REUSE OF HUGE INDUSTRIAL AREAS

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Abstract

The post-industrial city of Ostrava has many brownfield blackfields and industrial areas. Gradually, these buildings and campuses governed and resolved to re-use and involvement in the function of the city. Regeneration and return them to the urban organism is very expensive and time consuming.

There is a big question how to treat the polluted and debased city districts. As a successful example there is an area of National Historic Landmark called Lower Vitkovice, which has undergone over the past few years to rebirth and industrial workers were relieved visitors culture, history, sports and others. As a unique example of finding balance there is an use of technical monuments and the introduction of new life into the historic grounds of looking at the history of the complex and technical condition before reconstruction. Using qualitative analysis to evaluate the progress of our selected objects. Using principles similar objects in other post-industrial cities and their historical buildings.

Keywords: Reconstruction, conversion, historical and industrial buildings

Introduction

The City of Ostrava is the third largest city in the Czech Republic in the northeastern part of the country. The area is known as the former center of heavy industry focused on coal and iron. Lower Vítkovice is located within the Vítkovice Ironworks, it is about 200 years old industrial area, near the historic center of Ostrava. The place occupies an area of 253 ha, here are the best buildings of the industrial era. Two centuries old environmental burdens in urban organism is now a new search pride of Ostrava region, whose gate passes half million visitors a year. They are now the headquarters of the largest cultural and educational events in the area.

Historical Background

In 1763 there was discovered coal in Ostrava-pan, which fostered economic development. Founding Vitkovice Ironworks in 1828 by Archbishop Rudolf von Habsburg, who established the ironworks facility using hydropower river Ostravice and local sources of coal, stimulated the development of the city. The first major contract to build the ironworks was Ferdinand Northern Railway in 1847. The construction of the railway communication with Ostrava at the forefront of industrial powers in Austria-Hungary. Vitkovice Ironworks arise with the industrial revolution and the development of hardware stores is closely connected with the development of rail transport. Already in 1836 and 1838 were built two blast furnaces and coke were obtained coal and iron mines. Vitkovice Ironworks became the main supplier for railway construction. Due to the need for iron grow and so was built one of the most modern hardware enterprises in Europe at that time. By this became from a small village with few inhabitants gradually a municipality. In 1972, the furnace no. 4 became one of the most modern in the country, because it was equipped with a control computer. The same year, there was finally stopped Žofín smelter. Last repairs of the blast furnace took place in the eighties on the furnace no. 4 and 6. Mining activity was significantly suppressed after 1989 as a result of industrial restructuring, which was completed two hundred years by business with coal in Ostrava. In the nineties, there was a reduce of the need for iron due to the transition to a market economy. Coal mining was completed in 1991. In 1998, after 162 years, the operation of the furnaces completely stopped. This caused the termination of production of iron lay in preference to improve the environment in the region. According to the regulation Ostrava city council had to reduce gaseous and liquid emissions. Last tapping pig iron took place 27. 9. 1998, at furnace number 1. This day were also canceled up to 1,200 jobs. Vitkovice began to focus on engineering and steel production was concentrated in the new smelter, ArcelorMittal Ostrava as now.

The Lower area of Vítkovice

It has been long considered as an industrial area with this load. Even the operation, when involved the production of pig iron, the disputes on the future of these industrial buildings. The intentions of the City of Ostrava and heritage preservation authorities was to build on this site a technical museum. Vítkovice had clearly emphasized that they do not contribute to the open-air museum, because it was recommended to implement a recovery program for industrial and technical monuments in the Programme preservation of an architectural heritage. Unfortunately, this programm could not be implemented due to the lack of funds. Then became a breakthrough year 2000 and 2003. In 2000 was Vitkovice and Hlubina part of the urban

area and Ministry of Culture declared them as a cultural monument, and two years later a national monument. In 2003 it entered the discussion with the new majority owner of Vitkovice Ing. Jan Světlík and the national cultural monument as a whole has become a part of the privatized company Vítkovice joint-stock company. During this period he began to realize the vision of the Lower Vítkovice. Finding appropriate solutions brought a number of proposals. In August 2005, the Vitkovice, Inc. project financing Comprehensive renovation and restoration of national cultural monuments Lower Vítkovice application has been rejected. Vitkovice, Inc. continue to disagree with the method of "last day" that leaned Heritage Institute. This method seeks to preserve an authentic working environment including novelties documenting daily life, such as dirty boots, etc.

