

# **Revival of Light Industry Enterprises (On the Example of Silk-Weaving Factories in Shchelkovo)**

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## **ABSTRACT**

**The article is devoted to issues related to the revival of silk-weaving enterprises in order to develop a unified scientific approach to creating conditions for adapting industrial facilities to the new socio-economic conditions of the XXI century. It is shown that the revival and operation of silk-weaving enterprises requires the least investment during renovation and contributes to improving the quality of life of the population. Reconstruction of enterprises took place quite often in the history of its development and each time the work at the enterprise did not stop. This demonstrates the obvious fact that the development of modern still existing old enterprises and the revival of abandoned territories is possible. At the same time, the city-forming role of these enterprises in the formation of the city structure is obvious. The article states that the renovation of industrial enterprises, cultural heritage monuments of the XIX-XX centuries, will have a significant impact on the development of the city, infrastructure, cultural and educational activities, as well as on the creation of a comfortable living environment of the historical city.**

*Keywords: industrial heritage, historical and cultural heritage, silk-weaving factory, Shchelkovo enterprises, Shchelkovo silk-weaving factory*

## **I. INTRODUCTION**

An important direction in the implementation of the import substitution program, in the development of the economy and welfare of the country, is the revival of light industry enterprises and the production of domestic goods that meet the demand of the domestic market of Russia. It is most appropriate to start the revival with those enterprises that require the least investment and are closer to artisanal production, where individual creativity of the master is possible [1]. First of all, these are weaving enterprises that have demonstrated the wonders of survival in all conditions throughout the history of their existence. So, in the case of military operations in the country, the production of silk changed to cloth or cotton, more popular cheap fabrics during the crisis and the decline of the economy.

And for the improvement of modern cities, it is of great importance to restore ancient enterprises as a national treasure of the country and preserve their city-forming role in the development of the historical city. It is known that by the beginning of the XXI century, the transport structure, developed infrastructure and housing for employees had already developed in historical cities. At the beginning of the XXI century, it

is necessary to reconstruct the potential that can serve the city and its residents for decades to come, while preserving the country's socially important cultural heritage sites.

In this way, textile enterprises could function again and produce fabrics to meet the demand in the domestic market, and with good management, send products for export.

## **II. SILK PRODUCTION IN RUSSIA**

In Russia, the history of silk-weaving manufactories has deep roots. Already in 1625, during the reign of Mikhail Fedorovich, a Velvet courtyard was created on the territory of the Moscow Kremlin, located on the Bank of the Moscow river between the Corner and Tainitskaya towers. The velvet court produced fabrics for clothing only for the Royal family.<sup>1</sup>

After the journey of Peter I to Europe and visiting silk factories in Paris, there are manufactories in Moscow, noble children are sent to study in Italy, France, and the Netherlands to learn weaving [1].

<sup>1</sup> P. G. Lyubomirov Essays on the history of Russian industry in the XVIII and early XIX Centuries. Surf., 1930, p. 105.

The next impetus to the development of almost non-working silk-weaving enterprises is the decrees of Catherine II on new, higher, customs duties on imported silk products. At the end of the XVIII century, artisanal small workshops and individual craftsmen competed with manufactories, which by that time were at least 187 in Russia [2], these are mostly small enterprises of up to 100 workers [3].

At this time, French Lyon silk was recognized as the best in Europe, and the city of Lyon was considered a European center of silk weaving with a high level of modern equipment and advanced technologies in creating drawings, searching for colors and quality of fabrics.

In the Moscow region, by the middle of the XIX century, small silk factories have already reached the European level of silk quality. The developing factories and small manufactories of Bogorodsky district will later be called Russian Lyon, but its fate is extremely tragic in comparison with the French one. During this

period, Bogorodsky district has many small artisanal enterprises, all with manual labor and one watermill, and fabrics are created unique, beauty and quality win at international exhibitions.

The number of silk-weaving factories grew during periods of economic growth in the country and declined during difficult times, although many factories simply switched to other raw materials without stopping work.

There are several directions of reconstruction of weaving enterprises, mainly buildings and structures for industrial purposes receive new functions and serve as public centers of cities. In the last decades of the XXI century, many weaving enterprises, instead of restoring production, are re-profiling their production areas for cultural, commercial, and entertainment complexes. Positive experience of such renovation of urban spaces of historical cities – former industrial enterprises, port terminals, barracks areas or outdated transport hubs exists in Germany, the Netherlands, France, Spain, Italy and a number of other countries.



Fig. 1. Partnership of silk manufactory, now the Business center of Lefort.

