«AN APPEARANCE CONSISTENT WITH THE CAPITAL CITY»

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ABSTRACT

120 years ago, Emperor Nicholas II gave a green light to the construction project of Moscow Circle Railway. The uniqueness of this road was that, as an object of the urban environment of the capital city, it should have an architectural ensemble of buildings, railway stations, infrastructure facilities, bridges, suitable for status purposes, and carry out passenger and freight traffic that meet the needs of the population. The article shows the main stages of project implementation, features of architectural solutions, a retrospective of development of the ring railway system up to the present day, including the largest reconstruction and modernization works of recent years.

Keywords: Moscow, circle railway, history, construction, architecture, creators, stations, bridges, reconstruction.

Background. *One of the unique structures of the railway transport system at the beginning of the last century was Moscow Circle Railway (MCR). Its construction was approved by Emperor Nicholas II in 1897. (On November 7, 1897 special governmental meeting attended by the Emperor Nicholas II recognized «it desirable to start construction of Moscow Circle railway». The translation of the name of the railway may be different, depending on Russian words used respectively now and then: «circle» (from «circumference») or «ring» (directly from «ring»). So even nowadays the railway is called Central Ring either Circle, and the name of Moscow Central Circle is used more often – editorial note).*

The winner of competition for construction of the railway around Moscow was the project of the architect Petr Rashevsky. The construction lasted six years – from 1903 to 1908. During this time, a two-track railway ring was built 50,6 versts long, which is approximately 54 kilometers.

The circle railway was of great governmental importance, therefore leading Russian engineers and architects were involved in its construction. The expenses were not stingy, because Nicholas II personally inscribed on the title page of the project of Rashevsky: «The road must have a look consistent with the capital city». Bridges were designed by the well-known throughout Europe bridge-building engineers N. A. Belelyubsky and L. D. Proskuryakov, professor of architecture, member of the Academy of Arts A. N. Pomerantsev was responsible for the architectural concept of the structures.

Objective. *The objective of the authors is to consider the history of creation of Moscow Central Circle, formerly Moscow Circle Railway.*

Methods. *The author uses general scientific methods, historical retrospective method, comparative analysis, evaluation approach.*

Results.

Landmarks of creators

Alexander Nikanorovich Pomerantsev (1849–1918) graduated from Moscow School of Painting, Sculpture and Architecture in 1874, after which he entered the architectural department of Imperial Academy of Arts in St. Petersburg, finishing it with a gold medal of the 1st degree for the project «Railway station in a park near the capital». In 1887 he received the title of academician of architecture. Pomerantsev taught at the Academy, in parallel from January 1897 served as the architect of the school council under the Synod.

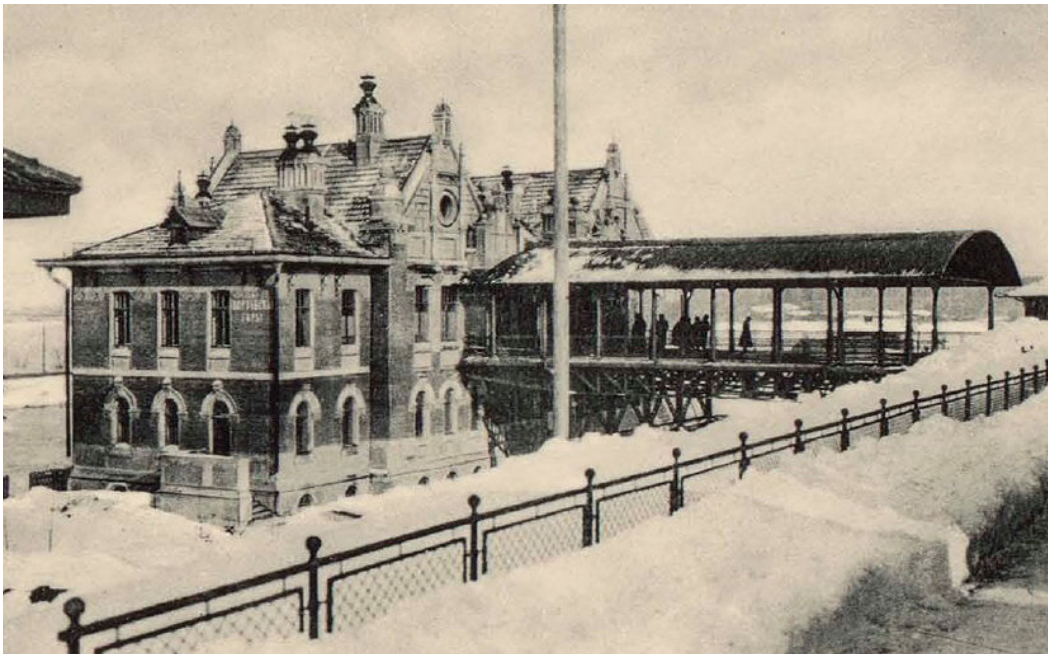
In 1895–1896 he was the chief architect of the All-Russian Industrial Exhibition in Nizhny Novgorod. He completed the general layout of the exhibition and the projects of main pavilions (Main, Central Asian, Machine, Arts). Most of his projects were innovative for the 1890's with metal frames, which was developed by V. G. Shukhov. The most famous of the buildings of Pomerantsev were Upper Trade Rows (later called GUM), built in Moscow in 1889–1893 – a project that won an open competition and complemented the ensemble of buildings in the «Russian» style near Red Square. He also executed the architectural part of the monument to Alexander III near the Cathedral of Christ the Savior (installed in 1900, demolished in 1918), designed three cathedrals in memory of Alexander Nevsky – in Moscow, St. Petersburg and Sofia.

