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REVITALISATION OF POST-INDUSTRIAL AREAS THROUGH THE PRESERVATION OF TECHNICAL HERITAGE IN POLAND

1. Introduction

Today, post-industrial areas mean not only heavy-industry plants (e.g. steelworks, cement mills, power stations) where production has ceased but also mining areas (e.g. salt mines, coal mines, oilfields) where exploitation of minerals has been stopped. The general rule, supported by law, enforces in such areas restoration of their lost usefulness and their other assets, or creation of new ones. Afforestation and agricultural are now the most frequently chosen as the modes of reclamation in Poland. A common practice with post-industrial areas located near towns or in towns' centres is to plot out these grounds and put them for sale to smaller private entities. In any case, such an action does not entail a future vision or a regeneration concept for the area. Each of the new owners works out his/her own strategy of building demolitions, conversions, or adaptations, as well as of landscaping and arrangement of the surrounding terrain. In every case, the present authors postulate, in the first place, that a comprehensive inventory of the plant's infrastructure be carried out, and it be only upon the inventory completion that a revitalization strategy is developed. Such a sequence of actions should allow one to identify buildings and other objects of historic and/or architectonic (artistic) value, and not only to preserve them as heritage of industrial culture, but also to consider their purposeful adaptation and exposition in due time.

Preservation of characteristic technological objects helps also fulfilling the vital need for satisfaction in local communities, as majority of their members had been working in the plant in question for decades. The retired workers and their descendants, while cherishing memories of the past, should also be able to derive pleasure from the identity and the history of their former workplace.

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Legal basis for such procedures exists, but it is not properly imbedded into the rules which regulate industrial activities, mining included. Scattered provisions remain useless to preservation of industrial infrastructure because new plant owners, local authorities, and even conservation services lack the knowledge and the awareness of the infrastructure's potential and value. There is also a need for prospective visions of (post)industrial zones, with a long distance perspective, and built up well in advance.

Meanwhile, on the basis of technical heritage, West-European post-industrial regions are being transformed into cultural, business and tourism areas. The Ruhr Area is an excellent example. During the revitalization process Ruhr's infrastructures of coal mines, steelworks, and various industrial plants have been converted into cultural, recreational, and service establishments, which have changed the image of the region. Also in Germany, in the Lusatian Basin, inactive open pits — leftovers of lignite exploitation — have been transformed into water reservoirs with a variety of functions, making together the largest artificial lakeland in Europe. Water systems enrich the preserved elements of closed mines and coking plants.

Ten of inactive metal mineral (ore) mines and rock quarries in Cornwall and Western Devon are now registered in the UNESCO World Heritage List, and have become tourist attractions in these parts of the British Isles.

New functions of the preserved post-industrial objects not only provide a specific climate and are an engine for economic development based on tourism, but they constitute a bridge between the past and the future of the regions, where once industry played a very important role.

2. State of Polish law in the area of preservation of industrial historic monuments

In Poland the basic legal act regulating questions of preservation of industrial culture heritage is the Act on Protection and Care of Historic Monuments of 2003 [18]. Article 6 of this Act lists — among the industrial objects, which may be classified as monuments, both technological complexes — especially mines, steelworks, power stations, and other industrial plants — and technical products, e.g. equipment, devices, means of transportation, machineries and tools.

The legislation lists four criteria determining whether a given object can be recognized as monument[1]: (i) historic value, (ii) artistic value, (iii) scientific value, (iv) object's age; the latter being quite imprecisely defined by the object's being "a witness of a past epoch or event". Industrial objects reflect various developments in technical thought, document turning-point discoveries and mark civilization standards of societies; hence it is with no difficulty that a scientific value can be found out in such objects. Industrial buildings raised in the past are often characterized by their high architectural, i.e. artistic, quality. The history of the extant industrial plants goes back to the previous epochs. Specific elements of the

1 Monument — real property or a movable, their parts or complexes, being man-made artifacts or linked with man's activity, testimony to a past epoch or event, the preservation of which is a public interest because of its historic, artistic or scientific value (Article 3, p. 1 of the Act [18]).

industrial infrastructures, like smokestacks, cooling towers, and shaft towers have taken firm roots in the landscapes of industrial regions. This fact clearly justifies that they, similarly to many public utility buildings, are considered historic monuments.