In the center of Moscow, in Lefortovo at the end of the XIX century, several silk-weaving factories merged into the "Partnership of Silk Manufactory". Before the revolution, this Association was one of the largest silk producers in Russia with a full production cycle. The company was revived after the revolution and the great Patriotic War and in the 90s of the XX century was declared bankrupt. After that, it was purchased, reconstructed, and now there are modern office buildings on the territory of the former partnership.<sup>2</sup>

The building, built on the banks of the Yauza (the territory of modern Moscow Lefortovo district) in 1914 by the famous Russian architects V. G. Zalessky and I. I. Kondakov (production building) restored, work to

change the functional purpose and now buildings are downtown.

Interesting proposals for repurposing the old enterprise are the fact that a large area of the former industrial production has a cultural center, exhibition and trade pavilions, and Museum halls.

But there is another direction-the preservation of production, where the adjacent territory is undergoing reconstruction, mainly for the development of tourism. Many factories of the XIX century experienced a period of prosperity and decline, and some of them continue to work to this day and please customers with their products.

For example, the factories of Florence and Venice have not undergone major reconstruction for more than 300 years and continue to function successfully. "Fig. 2" shows the halls of Italian factories for the production of unique silks [2].

<sup>2</sup> The factory produced ribbons and fabrics such as velvet, plush, foulard (a light fabric made of silk, half with cotton paper), FAI, satin, brocade, glazet, as well as various types of furniture upholstery. The products of the silk manufactory Association in Moscow have been repeatedly awarded high awards at all-Russian and international exhibitions. So at the famous world exhibition in Paris in the section "Silk and silk fabrics" the company was awarded the most prestigious-the highest award of this largest industrial forum.



Fig. 2. a) silk-Weaving workshop in Venice, b) silk-weaving workshop in Florence.

In Italy, lake Como still produces silk fabrics for more than 700 years. There were no powerful enterprises created here, there is no monopoly on production, but there is a healthy competition of small producers and each master is responsible for the quality and beauty of products, putting his own name or brand on the fabric.

In our domestic production, each factory can serve as an example of survivability in the most difficult conditions. They were able to revive after the revolution and hunger strikes, to work during the great Patriotic war, but not all were able to survive the crisis of the 90s. It is time to revive factories and manufactories, to revive the former glory of domestic silk.

In Russia, at the beginning of the XVIII century, the center of the silk-weaving industry, Bogorodsky district, was created, which was called the Russian Lyon. 50 years after the creation of the first manufactories, they are already competing with the best factories in France, Italy, and the Netherlands. Each international exhibition brings Russian factories gold and silver medals, contracts for the supply of fabrics to European stores.

The history of Russian silk weaving began after 1720, when merchants and wealthy peasants became the founders of the silk-weaving peasant industry in Grebnev, Fryazin, and other villages in Bogorodsky uyezd [3].

This happened thanks to Catherine II, who signed a Decree allowing farmers to start factories or run family production for the manufacture of goods for sale.

**III. SILK PRODUCTION IN THE FACTORY OF KONDRUSEVICH**

On the territory of the modern city of Shchelkovo, Moscow region, there were several villages and three silk-weaving factories and many small private workshops. Factories were located on the banks of the Klyazma river and now, at the beginning of the XXI century, two of them have become non-functioning industrial territories. Only one of the factories is the Shchelkovo silk-weaving factory, which successfully operates on part of the territory of the once huge production of silk fabrics.



Fig. 3. The location of the factory on the Topographic map of the surrounding area of Moscow in 1852 (highlighted in red)

In the village of Shchelkovo, one of the most famous and successful suppliers of silk fabrics of her Imperial Majesty was the Kondrashev family. Natives of serfs, hardworking and smart, they were able to make a fortune thanks to the silk manufactory, which

first worked as a family, then employees, and at the end of the XIX century, a brick factory was built with a pier, housing for workers, a school, a hospital, and a developed infrastructure [4].



Fig. 4. a) Shchelkovo silk-weaving factory, b) the facade of the building, C) housing for workers.

Kondrashov factory products were awarded many awards and medals at industrial exhibitions in Russia and abroad, certificates of honor and gratitude for the quality of the material. Industrialists and patrons built schools, hospitals and residential homes for their

factory workers. The walls of the Imperial palaces were covered with Schelkov fabrics, the Royal family wore a dress made of their finest Kondrash silks, and ordinary peasants could afford festive scarves and ribbons [5].



Fig. 5. a) the Office of the Grand Palace of Peterhof, b) the entrance standard Peterhof, c) the Toilet room of the Grand Palace, Peterhof.