Nikolai Apollonovich Belelyubsky (1845–1922) in 1867 graduated from St. Petersburg Institute of Railway Engineers, from 1873 – a professor at this institute. According to his projects, a number of large metal railway bridges across the Volga, Dnieper, Ob, Belaya and other rivers were built. Belelyubsky developed a method for rapid replacement of wooden bridges with metal ones without interruption of movement, and made significant improvements in the design of metal spans. He supervised the first in Russia testing laboratory of building materials. The methods of testing the materials that he proposed entered into international practice. Great merit belongs to him in the study of mechanical properties of reinforced concrete. Published by the professor «Course of Construction Mechanics» became the first full course in Russian on this discipline. More than 100 projects of large bridges were developed by N. A. Belelyubsky personally and under his leadership.

Lavr Dmitrievich Proskuryakov (1858–1926) after successful graduation from St. Petersburg Institute of Railway Engineers in 1884 receives a place in Ministry of Railways, in the service of railways. Then he returns to the Institute for teaching and research work. Having defended his doctoral thesis, in a short time he becomes famous scientist and specialist in the field of construction mechanics, and the problem of bridges attracts him most of all. Subsequently, L. D. Proskuryakov becomes a professor at the Imperial Moscow Engineering School (MIIT).

He was the first in Europe to abandon the lattice bridge trusses, which were difficult to be designed and calculated. Designing a truss with a single triangular, powerful grid, and based on this innovation, building a railway bridge across the river Sula in 1887, Proskuryakov marked the beginning of a new trend in bridge construction.

All scientific and practical surveys of the engineer were aimed at creating an ideal bridge



MCR. Vorobyovy Gory. 1907–1908.

structure. And it was born. It became the bridge built under his calculations in 1898 across the Yenisei River. In the design of the superstructure (144,5 m), as ascertained by the scientists, Proskuryakov used a completely new design – the original truss with subdivided panels, for which he received the highest award at the Paris exhibition of 1900 – the Great Gold Medal.

Architectural unity

Station buildings of Circle Railway passing through the territory of the capital, are different in nature of forms and details, however, are similar in architectural style. The unity of style is facilitated by small dimensions of buildings, their chamberiness, commensurability of details with common volumes.

Stations of Moscow Circle Railway were entire complexes of buildings for various purposes. Many of the objects have not reached our time, but the preserved buildings are now of architectural value. The stations were designed by architects A. N. Pomerantsev and N. V. Markovnikov, with participation of I. M. Rybin.

Ensemble of Moscow Circle Railway is unique example in Russia: in its original location outside the city, and the composition of buildings and structures related to the commuter, it could not be regarded as belonging to the capital city, but was perceived, however, as an exclusively urban ensemble (the only completed project of this kind in Russia), designed to serve «to beautification of the city».

All passenger buildings were located inside the ring, from the side of the city, and commodity platforms, warehouses, station tracks – from the outside. The count of the vesrsts of the new railway began from the point of its intersection with Nikolayevskaya railway, clockwise. The small ring turned out not quite round. In the north-west it stretches for 12 kilometers, and in the south it passes 5 kilometers from the Kremlin.