The Act [18] provides for several forms of monuments' preservation, i.e. listing, historic monument status, creating a culture park, protection set in the Local Land Use Plan or in other spatial planning documents (Article 7). The most valuable monuments may be put forward to the UNESCO World Heritage List [2].

Nevertheless, all heritage objects, industrial ones including, which possess the defined characteristics, are monuments, regardless of the fact whether or not they are protected by law, and no matter what their state of repair is. Therefore, the Act [18] applies both to the objects already under the formal protection, and to those that should be protected because of the values they possess. The Act [18] includes guidelines for protection of monuments, defining the duties of the conservatory authorities and the instruments of protection at their disposal. The Act also sets rules for the care of monuments to be provided by their owners, administrators, and users.

According to the Act [18], preservation of monuments consists, among other things, in providing legal, organizational and financial conditions to ensure their permanent existence, furnishing and maintenance, and it implies the implementation of protective tasks in the planning process and the land use (Article 4). On the other hand, care of monuments means, among other things, providing conditions enabling scientific research and documentary activities as well as execution of conservatory, restoration, and building works on the monument (Article 5). According to Article 3, p. 1 of the Act [18], care of monuments does not apply to every monument, but refers only to those which are under one of the legal forms of conservatory protection as listed in Article 7 [1].

Cooperation of conservatory authorities with the owners and/or the users of the objects may result in the desired effects in respect to the upkeep of the monumental values of industrial objects. It should be emphasized that one of the most effective forms of industrial monuments protection is their adaptation to new functions, including commercial ones. Commercial functions, when introduced into the monumental industrial tissue, may provide sources of financing for conservatory works but on the condition that the characteristics of the object, which define its value, will be sustained. Positive examples can be quoted here: "The Manufaktura" in Łódź, Poland, or Business Park Waltrop in Germany. It is where comprehensive industrial complexes have been adapted to commercial, recreational, and service functions.

Unfortunately, the Act [18] is not sufficiently clearly interrelated to Construction Law [15], Geological and Mining Law [19], and Act on Protection of Agricultural and Forest Land [16], which regulate the problems related to closures of industrial plants, including mining fields, and their land's reclaiming.

The rules of the Geological and Mining Law [19] in its Article 129 and the Regulation by the Minister of Internal Affairs and Administration regarding Mining Plant Operation Plan determine the future of industrial infrastructure at the liquidation phase of mining plants. In the process of preparing and approving the operation plan for the plant being closed, a decision is made as to the ways of final treating the technical infrastructure. Such decision means

the choice between its physical liquidation and providing protection in order to enable a future adaptation to new functions.

Within the scope of information defined by the above mentioned regulations as necessary to be included in the operation plan of each mining plant being closed, a requirement to prepare the infrastructure inventory with respect to its historic values is missing, irrespective of the fact that the plant may have had years-long history, whereas a liquidation timetable is required quickly. The only exception is a situation in which, within the area of the mining plant, there are objects listed as monuments, i.e. included in the Provincial Monuments Register, or in the commune monuments record.

Inferring from the above, only a high level of awareness of the owners of formerly industrial objects, and their efforts towards legal protection or protection through adaptation to a new usage, may fill the gap in the law. However, very restrictive duties which lie with the owner of an object listed as monument, do discourage him from following such a procedure (cf. documents and necessary agreements required by the Article 25 of the Act [18]).