Fig. 6. a) Nikolai Nikolaevich Kharlamov, Russian girl, 1888, b) Franz Kruger, Portrait of Empress Alexandra Feodorovna (1798-1860).

The development of production contributed to the growth of adjacent residential areas with developed infrastructure. The integration of small artisanal industries into large factories and manufactories at the end of the XIX century laid such a potential that even now, in a period of decline and abandonment, factory buildings have huge opportunities for revival [6].

On the territory of these factories, it is necessary and possible to recreate the weaving industry in old abandoned, but still structurally strong and suitable for long-term use structures.



Fig. 7. a), c) Shchelkovo silk-weaving factory. Current state, b) the working shop of the Shchelkovo silk-weaving factory.

During the reconstruction, new buildings can be built, and then the old ones can serve as a Museum, an educational center. Preserve the potential laid down in Bogorodsky uyezd, when unique samples of fabrics were created that are not repeated anywhere in the world in terms of strength, quality of dressing, quality of coloring and originality of coloring [7].

Factories in Russia were usually built of red brick near the river pier for the convenience of transporting goods. they were located on the high banks of rivers that served as a beautiful road in winter and summer, the most reliable transport artery. They formed a beautiful panorama of the city, which a hundred and fifty years later, thanks to the preserved factory buildings, attract the attention of tourists. Such complexes, after skillful restoration and reconstruction of buildings, will be able to accept not only factory workers, but also tourists, participants of festivals, exhibitions, and various events that attract a large number of people.

For the urban situation of the city, it is valuable that the old factory buildings still preserve the harmony of

the unity of nature and architecture with their scale and quality, despite the abandoned appearance of the structures. Professional restoration and reconstruction of factory buildings and new buildings created on a large scale in the urban structure will create a harmonious unity of the image of the industrial center. The construction of new buildings and factory buildings is possible only with the use of those proportional and artistic patterns in industrial architecture that existed in the late XIX - early XX century.

To create artistic perfection of the urban ensemble of the historic centre along the river Klyazma, the unity of the water and green environment, renovated industrial areas, cultural sites, educational centers and places of worship. It should be noted that the open spaces of the city in the form of squares, green lawns, and squares are of great importance. The planning and artistic use of the terrain, improvement of the environment, and the presence of open green spaces are important.



Fig. 8. a) city street Shchelkovo, adjacent to the factory, b) the Coastal area next to the factory

The large-scale urban environment of factory districts can please citizens and tourists for hundreds of years, if urgent measures are taken to reconstruct and restore the industrial and residential areas of the historical part of the city. The interiors of the working workshops demonstrate the excellent quality of structural elements that can serve the production of fabrics for hundreds of years.

The restored and newly created buildings of the Shchelkovo silk-weaving factory will be able to accommodate new equipment to increase the load on the factory and produce high-quality products in a large volume. In the now abandoned industrial area, you can create scientific, business and community centers with training classrooms, a developed system of secondary and higher technical education. The construction of a developed infrastructure with entertainment, shopping and sports functions will attract young people to the city, and decent wages and good housing conditions will contribute to the development of the city.

In the middle of the XX century, the labor collectives of silk-weaving enterprises were replenished by specialists from secondary technical and higher educational institutions, whose practical classes during the educational process were like in factories under the guidance of a professional, masters with long experience. This is the only way to train specialists to create unique fabrics and be true masters of their craft.

Now, using the example of restoration and reconstruction of an existing silk-weaving factory, this tradition can be revived. On the basis of old restored buildings, with the use of advanced technologies and modern equipment, construction of comfortable housing with developed infrastructure, it is possible to restore the former glory of domestic silk products.

#### **IV. RECONSTRUCTION OF THE FACTORY IN SHCHELKOVO**

All the old factory buildings, located on the river Bank, formed a picturesque panorama of the industrial city of the XIX Century. Now Shchelkovo is a modern industrial city with high-rise buildings, but it is still possible to revive the panoramas of the city formed by the river surface, reviving historical industrial buildings, creating cozy residential areas. This will attract tourists to the city, many citizens will get jobs, and children and young people will get professional education on the production base of the restored factories.

Restoration of the factory will require improvement of the urban environment, so first of all it is proposed to combine the green spaces of the city with the coastal territory with pedestrian alleys, create new squares, green recreation areas and parks. The transport artery linking the industrial area with housing and the river

has been transformed into a green street with sidewalks and green areas.

It is proposed to increase the number of green spaces in the surrounding area, creating a sanitary protection zone between the industrial area and housing. In the coastal zone of the river, create a city Park, improve green spaces and install light wooden structures in the form of cafes, gazebos, benches for recreation, separate the sports field with a hedge from the General territory of the Park.

