useful functions. The buildings sold to firms or natural persons are used chiefly as production and storage objects. This fact causes that the non-adapted part of post-mine terrains is suitable for the management as an industrial area. The problem is an essential one because closed mines are located mainly in strongly urbanised regions, frequently in centers of cities and housing estates where is a lack of recreation terrains and the land for the apartments or commercial-service buildings development.

A number of objects of the cubature building development of closed mines constitute monumental objects or objects of essential architectural, historical or cultural values. An experience relating to the mine closure process in the Wałbrzych region has pointed out that big problems occur in the sphere of management of objects of such a type, especially in the case of their high quantity in the given area. This fact indicates the necessity of adequate selection and demolition of at least a part of these objects, particularly objects that show the worthiest technical condition.

Summary

The site planning of post-industrial areas including post-mine terrains should be conducted on the basis of sustainable development, i.e. in conditions of the integration of political, economic and the social action, maintaining the natural equilibrium. A current experience relating to the proceeding with surface objects of closed mines and (presented in the paper) examples of management of port-mine objects indicate the necessity to adopt appropriate criteria, which will allow to take optimum decisions concerning their maintaining or demolition. It results from an analysis that in the assessment of the usefulness of post-mine buildings for the repeated management social criteria should be taken into consideration besides of technical and economic criteria. According to the opinion of the paper's authors, the usefulness of an individual post-mine object for a repeated adaptation is determined by the following criteria:

- technical criteria:
 - o current technical condition,
 - o possibility of adaptation to new useful functions,
- economic criteria:
 - o profitability of renovation and adaptation to new useful functions,
- social criteria:
 - o site planning of land development of a closed mine,
 - o demand for the given type of cubature object and architectural, historic and cultural values.

The revitalisation of a post-mine area according to the principles of sustainable development requires to analyse possibilities of the post-mine objects management with a participation of local self-government and administrative authorities, taking into account the plans of land development in the region and adopted priorities in this field.

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