All industrial, engineering, military, and railway objects, including mining ones, are subject to the rules of the Construction Law [15]. In its Article 39 the lawmaker obliges the owner or user of any object listed in the monuments register to obtain a permission to execute building works from the Provincial Conservator of Monuments, and — in the case of demolition — to obtain the approval decision from the General Conservator of Monuments. In the case of a building not listed in the monuments register, but listed in the Commune Monuments Record, construction or demolition permission is issued by the District Governor (Starosta) in consultation with the Provincial Conservator of Monuments. It might seem that the rules formulated this way would safeguard valuable industrial architecture, but the practice shows that it is relatively easy to obtain the permission to pull down a building, by justifying the necessity of the demolition by a poor state of repair to the building, or by proving a loss of its artistic values.

The 2010 modification to The Act on Protection and Care of the Historic Monuments [18] and other related laws obligate commune heads (Wójt), town mayors or city presidents to produce Commune Monuments Record (Article 22, p. 4). The Commune Monuments Record, apart from the monuments already listed in the Provincial Monuments Register, should include real property monuments indicated by commune head, town mayor or city president in agreement with the Provincial Conservator of Monuments. To create this record, local authority has had a two-year deadline starting from the date the Provincial Conservator would pass on Provincial Monuments Register and Provincial Monuments Record of real property. The date was set at April 18, 2010. Thus an opportunity has arisen to complete commune inventories and analyses of industrial heritage. However the customary impenetrability of many still active industrial plant sites may prove to be a handicap in this endeavour.

3. Revitalization practice in Poland

After WW2, in the communist Polish People's Republic (1945–1989) — in contrast to Western Europe — industrial, military, and railway facilities, consisting of fenced terrains

and infrastructures including buildings, were subject to predatory exploitation. No attention was paid to aesthetic values of the existing buildings. They were not cared-for, were deformed by new technological additions that often destroyed their primary spatial order, and, on top of all that, were never systematically maintained.

Industrial objects constructed in Poland before 1989 have had common characteristics: devastated buildings, unidentifiable and unsecured overhead and underground installations posing a threat to health and lives, unidentified contamination of building structures as well as soil and terrain pollution. All these have led to the today's situation in which many industrial objects are useless for adaptation (within any revitalisation process); their state of repair and their contamination simply sentence the buildings to demolition or being left alone as permanent ruins.

A potential value of the post-industrial grounds is — at least at the first stage, after closing the production process down — their uniform ownership. Usually, industrial plants represent one integral area, with one administrator and one owner, i.e. the Treasury[2].

As mentioned earlier, the lawmaker does not impose on the decision-maker or the owner of the industrial plant to be closed preparing a future development plan and land use plan, a documentation which would have to be preceded by completing the inventory of objects and the valorisation thereof, and generating a vision for their prospective use. To make such a vision realistic, the requirements, proposals and motions from a wide range of stakeholders (the current owner of the site, the manager, the employees, the owners of the neighbouring sites and the inhabitants of the site's vicinity and often of the whole town) affected by the planned change, should be taken into account.

In practice, the level of stakeholders' participation in the decision making process concerning the future use and land development of post-industrial sites is null. The decisions are made in narrow expert circles and do not take into account the needs of stakeholders, whom the changes will affect to the highest degree. The right to submit postulates and comments, as well as the obligation to perform societal consultation over the planned projects are legally binding [15, 17] but the degree of fulfilment of this duty, usually after the project plan is completed, anyway, raises serious reservations. In neither of the two acts [15, 17] a wider societal engagement is foreseen, especially a participation in vision generating prior to approving the plan, that would provide guidelines for further development.

4. Case studies

The following three old industrial plants in Małopolska (south-central Poland) are now becoming or will soon become post-industrial areas. They differ as to their survival potential, their legal and actual protection, the development of possible scenarios for their future usage and the degree of taking advantage of their historic and architectural values.

2 Ostręga and Uberman [10] take note of the importance of ownership status in the success of a revitalization process.

4.1. Limanowa-Sowliny.
A conflict of the registered values with the valid land use plan

The complex of the former oil refinery in Sowliny (now a district of the town of Limanowa) was built between 1904 and 1909 by a French company. The plant is the farthest western point on the Carpathian-Galician Petroleum Track, marking the beginning of the exploitation and crude oil processing, resulting from the world-important discoveries and inventions by Ignacy Łukasiewicz.