Preliminary examination of the structures of the textile factory "Shchelkovo silk-weaving factory" showed that despite long-term operation, these buildings can be restored and maintained for many years in excellent condition; the main structures, cast-iron supports and stairs are still suitable for use, the floors can withstand significant loads and, if properly operated, can serve for many years.

In the process of restoration and reconstruction of factory buildings, replacing dilapidated buildings with modern ones, residents will not leave their hometown in search of earnings, they will be able to work at the updated factory. At the same time, new residential buildings will be created that will meet the most modern requirements and meet the established understanding of a high-quality residential environment.

Young professionals who are required by the updated factories can be attracted to work with interesting, paid work, housing, developed infrastructure, the possibility of comfortable rest, etc.

It is proposed to build 3-4 storey buildings with a normal level of comfort of housing, the availability of land for residents of the house, creating a comfortable comfortable environment in the local area (Fig.9). The figures show proposals for housing construction.



Fig. 9. Sketch of the facade of a residential building. Marha's proposal (student K. Kevvai. Teachers B. Gandelsman, E. Malaya, F. Kudryavtsev.)

The revival of domestic light industry enterprises will help to restore the former glory of fabrics made of natural materials, which were famous for Russian markets. The updated factories will allow: to set up production of products that are competitive on the world market, provide jobs for a large number of people, increase the level of education of specialists, and develop housing construction and infrastructure.

**V. CONCLUSION**

The powerful potential of the old factory in the process of reconstruction, using the latest equipment and modern achievements of science and technology, can be transformed into a competitive enterprise that replaces imported goods in the domestic market [8].

The creation of new production facilities based on factories of the XIX century will not only revive and increase production, but will preserve the industrial heritage of our country. The updated harmonious urban environment of Shchelkovo with the use of old industrial buildings and modern buildings will significantly enrich the modern city with the opportunity to create jobs, develop tourism business, professional training of young people and Patriotic education.

When restoring the old buildings of the enterprise and building new workshops with the most advanced technologies, it is necessary to create panoramas along the river and individual streets, observing the requirements of compositional unity in a large-scale urban environment.

It is proposed to build comfortable housing for factory workers on the territory freed from the dilapidated 1-2-storey building, including by increasing the number of storeys to 3-4 floors and, accordingly, the number of apartments. A convenient layout will allow you to create not only comfortable apartments, but also to save building space and settle more people.

**References**

- [1] P. G. Lyubomirov, *Essays on the History of Russian Industry in the XVIII and Early XIX Centuries*. Surf., 1930. p. 105, p.108, p.120, p.128 [in Russian].
- [2] *Ibid.* P.108.
- [3] *Ibid.* P.120.
- [4] Antico Setificio Fiorentino. Weave Like in 1786 [Electronic resource] Available at: <https://therakedaily.ru/articles/antico-setificio-fiorentino-tkat-kak-v-1786-m/> (accessed: 25.10.2019).
- [5] P. G. Lyubomirov, *Essays on the History of Russian Industry in the XVIII and Early XIX Centuries*. Surf., 1930. p.128 [in Russian].
- [6] G. Rovensky, *The Kondrashevs are Silk-Weaving Manufacturers from the Village of Fryazino, and Their Descendants*. Shchelkovo-Grebnevo-Moscow. The club "Historian" of the science city of Fryazino, 2013 [in Russian].
- [7] G. Rovensky, *Shchelkovskaya Antiquity. A Brief History from Ancient Times to the Status of the City and the XXI Century*. The Science City of Fryazino, Moscow Region-Schelkovo, 2013. P.1-2. [in Russian].
- [8] J. E. Volodarsky, *Studies on the History of Russian Cities (facts, generalizations, aspects)*. M. Institute of Russian History of the Russian Academy of Sciences, 2006 [in Russian].
- [9] *Factory Industry and Trade in Russia. This is the basis of the General map of the factory industry of the Russian Empire*. PUBLISHED By the Department of Trade and Manufactures of the Ministry of Finance. Chapter I. The Manufacturing industry (Article of Professor S.-P.-B. Theologische Institute N. P. Language), Production of cotton products, St. Petersburg., Isograf V. S. Balasheva in K° (Catherine Cohn., 80) I V. F. Demakova (Novy per., 7), 1893, p.1-2 [in Russian].
- [10] A. S. Vereshchagin, L. D. Matveeva, *Essays on the History of Russian Entrepreneurship*. Ufa: UTIS, 2001 [in Russian].