On July 19, 1908 the first train moved on Moscow Circle Railway. The builders transferred the object to management of Nikolayevskaya Railway, and its operation began.

Even then, contemporaries understood the uniqueness of the implemented project. A beautiful album of MCR facilities was published, which included the best examples of architectural and construction art.

Most of the stations and structures were built according to standard designs (except for Likhobory and Vorobyovy Gory) in red brick with white details and tiled roofs. The tile was bought in Warsaw. The stations were equipped with specially made oak furniture, electric clock from Pavel Bure frim (the only surviving original copy of this clock is in the office of the Presnya station head). Station areas were illuminated with sprayed gas of the engineer Krzeminsky's system.

The complex included ticket offices, waiting rooms. The premises were heated by Dutch and Russian stoves, electricity was provided. Everything was modern, advanced – the telephone line of the firm «L. M. Erickson and Company», the Webb–Thompson electric system with semaphores, the Max–Judel motion control system.

At the stations were opened buffets with glaciers for storing provisions, as well as «stony heated privy». An entire army worked here – switchmen, station watchmen, telegraphists, clerks, lampists.

The gardens became an indispensable decoration of the stations. There were published guidebooks and albums with the history of Moscow and a description of historical monuments and commercial and industrial establishments located in the vicinity of Moscow and adjacent to the ring road, with drawings and a map.

In general, the architectural ensemble of MCR is in the style of Russian modern.

Modern is translated from French as «contemporary». In different countries this style was called in its own way. In France – Art Nouveau, in the USA – Tiffany,

K. Fisher. Vorobyovy Gory station, 1907.

Likhobory.

in Germany – Jugendstil. Modern became the last classical architectural style. It arose at the turn of XIX–XX centuries and existed not very long – about twenty years.

Characteristic features for modern were replacement of clear geometric shapes with smoother and freer lines inherent in living nature; use of new materials and technologies (use of concrete, metal and glass), as well as a large number of decorative elements, both in the design of facades and in interior decoration. And mostly they were floral ornaments (irises, climbing plants, algae), animal figures – everything that is related to nature. In the early modern, the decor was often too abundant, in contrast to the late, oriented on laconic decorations used. Modern became a style that combined the desire to combine practicality and art, make customary and everyday more beautiful.

Complex buildings in the modern style are compact and designed for circle perception as a sculpture. All fourteen stations with adjoining numerous structures and two stopping points (Potylikha and Voennoe field) were erected according to a single architectural plan. Many buildings therefore may seem similar, but we recall that the original idea of construction suggested to reflect the characteristics of the terrain in the decoration of the facades. It managed to be done. Each station is, as it were, a concentrated architectural image of the features of the locality where it was located.

«The earrings to all sisters»

Likhobory station was designed as a central station on Moscow Circle Railway. In the 1900s a large complex of structures was built here. By the nature of the work – this is a section station of the 2nd class. It is located on the 52-kilometer of the ring.

In addition to the passenger pavilion, the locomotive depot housed workshops for repair of locomotives and cars, oil pumping installation, smithery, home of the road manager, machinists and others.

The station was opened in 1908 and its name is due to the villages of Upper and Lower Likhobory, between which the line passed. Station buildings along pr. Cherepanoveh survived: on the facade of the former home of the chief of the traction section in a small niche between two windows, the symbol of wisdom is the figure of an owl, then the well-preserved station. The authorship of the famous architect F. O. Shekhtel is attributed to «House with an owl».

With the locomotive depot «Likhobory» – let us single out this point – the museum of Moscow Circle Railway is located.

Ugreshskaya, the ninth station and the second most important station of Circle Railway station, stands diametrically opposite Likhobory station. On Ugreshskaya the whole settlement from apartment houses and service buildings has remained: a station, apartment houses, a bath, a receiving room, the house of the assistant of the chief of track service. On the opposite side of the station there are a water tower and a military food station.

Ugreshskaya station is named after the nearby Nikolo-Ugreshsky monastery, founded in 1380 by Dmitry Donskoy. In its appearance, the forms of the monastic buildings are partially reflected.

This area was considered the «most deserted and outlandish» part of Circle Railway. Apparently, that's why it made a strong impression on contemporaries, who left a lot of notes about this station.