The plant consists of technological buildings (production halls, storehouses, casing structures), service buildings (fire station, water tower) (Fig. 1), social services ("Casino", park), housing for the workers and the supervision personnel, villas for the director and the chief technologist. The urban composition testifies to the original planner's attention to aesthetics, spatial legibility, and detail [14].

Fig. 1. Limanowa, the former Sowliny oil refinery, 1904–1909.
General view from the East with the water tower and the company's fire station.
Photo: A. Szewczyk, 2010.

Majority of the buildings were renovated in the last decade, the housing is in a satisfactory condition. Meanwhile, however, the present tenants of the central complex, the fire station included, were given notice, because a buyer showed up to the owner. Since then the technological buildings that constituted the core of the former oil refinery have been abandoned and falling into ruin.

The lack of problem understanding at the preparation stage of the Local Land Use Plan's and, clearly, a disinformation, have led to parcelling out the plant's grounds and setting industrial activity as the target function. The complex of red brick objects in the center of the plant is owned by two or three different entrepreneurs. Each of them erected fencings of his own. The one who is the proprietor of the very core of the old plant, which defines its identity, having been unable to find a new application for the existing buildings, forces the

radical demolishing[3], in order to build new, much bigger production halls, required by new technologies. The already built new private buildings, like the concrete plant erected in accord with the Local Land Use Plan, exclude any revitalization towards a cultural use.

The Sowliny oil refinery is an example of a monumental complex protected by the Local Land Use Plan, but the above mentioned setting of industrial activity as the target function, which in fact did not take into account the monument's specificity, has led to a conflict between the new owner, the conservatory authorities, the Local Land Use Plan, and — at the end — also with the public interest.

4.2. Gorlice. Glimar and Glinik companies — unrecognized heritage of 19th century technology

The town of Gorlice is a large center of industries related to crude oil exploitation and manufacturing. Oil extracting never dominated the town but still, within the town's limits, there is an active oilfield called "Magdalena". There are two plants are crucial for the industrial tradition of the town:

1) Glimar — formerly an oil refinery, nowadays an oil manufacturing and asphalt, grease and lubricant production plant (Fig. 2);
2) Glinik — a drilling machinery and mining tools factory (Fig. 3a, 3b).

Fig. 2. Gorlice, GLIMAR oil refinery. The two-family villa for higher rank staff members, S. Wyszyńskiego Str. 15, 1920s, as seen from the South, the paraffin preparation tower, the red brick smokestack of the central boiler house, and the metal sheet chimney. Photo: J.K. Lenartowicz, 2011.

3 The Delegate of the Provincial Monuments Conservator Office in Nowy Sącz conducts legal proceeding in the case of demolition of the oil refinery building complex (December 2011).

Fig. 3. Gorlice. GLINIK drilling tool factory. a) The roofing of the main porter's lodge is of the 1960s; the birch trees are in accord with the architecture, b) The hall of mechanical department with an office wing; cooling towers in the background, 1960s. Photo: J.K. Lenartowicz, 2011.

Those two companies were founded in 1883 by the Canadian entrepreneur W.H. MacGarvey. The plant buildings are appended by housing complexes for the plant's employees (the primary complex and the so called New Settlement complex built in the 1950s), "Casino", two-family villas for the supervising personnel, and a primitive home of the founder who lived there between 1895 and 1914. The plant founded a school in the town and arranged the municipal park.

While the company's housing and the owner's house have been listed in the Provincial Monuments Register, the buildings and the technological objects within the plant fence have not yet been recognized as regards to their monumental values. The authors carried out a pioneering reconnaissance in July and September 2011 [9]. Their preliminary survey resulted in identifying several objects spatial and architectural values of which are worth noting, while their technological specificity merits preserving them for future generations.

Apart from the production objects, there is a WW1 military cemetery (inaccessible to the public), and a wayside shrine founded by MacGarvey in 1901. The latter is located near the former site of the house once inhabited by the 19th century Polish geographer and poet Wincenty Pol.