In 2008 came at the request of the Minister of Culture Vitkovice. He became acquainted with a project that will make use of a new national cultural monuments Vitkovice and ruled in favor of its adoption. At the same time Vitkovice presented the award of the European cultural heritage project for New Vítkovice. Presenting the award there was said that he considers Ostrava Capital industrial herritage in the Czech Republic and explained why the Ministry has decided to support the proposal Vitkovice, as: "In the past

Fig.1 The Lower area of Vitkovice (foto: L. Kolarcikova)

we saw as a monument only castles and historic sites. Unlike Europe, we have neglected industrial heritage. Therefore, we decided that the most important European monuments were just old Vitkovice. "[1]

In 2008 the Council also approved the inclusion of Moravian Disclosure Project and reuse of national cultural heritage Vitkovice on the list of projects of the Ministry of Culture, which resulted in the conclusion of

contracts with the city of Ostrava and the Moravian-Silesian Region. The preparatory phase transformation Lower Vítkovice was completed in October 13, 2009, when the grant allocation of 500 million crowns as an Accessibility Project. Was also crucial involvement of Josef Pleskot. Josef Pleskot office made a study for the revitalization of Lower solving the disclosure of blast furnace number one, the conversion of the gas tank on a multifunctional hall of the sixth and energy exchanges on the world of technology and many more worth an estimated € 2.2 billion.

The implementation of the projects were divided into several stages. The preparatory stage covers the period from the initial idea to a study in 2009, following the first stage during 2010 up to March 2012, included the reconstruction of the blast furnace number one holder and sixth energy exchanges, office buildings 520, construction of a new energy center and obtain a permit for premature use of roads, construction of a central park.

The second stage in the period of 2012 to 2014 included the construction of a large world of technology, Trojhalí Carolina, Deep Mine and the extension of the Russian street to provide transportation between the lower area and the center of Ostrava via Nová Karolina. In the third phase includes space Landek Park, the location of the county library in the building and construction coking university campus, the Faculty of Economics VSB - Technical University of Ostrava and the Faculty of Arts, University of Ostrava. [4]

Industrial areas are unlike other historical monuments specific characteristics that complicate maintenance. The large surface areas made high need of funds for any activity and interconnection architecture with technical equipment. The Heritage Preservation resolves two issues - the preservation of the material substance of monuments and a method of use of a particular monument. The most commonly used way of social use of these sites is making them available for inspection. There are several ways disclosure. Technical monuments can become sightseeing objects showing the production run. This type of disclosure are the best suited objects that are after decommissioning in a compact form. The realization of this form is very expensive. Buildings that have been preserved only in a part and are capable of making, are made available as sightseeing objects at rest. The third option is to make these places so-called self-accessible area. This is a presentation of technical monuments which have been preserved buildings or their remains, such as fragments of blast furnaces or historic brickworks. For these objects, there are special panels installed with basic information about the history, function and significance of the building, accompanied by satisfaced reconstruction. An important prerequisite for making public monuments it is a security and appropriate operator.

Conversion of scrap in the historic industrial monument

After the end of production in 2000 there was a part of the premises Lower Vítkovice with Down Deep declared as a cultural monument, two years later a national monument and in 2008 the area became the first Czech monument part of European cultural heritage. The newly formed National Historic Landmark, the Government defined as approximately 14 ha large area of the mine, blast furnaces, coke ovens and other movable and immovable objects together with technical equipment including land. The proposal for entry into the UNESCO World Heritage List was discussed.