A certain journalist with the initials V.G. wrote about the first trip of 1908: «We crossed the Semyonovskaya connecting line of Moscow-Kazan railway, finally entering the area of marshes, waste deposits and all abominations. On the right there are irrigation fields, old city slaughterhouses, waste deposits from which one cannot breathe, and on the left there is a cemetery, a cemetery, new waste deposits, the Sukino marsh. And in the middle of these stinking Palestinas there is a station ...»

Behind the apartment houses (Ugreshsky pr., 6) there is a rebuilt bath house, next to which an informal railway transport museum has been created for several years by the efforts of local bikers. First there was a narrow-gauge train from locomotive TU6A and passenger car PV-40, in winter of 2013 a real rarity – a subway car of type A of the 1935 manufacture year was added.

On the opposite side of the station there is a water tower (Ugreshskaya street, 3, str. 5), built according to a standard project based on Gothic architecture. The tower is located on the territory of the military assembly point, on the order of which in 2012–2013 its scientific restoration was carried out,

Passenger building at the station Ugreshskaya, 1907.

and now it can be considered as the best preserved premise of Circle Railway.

Near the tower, behind the concrete fence, there is a military food station for feeding soldiers from military echelons. It consists of a modern-style kitchen, a dining room for 600 people, a bakery, warehouses, a commandant's house, barracks for the team, and a toilet for 52 people. All buildings are accessible for external inspection.

Vorobyovy Gory station is located in Luzhniki area, which got its name from the flooded meadows that were flooded during the spring floods of the Moscow River. The station served the connecting branch with Bryansk Railway, which began from the stopping point of Potylikha.

The railway passes through Luzhniki on a high embankment. This is due to frequent flooding, which can damage tracks and interrupt movement of trains. The second reason for construction of the embankment is too large slopes, which would have to be arranged to pass the tracks in one level with the surrounding terrain.

This arrangement of tracks necessitated the need to lift passengers to the level of the embankment to access the trains. For this purpose, a staircase was built inside the station building, and the second floor served as an exit to the platform. Passengers entered the platform using the metal bridge of console system. It was covered with a light semi-circle canopy, supported by elegant columns with Corinthian capitals

The station on Vorobyovy Gory united all the station buildings. In it there were passenger halls of I, II and III classes, luggage facilities, office of the station's head, corporate apartments, telegraph and the only one on the whole ring buffet. The station, located in the historical district of the capital – on the Khamovnicheskoye field, in the immediate vicinity of the Novodevichy Convent, is a striking example of the pseudo-Russian direction of modern at the beginning of XX century. The project of the station complex took into account the stylistics of the historical monument of XVI century located next to it.

Kanatchikovo is a section station of the 3rd class and is located on the 34th km of the ring. From it departed the connecting branches to the Paveletskoe direction. The station is in close proximity to the historical center of the capital, about 5 kilometers from the Moscow Kremlin. Railway tracks go to Gagarinsky tunnel – one of the longest in the city and the only one on Circle Railway.

The station has preserved the station building, two apartment buildings, the post of central control of railway switches and signals, an abandoned railway half-military barrack. Ten years ago there was also a guard house, but it was demolished, in its place a new building is location.

The station is a two-story building with semi-columns, arched windows, cornices and even two images of lion's heads on the sides of the entrance doors. The station's names were preserved, executed by the «firm» font in the modern style. Above the entrance there is a sign with the altitude of the object above the sea level – 66,3 fathoms.

Inside there were three large halls, very different from each other. In the first class hall in the corner a huge iconostasis gleamed, soft sofas in white linen covers stood. In the second class, the sofas were also, but hard, wooden. In the third-class hall there was absolutely no furniture.

In front of the station remained a passenger platform with a warehouse and lanterns of 1908. Appealing ancient lights are at many stations of Circle Railway (Likhobory, Vladykino, Vorobyovy Gory), but there as such used supports for canopies over the exits to the trains. And only at Kanatchikovo station the lights are real.

Bridges-masterpieces

On the territory of Kanatchikovo station was Sergievsky (Andreevsky) bridge across the Moscow River. And all the bridges on Circle Railway were 72. Of them, only six across the rivers: four across Moscow River and one across Yauza and Likhoborka.

But truly there were only three masterpieces of architecture. No technical progress could withstand their aesthetic charm and therefore by now some of them have split.