At present (2012), both factories have changed their owners. The plants' future, including their architectural heritage, in no way is decided yet. Plants' inventories[4] made in advance, identification of valuable objects, and elaboration of a vision for prospective development, would allow — in case of the company's liquidation — (still not out of question!) — to save the part of the heritage fundamental to the town and the region, but also for the World.

4 A group from the AGH University of Science and Technology and the Technical University of Cracow started, on the initiative of A. Ostręga, a preliminary research and inventory of the spatial values of the two plants (July--September 2011).

4.3. The State Coal Mine Jawiszowice. A potentially positive case offering a chance to build a vision and a plan before the plant's liquidation

The coal mine in Brzeszcze was built in 1906. After WW1 it expanded onto the terrains of the neighbouring village of Jawiszowice, where the new Andrzej III (originally Jupiter) and Andrzej IV shafts were drilled and opened for coal production. The State Coal Mine Jawiszowice (today the Coal Mine Brzeszcze-Silesia Branch II [Ruch II]) was the first, and it now remains the only state-owned coal mine built in Poland between the world wars, what makes it a historic monument. It was being enlarged until 1939, and represented then a very modern solution, where the newest machinery and technology of the time were applied.

The complex of buildings on the mine's surface grounds is also valuable for its architecture. It represents the modern architecture of the 1930s in its purest execution [8, 20]. The hoisting machine of the Andrzej III shaft and the grading and wash plant (unfortunately broken and partially demolished today), which are strictly rectangular prisms based on a steel skeleton and filled with red brick and glass strip windows, are particularly attractive (Fig. 4a). Archival photographs from the construction phase show clearly the complex volume disposition. The whole resembles the bigger Zollverein Coal Mine complex in Essen (designed by F. Schupp i M. Kremmer), recently transformed into a much visited industrial monument and a center of the creative industry in the Ruhr area. The author of the buildings in Jawiszowice remains unidentified. Within the framework of the Revitalisation Programme for the town of Brzeszcze for the period 2008–2015 [12], the area of the mine has been marked, along with the so-called Centrum and the miners' colonies, as a place demanding a prospective vision of land use development taking into consideration the historic values of the mine. Such a vision should contribute to the commune's development.

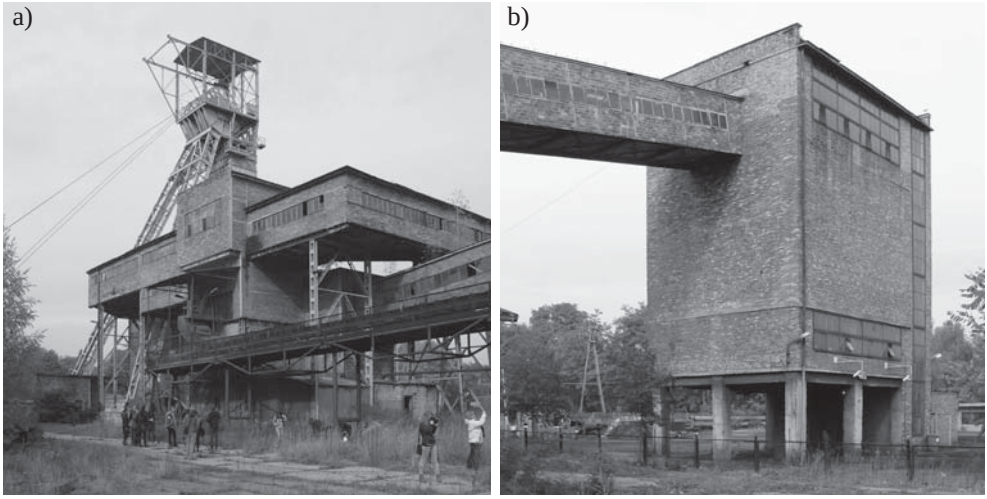

Fig. 4. Brzeszcze, the State Coal Mine Jawiszowice, 1918-1939. a) Coal reloading bridges, Andrzej III shaft tower in the background, b) Coal retail sales tower. Photo: J.K. Lenartowicz, 2011.

