

The Altai's Industrial Architecture of the 18th-19th Centuries

Tamara Mihajlovna Stepanskaya

Altay State University, Barnaul, Russia

Abstract: In article cultural and historical value of the Siberian industrial architecture reveals. Its uniqueness is shown. Images of factory temples are presented, names of factory architects are called. The role of the Russian Academy of Arts in development of the Siberian industrial cities is opened. First professional factory architects A.I. Molchanov, Ya.N. Popov, L.I. Ivanov studied in an architectural class of Academy of Arts in Petersburg. Their degree programs were noted by silver and gold medals. In industrial cities they worked in line with K. Rossi's architectural school in style classicism. Their factory structures remain so far, but need restoration and a specific mode of preservation. This national property of the Russian culture reflecting blossoming of the Russian architecture in 18-the first half of the 19th eyelid. Industrial cities are a valuable spiritual and esthetic resource of Altai.

Key words: Classicism • Architecture • Dam • Plant • Style • Kolyvan • Traditions • European experience

INTRODUCTION

The appearance of the Siberian mining industry in the 18th c. became an important event in the history of Russia which hastened the discovery of its eastern areas.

The plants were the hearthes of culture including such main objects as dams, industrial buildings (melting factories, warehouses and laboratories), public buildings (churches, colleges, schools, museums and libraries), administrative buildings (offices, archives), apartment houses for officials, aid officers' barracks.

The plans of the Kolyvano-Voskresenskiy, Barnaulskiy and Shulbinskiy plants of the 1720-s-1740-s are the most ancient plans of the Siberian construction. In exploring then we can make certain conclusions.

Methods of Research: In article analytical methods are used: historical method, system method, art criticism method.

Main Part: The construction of the Altai towns-plants region was influenced by the experience of erecting Siberian fortified towns which combined the ancient Russian traditions and the experience of Ural construction [1]. Ancient Russian traditions were displayed in the character and location of fortifications, in the tree location of a religious building on an open square, and in the inclination towards a concentric planning of a factory settlement. These prerequisites in the Siberian plants led

to the appearance of a compact center which would include the areas of a plant's territory as well as industrial buildings. These prerequisites were created on the base of the Ural experience which, in its turn, used the European experience.

Since the moment of its creation, the plans for the Siberian factory settlements were subject to economic factors. The main elements which composed the settlement were adam-the main axis of the composition-and a plant's square.

The main building materials of the first half of the 18th century were woods, i.e., pine, silver-fir and larch. Brick buildings were a rare exception, e.g., the drug-store of Barnaul silver melting plant, 1748 [2]. Over industrial buildings predominated upright-frame constructions; dwelling houses and public and administrative buildings were all made of wood. The plans and the three-dimensional solution of the industrial buildings were defined by the technology of the process (the rectangular plans-hammers, mills, furnaces were put in a row; the furnaces dictated the height of the roof; usually, there were no ceilings).

In the second half of the 18th century eleven new plants in Altai, seven plants in Nerchinskiy district were built (not including mines). The planning idea of the unity of a town and a plant remained in the years classicism in Russia was developing. This is confirmed by the plans of the town of Barnaul of 1789, 1803 and 1835 [3].

New ideas in the planning of basements, walls, roofings, and the usage of brick, stone, and metal side by side with woods, prove the permanent progress in Siberian Construction in the 18th century.

In the second half of the 18th century such architectural styles as Baroque and Classicism were depicted in the religious buildings of Siberian plants (Barnaul Petropavlovskiy cathedral by the architect D.P. Makulov, the project of the church rotunda by N.A. Lvov [4]. The latter was not fulfilled but the fact that a gifted architect from the capital worked for Siberia is very important. This work adds to a short list of such examples: there is evidence that Giacomo Quarenghi projected a very big two-storeyed building with benches for Irkutsk; Kazachiy Nikolskiy cathedral by V.P. Stasov in Omsk is widely known. The project of church for Kolyvan by N.A. Lvov is one of the most original and perfect classical works in this list) [5]. During the whole 18th century Siberian plants were rational and utilitarian; aesthetical purposes of architects were reached predominantly in the erection of religious buildings. In the first third of the 19th century an original branch of Russian Classicism was formed—the industrial architecture. Its development is connected with the introduction of the post of the architect on the plants' staff. It is important to notice that professional architects appeared there in the end of 1780-s. The first was A.I. Molchanov (born in 1764, died after 1824), a son of a soldier [6]. The Cabinet sent him to study at the Academy of Art in Petersburg. The students of K.I. Rossi, L.I. Ivanov (1803—?) and Ya.N. Popov (1802—after 1852) have fulfilled the main principles of classicism in the project of the public center of Barnaul. Aesthetics of maximum open space, the system of space connections and the creation of distant visual vistas, thanks to these fulfilled principles the view of the town-plant's historical center can be related to the list of rare architectural monuments of Siberia.

A special place in this ensemble of squares and streets is Demidovskaya square with the obelisk in honor of the centenary of mining on Altai on it (1825). The projects of the first and the second melting factories of Barnaul Silver Melting Plant (the architects Molchanov, P.K. Frolov, 1817-1820) are not just first-class classical works, but are also some of the first solutions to the industrial erections image because of their monumentalism and the perfection of proportions [7].

It is important to note that if Siberia directly used the experience and the workers of Ural region, then in the 19th century the development of Ural and Siberian

architecture ran parallel and in their unique directions, but in one style—classicism.