This industrial monument is a symbol of Ostrava and the entire Moravian-Silesian region. The uniqueness lies in the ironworks long continuity and connection technology - from coal mining to the production of iron and steel, without overcoming long distances, more efficient production. Panorama of blast furnaces, coke ovens coal tower, technological bridges and chimneys became a symbol of the city. Production functioned continuously since the 20s of the 19th century until the late 20th century. Since 2007, there are regular tours of the area. To carry out inspections invited the company Vítkovice Holding, as. Outside the tourist season, the whole area from stopping production inaccessible to the public. Tours are held every weekend and last for approximately 1 hour. This activity meet with a great public attention. During the period from 24. 8. 2007 to 31. 10. 2007 the area was visited by 4,652 people, including 152 foreigners and even had another season of visitors distress. [2]

Vitkovice Machinery Group whose chairman and managing director is ing. Jan Světlík began to implement the project New Vitkovice, which lies in the revitalization of Lower Vítkovice, allowing access to the whole complex of public and use this space for leisure activities and education. The aim is to preserve industrial monuments define a new use of buildings and access to revitalized area. They are linking the past and present. The uniqueness of the project lies in the fact that it combines the old with the new.

A study was conducted bringing a new use for the NKP Vitkovice possibility of drawing funds from the Integrated Operational Programme of the Ministry of Culture and also because in 2007 founded a nonprofit organization called the Association of Legal Entities Lower Vítkovice. In 2008 Vítkovice decided to ask the Minister of Culture for the reduction of the territory known as a national cultural monument only on technological objects demonstrating the technological flow, thereby Vitkovice emerged from the influence of the Heritage Institute. Culture Minister agreed and decided to adopt the proposed project and submit to implement. Subsequent grant award of € 18 million for Accessibility Project was in October 2009 completed by the preparatory stage and the planned reconstruction by the

aforementioned project started with the conversion of blast furnace number one sixth of energy exchanges and the gasholder. Interest association plays an important role in the transformation of the Lower Vítkovice. The association received for the development of technical monuments Czech Tourism Director Award.

In March 2009 were an architectural and urban studies made by Josef Pleskot. The study was addressed to the disclosure of blast furnace number one, the conversion of the gas tank into a multifunctional assembly hall, converting energy exchanges at the sixth World technology solutions between the Lower with Down Deep, Deep Mine utilization and exploitation of the headquarters building. The architect is involved not only in the transformation of individual objects, but the whole city planning area. He wants to create the Lower territory, which the city and its center creates whole. It seeks to restore the masterplan, which had Vitkovice 150 years ago.

Blast furnace no. 1

The blast furnace number one is a symbol of Vítkovice. Oldest lady or steel temple. Conversion to a sightseeing tower by architect Pleskot took place between 2011 and 2012. The surplus parts have been removed, was mounted safety gates and two new elevators. The original construction of the bridge was installed four-ton skip hoist with authentic propulsion engine. The car is in the top glass clear glass and the bottom glass black and is able to take up to sixteen persons. The tower is sixty meters high, allows a unique view of the Lower Vítkovice, and the panorama of Ostrava. Now there is a superstructure of the blast furnace fifty feet, where it will be placed in a unique cafe, club and a rooftop terrace. The superstructure will offer an extraordinary view of the entire area.

Fig.2 model of superstructure (foto: L. Kolarcikova)

The blast furnace became part of the tour route, which follows the journey of a former technological flow, which explains the entire process of production of pig iron. The route begins at the crane, where once was transporting scrap metal for recycling. Here Pleskot suggested starting point with a steel roof in the shape of wings outstretched Phoenix hanging on the ropes. Now there is a certain symbolism in Phoenix, as well as blast furnace rose from the ashes.

Gasometer - multifunctional auditorium Gong

Gasholder has become a convention center which seats up to 1500 seats, gallery, restaurant, lounge and locker rooms. In order to achieve this final form, it was necessary to use special construction technology. After the production of the gas tank is empty, the bell remained at a height of one and a half meters inside the entrance featured a hole burned in the mantle of size two times three meters. Pleskot left to lift the bell gasholder for almost fifteen meters and a newly formed internal space divided into two floors, first find the foyer, gallery, dressing room and conference halls, the top floor is a large-capacity hall. Retained the original steel structure and interior materials were used, such as exposed concrete or structural steel. The final form continues the industrial character of the building. Steel casing was left in its original form with authentic riveting, was blasted and painted metallic black paint. By building was cut out of the window to obtain natural lighting. The auditorium is artificially ventilated underground collector preheated or cooled air. Gasholder was first opened on May 1st, 2012, when it came to see more than forty thousand visitors.