Coal excavation has already been stopped in Jawiszowice (the shafts serve for control actions and ventilation) but the final closing down of the mine is foreseen in about 15 to 20 years, i.e. around 2025. Some buildings which became useless for the mine, were demolished (e.g. changing room for women), other ones were sold to private entrepreneurs (mechanical workshop, wage hall and changing room for men). One may hope, that the nomination of the Jawiszowice coal mine for the Revitalization Programme [12], will allow taking necessary steps towards setting a strategy to preserve the valuable complex of buildings that have survived.

In the years 2009–2011 a group consisting of staff members, Ph.D. students, and students from the AGH University of Science and Technology and from the Cracow University of Technology carried out measurements in the mine and developed idea projects for the coal mine[5]. These actions resulted in entering the mine objects into the Brzeszcze Commune Monuments Record[6].

Entering the mine into Commune Monuments Record should protect its objects against uncontrolled actions, which might damage single buildings or the entire complex. Very crucially, this entering into the Record is expected to popularize the importance of the complex and the idea of protecting it among the local government and the commune inhabitants. Design projects by students from the Architecture Department of the Cracow University of Technology present full concepts of the revitalization which, when transmitted by visual media, may help to begin discussions necessary to work out a rational strategy. The above described scenario and the sequence of possible steps seem to make a good model for a general, knowledge-based revitalization strategy, to be built well before the physical closure of the plant would start.

5. Summary

Poland has no comprehensive data base of post-industrial facilities, not to mention a comprehensive identification of their heritage values. Poland's provinces which have registered their post-industrial objects (Silesia, Małopolska, and partly Podkarpackie) are in minority. Limited awareness of the existence of valuable objects deserving protection refers even to conservatory authorities, mainly because of the inaccessibility of fully operational industrial plants. Lack of systematically updated and archival documentation of industrial buildings precludes generating revitalization concepts in due time. As a matter of fact, the law in force allows for linking the change in usage with the preservation of monuments, but in practice such an relation is ineffective.

Instances of post-industrial object revitalization based on the exposition of monumental substance and structure are few in Poland. Let us mention the "Fabryka Trzciny" in Warsaw,

5 The AGH Rector's grant for the „Skalnik" Students Scientific Circle — financial support of the project: Revitalization of the mining town Brzeszcze in students projects, 2011. Interuniversity initiative of student groups cooperation from the Cracow University of Technology, the Economic University of Cracow, and the AGH.

6 The decision OZKr.5140.32.2001.DW of the Provincial Conservator of Monuments in Cracow of November 23, 2011 on the entering the mine complex of buildings into the provincial register of monuments as a complex of modern industrial architecture.

the ancient “Kadzielnia” quarry in Kielce used as an amphitheatre, controversial deformation of the “Księży Młyn” district in Łódź, the over-gentrified Old Brewery in Poznań. The planned adaptation of the EC2 CHP plant in Łódź brings hope for a valuable revitalization of the district and the city. The examples from Małopolska described present both opportunities and pitfalls of the industrial heritage revitalisation in practice. The destiny of numerous plants, now collapsing, inconspicuous but important at the local scale to the place’s identity, remains most uncertain.

The Regentif Project — an international project [3, 4] dedicated to the development of a general method to regenerate post-industrial facilities — in its conclusions postulates intensification of innovation based on participation of a wide range of stakeholders (future users) from the very beginning of the revitalization program and planning processes. In highly developed countries the practice of social dialogue in planning and architectural design is much advanced [5–7]. Broadening the opinions and the decision making group is, in practice, still impossible in Poland.

The authors postulate: systematic preparation of databases of industrial plants destined to be closed, their assessment, identification of objects (buildings) and their historic and artistic values, and preceding the closures with planning the future use that would involve participation of all groups of stakeholders.

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