Ural and Siberian erection began to slow the individuality of their creators.

Plants' architects can be respected for their longing to standardize and typify buildings: model projects of plants schools, colleges, hospitals, stores, barracks, dwelling houses were made taking into consideration the Siberian climate.

Standard projects of plant's architects were original artistic projects in comparison with the mode) projects of the capital's architects.

Barnaul, Kolyvan, Zmeinogorsk and Pavlovsk introduced a new principle of organization of settlements. They were original in design and social structure. The towns composed a special epoch in town-building of Russia and made a new, valuable type of monument, the architectural-landscape ensemble where nature and creative reflection of man mix in harmony. Among such ensembles the dam and the pond of the silver melting plant of Pavlovsk (1763-1754) [8]. Zmeinaya mountain and Zmeinogorskiy highway; the mountainous part, the dam and the mouth of the river of Barnaulka in Barnaul of the 18th century.

The complex of Kolyvanskaya grinding-works is of a unique value. It includes the dam, the pond, industrial buildings (the construction was begun in 1727 and finished in 1820-s; the planning by the architects F.V. Strizhkov and S.V. Laulin). The complex is located near Fabrichnaya mountain. The Kolyvanskoye lake in which the Belaya river has its source, is situated to the south-east. To the south rises Sinyuha mountain, composed of white stone and gray quartz with dark mica. The height of the mountain is 1117 m. above sea level [9].

The factory is built on the place of the first regional plant—the copper melting plant, which was founded in 1727. The construction of the factory is connected with the 18th century discovery in the Altai of rich deposits of minerals, stones for production, various raw materials, including gray-violet porphyries, jaspers, quartzites, granites, marbles and others.

Kolyvanskaya dam is made of wood and earth. It is a dam of a Russian type. The height is 10 m., the length—150 m. It has a light metal fence. An old spillway from the side of the pond from which water flows through the plant in a canal, has remained. The masonry of the walls of the canal (2m. high) is in a good condition. In 1801-1802 a water wheel was mounted to supply water to the machines of the

Kolyvanskaya grinding-works; in 1820 a second water wheel was mounted because the building for producing large objects of art had been built.

The main industrial building was planned by F.V. Strizhkov. It is two-storeyed building, made of granite, rectangular in plan, under a gable roof; the interior dating back to the 19th c. has remained. The building is a monument of Russian Industrial Classicism of the beginning of the 19th c. Besides, it is a memorial, connected to the history of the art of stone-cutting in Russia. It is also connected to the work of the mechanic-inventor and the first stone-cutter of Kolyvan, F.V. Strizhkov.

The project of the building for production of large objects of art was made by Strizhkov in 1807 and finished under the guidance of the factory manager S.V. Laulin. It is a one-storeyed building, made of stone, rectangular in plan, under a gable roof. The area of the department of polishing of large stone objects is 35 square m. The Queen of vases at the Hermitage was made here from rens green jasper. It was designed by the architect Melnikov [10]. The complex of the Kolyvanskaya grinding-works is a very valuable memorial of industrial architecture of Russia of the 18th c. to the first half of the 19th c.

CONCLUSION

In the second half of the 19th century in Altai towns and villages traditions of eclecticism were formed, originally expressed in industrial buildings. Good examples of this are the complexes of the alcohol bottling plant in Zmeinogorsk and the beer bottling plant (yeast-works currently) owned by the Vorsiny brothers in Barnaul.

In the beginning of the 20th century many tanneries, candle-works, mills and other plants were built.

By the first years of the 20th century there were six fur-works and tanneries, two soap-works, five brick-works, two saw-mills and about forty shoe workshops. All the erections influenced the architectural view of the town. Different factories and warehouses for ready-made production were built on the bank of the Ob river. The first electric station in the style of neo-classicism was built there.

The horse-breeding plant of the merchant A. Vinocurov in the village of Tyumentsevo is a monument of 20th century architecture with an original system of basic elements. The architectural solution depends on the design of the polyhedral marquee which is 21 m. in

diameter. The saddlers of the plant (1909-1910) join in the architectural ensemble of the riding house. The walls of the saddlers are made of red stone, the design of the floor includes simple wooden constructions. The basement is made of local stones.

In 1929, the historical part of Kamen-na-Obi town gained a granary called «mastodon» because of its silhouette and especially because of the inclined upper supply gallery. The granary was built under the guidance of the constructor and scientist Yu.V. Kondratyuk. The wooden construction of the granary has no analogy. The only industrial erection of the original design in the country was destroyed by a fire.

The history and practice of the building of Siberian plants and other industrial buildings is an interesting and important layer of Russian culture and architecture in particular. The factory ensembles of the Altai region must be restored, preserved and used as museums of the industrial architecture and technology, significant not only for Russia but for the whole world because of their uniqueness.

RESULTS

- Emergence in the XVIII century of the Siberian mining industry was an important event in the history of Russia, accelerated development of its east territories.
- Plants were the centers of culture and the considerable construction which main objects were: dams, production buildings, public constructions, administrative constructions, houses.
- On construction of the Siberian plants made influence experience of construction of the Siberian fortified cities, absorbed Old Russian traditions and experience of the Ural construction of plants.
- In the Siberian plants there were preconditions to emergence of the concentrated structure of the city center with inclusion of the territory of the factory area in it.

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