Fig. 3,4 Gasometer (foto: L. Kolarcikova)

The Sixth energy PBX - Small World Technology

Energy panel is used to manufacture compressed air using two piston blowers weighing together nine hundred tons, which even today are made interesting internal spaces of the building energy exchange. These "lungs smelter" were built in 1938 and in 2012 was converted into a museum called Small World techniques attracting visitors on an interactive tour of the history of technology. Children as well as adults, here can try what it is to land a plane or drive a car, pedaling on a stationary bike can warm up the radio and to experience firsthand the production of electricity, they can look at the actual models of production facilities and there waits for them many other activities. The first floor was built viewing terrace from which you can see the entire exhibition together with blowers

from above. The tour then continues after technical stairs to the catacombs, where they are installed technical attraction with water and steam. The ground floor of the building can be found, inter alia, refreshments, changing rooms, classrooms and a hall for educational lectures for students and teachers who are here to gain experience of new forms of teaching work undertaken through games, animations and so on. For conversion of energy exchanges stands architectural Studio Z - Helena and Václav Zemánek and architect Zdenek Franek, who participated in the final revised project.

Energy centre

Electrical power supply to the first blast furnace gas holder, both small and large world of technology and the future and the fourth and sixth furnace ensures energocentrum. Located between the former gas tank and a small world techniques where once stood a petrol station. Its modern technology, visitors can explore the Lower and get an overview of the entire system energy flow. [3] How it works, it will also show the interactive screen. This modern energocentrum provides good energy management and uses of them all.

Big World of Technology

The three-storey new building is located in the southeastern part of the area. The building is 125 m long and 12.5 meters high mirror the main facade. Science Centre offers visitors a cinema with 3D projection, classrooms for teaching, seminar rooms and laboratories, as well as a lecture theater.

On an area of 14,000 m² are four different continuous exposure and a world designed for temporary exhibitions. "Building the World of Technology is in its expression dispute minimalist, but offers a maximalist experience. The industrial complex Lower Vítkovice form a sort of corner into which will be in the form of educational exposures embedded knowledge of human knowledge that form the foundation of our civilization, "said author Pleskot to this building. The architect was for linking industrial and modern architecture awarded as an architect of the year 2014.

Conclusion

With the revitalization of the whole area there was a reuse of derelict industrial buildings and thus created new possibilities for the area and the city in terms of cultural and social life and the belief that the Vitkovice Ironworks not scrap. The architect has found new functions and thereby extend life relic of the European character. Revitalization is a classic example of access to historical industrial monument. The unique combination of historically prized territory and architectural solutions in

conjunction with the active promotion of cultural events are expected great public attention. One of the most famous cultural events held in the complex multi-genre international music festival Colours of Ostrava, which is held every year in Ostrava.

Lower Vítkovice inherently belongs to Ostrava. It is a symbol of the city, but also the whole of the Region. Recalls the history of the industrial city. The area holding cultural and educational events come alive. The industrial complex creates by its nature an original atmosphere especially for cultural events. Along with the construction and transport links to the city center, which simplifies access to the premises. The method of the use of this brownfield brings a new perspective to these industrial buildings and prevent their deterioration. It shows that industrial sites can be utilized for the benefits of the public and the city as a space for culture, education and leisure. Use this space to the development of culture and education has proved benefits in many ways. "Converting the historical buildings is the rule combination of methods to work with space and structures. The intention mainly requires historical research clarifying historically valuable structures and read objects and then works with the study by filling the space with new features."[4]

Fig. 5 map of The Lower area of Vitkovice (DOLNÍ VÍTKOVICE. Copyright © 2010 DOLNÍ OBLAST VÍTKOVICE. [online]. 19.1.2015 [cit. 2015-01-19]. aviable: http://www.dolnioblastvitkovice.cz/default/file/download/id/17786/inline/1)

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