Alekseevsky (Danilovsky) bridge – a railway bridge across the Moscow River. It was called Alexeyevsky in honor of the heir to the throne of Tsarevich Alexei. The three-span and longest of all Moscow-river bridges on Circle railway, with a channel opening of 239 m (100 fathoms) and coast spans of 62 fathoms. It was built in 1905–1907 according to the project of engineers N. A. Belelyubsky and N. A. Boguslavsky, as reported by a cast-iron memorial plaque on one of the coastal bridge piers [2]. Span structures are made at the Sormovo plant. The peculiarity of the project was the arrangement of a pedestrian crossing at the center of the bridge between the tusses. On the east side, the bridge was designed according to the outline design of Academician A. N. Pomerantsev with a decorative portal with turrets, spiers, hammered coats of arms and a bronze bust of the heir to the throne Alexei.

In the Soviet era, it was first renamed into Kozhukhovsky, and then, in the 1990's, received the current name – Danilovsky, because Danilovskaya embankment was thereunder, during the construction of the bridge it had not existed yet.

The bridge of the Emperor Nickolay II (also known as Krasnoluzhsky, Bogdan Khmelnitsky) had a difficult service on the 38th kilometer of Moscow Circle Railway since 1907 – freight trains moved along it and pedestrians from Berezhkovskaya embankment to Luzhnetskaya crossed here the Moscow River. A bridge 135 meters long and weighing 1400 tons was built, like his twin Andreevsky (formerly Sergievsky), according to the project of engineer L. D. Proskuryakov and architect A. N. Pomerantsev.

The reconstruction of Circle Railway, which accompanied the construction of the Third Road Ring, required replacement of old bridges, which for hundreds of years were worn out and became dangerous for railway traffic. However, as pedestrian crossings, they could have found a second life. For this reason, in 2000 Krasnoluzhsky Bridge was moved 2,2 km upstream of the Moscow River and installed in a new location, connecting Kievsky Station with Savvinskaya Embankment and Plyushchikha.

The bridge-monument is recreated in all details, including the facing of the supports by an old, but well-preserved and cleaned facing stone, only became covered. Under its translucent coverlet another shopping and entertainment center is located. From Kievsky station entrance is equipped with an escalator, and on the opposite bank there is a lift elevator. The commemorative plaque informs that the bridge was built in 2001 and named in memory of the Ukrainian statesman, hetman of the Ukraine Bogdan Khmelnitsky (1595–1657).

The new bridge became a fragment of the historical Krasnoluzhsky bridge, on which old supports in Luzhniki an absolutely new one was laid. The road bridge of the Third Ring Road was constructed nearby.

Sergievsky (Andreevsky, Pushkinsky) bridge and Krasnotoluzhsky of the same type were built in 1905–1907 according to the projects of engineer L. D. Proskuryakov and architect A. N. Pomerantsev. During the construction, Andreevsky had one main span, covered with a crescent-shaped arch of 135 m long, and two bank piers of 18 m. Outside the arches, on the consoles, pedestrian sidewalks were arranged. The foundations of the bridge rested on the base of wooden piles. Before the restructuring of 1999 they were still in excellent condition.

Originally, the bridge was called Sergievsky, in memory of the Grand Duke Sergei Aleksandrovich, who died by the Social Revolutionary's hand. In 1917, after the February Revolution, it was renamed into Andreevsky –after the monastery (later closed), located on the right bank of the river.

Pushkinsky (Andreevsky) is a pedestrian bridge, built in 1999 across the Moscow River using the old Andreevsky bridge structures. It connects Pushkinskaya embankment of Neskuchny garden with Frunzenskaya embankment.

At the entrance to the bridge from the side of Neskuchny Garden a tablet with a brief history of Andreevsky Bridge is preserved, and therefore on most maps of Moscow and in a number of directories and encyclopedias it is designated exactly as Andreevsky, although its formal name is Pushkinsky.

Conclusion. *The very idea of recreating the passenger traffic on Small Ring of Moscow Circle Railway arose by the beginning of XXI century: a feasibility study and a road reconstruction project were completed in 2000. Then it was supposed to build the third track in the eastern part of the ring with a length of 28 km, build 30 passenger platforms and depots for electric trains. All these works together with electrification were estimated at 30 billion rubles with an estimated payback of 20 years. Then the project was postponed until better times. Now they, we will assume, have come.*

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Article received 21.11.2016, accepted 11.02.2017.