The first builders of the Vladivostok port

M E Bazilevich
Pacific National University, 136, Tihookeanskaya Str., Khabarovsk, 680035, Russia

E-mail: mikhailbazilevich@gmail.com

Abstract. The article is devoted to the professional activities of military, civilian and railway engineers working on the construction of the Vladivostok port in the late 19th and early 20th centuries. Brief information about V.V. Ivanov, V.A. Barry, I.I. Zeestrandt, I.A. Zaborovsky, V.A. Plananson, V.F. Livin is given. The main directions and the results of their work related to the design, survey and construction work on the construction of the facilities for various purposes are considered. It was established that the professional activity of the first engineers-builders of the port had a key influence on the formation of the industrial and commercial infrastructure in Vladivostok, and also contributed to the appearance of two architectural ensembles in the central part of the city: a complex of the Mechanical Plant structures and an ensemble of residential buildings of the Siberian Navy crew.

1. Introduction
The nature of urban, economic and socio-cultural development of Vladivostok at the turn of the 19th - 20th centuries was primarily associated with the geopolitical importance of the city as the main military and commercial port of Russia on the Pacific coast. The presence of an ice-free access to the Pacific Ocean in the Golden Horn Bay and the appearance in 1891 of continuous railway communication with the central part of the country (the Trans-Siberian Railway) opened up great opportunities for the development of trade with Asian countries and the USA, which contributed to the rapid economic and territorial growth of the city. For a long time, the seaport remained the main city-forming enterprise of Vladivostok, setting the main vector of its development.

Currently, the development of the Vladivostok port consists of many multi-temporal buildings, combined by the functional purpose into a single architectural ensemble. Ancient red brick buildings of the end of the 19th century, industrial buildings of the Soviet industrialization era and the modern port infrastructure facilities harmoniously coexist in the port.

The ensemble of the Vladivostok port constructions is the result of the large number of specialists’ activities in engineering and construction profile. In the framework of this publication, in accordance with the stated topic, we will consider the professional activities of the first engineers who worked on the construction of the port and the adjacent facilities at the turn of the 19th - 20th centuries.

2. Literature review
This study was based on a number of previous works by the Russian and foreign scientists, affecting some aspects of the problem studied by the author. The works of V. A. Obertas, V. K. Moor, E. A. Erysheva are devoted to the architectural appearance formation of Vladivostok [1-3]. The authors consider both the individual architectural monuments and the entire architectural ensembles of the main streets in the city. The creative and professional activities of Vladivostok engineers and
architects in the pre-revolutionary period are considered in the works of N. B. Ayushin, V. I. Kalinin, S. A. Vorobyov, N. V. Gavrilkin [4], I. Franken, A. A. Khissamutdinova [5], as well as the author’s own publications in the scientific press [6, 7]. Nevertheless, the available literature does not fully reflect the professional activities of the first civil engineers of the Vladivostok port, as a result of which the problem requires a deeper analysis and further study.

3. Materials and methods of research
The main method of this study was the generalization of textual and graphic material concerning various aspects of the fundamental scientific problem solved by the author of this article. A comprehensive study of the scientific literature and Internet resources on the research topic made it possible to determine the main stages of the Vladivostok port construction, as well as to establish the names of its first builders. The archival research carried out by the author made it possible to identify and enter into scientific circulation the new data on the professional activities of engineers working on the construction of the port in the 19th - 20th centuries. The empirical base of the study was the materials of a field survey conducted by the author in August 2019. As a result, a systematic picture of the professional activity of the first civil engineers of the Vladivostok port was presented for the first time and the significance of their work in the city historical center architectural ensemble formation was determined.

4. Results

4.1. Vladivostok port. Beginning
Vladivostok was founded in 1860 as a military post. The first buildings arose on the northern shore of the Golden Horn Bay. Gradually, the settlement grew, occupying the west coast and rising to the higher tiers of the bay’s hilly landscape. The first marina was located on the coastal sea communications’ present station site; the Siberian flotilla ships came to it, delivering various cargoes necessary for arranging a new post. In 1865, a branch of the Nikolaev Admiralty Plant was opened in Vladivostok, located next to the bay west coast pier.

A landmark event for the city was the transfer in 1871 of the main Russian Pacific port from Nikolaevsk to Vladivostok. From that moment, the headquarters of the military governor, the main naval base of the Siberian military flotilla and a number of naval departments were stationed in the city. The entire Nikolaev Admiralty Plant was also transferred here, and carpentry, rigging, sailing and boat workshops were opened. In 1878, it was decided to transfer the plant from the western to the eastern part of the bay, where the construction of industrial enterprises and facilities for servicing ships of the Siberian Flotilla started [8]. It is noteworthy that not only the military, but also the passenger and merchant ships called at the Vladivostok port (Figure 1). By that time, the Vladivostok population which has already grown to ten thousand people needed a lot of construction and household goods, the delivery of which was possible only by sea.

In the 1890s, along with the railway connection in the region, the new opportunities for the development of trade and entrepreneurial activity appeared. There was a need to separate a territory for the commercial port and organize a special customs zone. In 1896, the work on arranging the coastline near the railway station started, and in 1897 the first docks were laid [9]. Thus, the port territory was divided into two parts, military and commercial.
The planning decision of the Vladivostok port territory is the subject to the terrain. The buildings and structures are located on tiered terraces rising from the water area and are oriented mainly along the coastline direction. From the perspective of studying the pre-revolutionary architecture history, the most interesting is the development of the former military port, concentrated on the northern shore of Golden Horn Bay within the borders of Svetlanskaya, Ekipazhnaya streets and Korabelnaya Embankment. On this site, quite a few examples of industrial and “garrison” architecture of the late 19th and early 20th centuries were preserved, built according to the projects and under the guidance of military engineers - graduates of the St. Petersburg High Scholl of Military Engineers. The Vladivostok port’s commercial part development, on the contrary, is represented mainly by the utilitarian buildings of the Soviet and modern periods. Only a few historical objects have been preserved in this part of the port, in particular, the administrative building of the commercial port, designed by the civil engineer-architect V.A. Planson.

4.2. Contribution to the creation of the Mechanical Plant structures’ ensemble
One of the key figures in the construction history of the Vladivostok port is the military engineer Vasily Vasilievich Ivanov. He received his professional education at the St. Petersburg High Scholl of Military Engineers, which he graduated in 1879 in the first category, after which in the same year he was sent to serve to Vladivostok at the Department of Eastern Ocean Ports [10]. In total, V.V. Ivanov had been serving for more than twenty years in the Far East. All this time he was engaged in designing and arranging the territory of the Vladivostok port and its environs, having started the work as an ordinary engineer, and having risen in service to the position of the chief port construction engineer. In 1902, V.V. Ivanov was awarded the rank of major general and soon left the Far East, having been appointed to the head post of the department of the Sveaborg fortress in the Finland military district [11].

Authorship of V.V. Ivanov in Vladivostok owns the former building of the mechanical plant building and the dry dock named after Tsarevich Nikolai.

The construction of the mechanical plant building took place in 1883–1887. Its one-story brick rectangular volume is an example of the so-called “garrison architecture” with the characteristic use of the front red brick trim in the facades’ design. The walls are cut through the high, elongated window openings with arched and semicircular endings. A characteristic feature of the structure is the use of buttresses, which give its strict volume special expressiveness. Their presence is due to the use of large-span structures to overlap the workshops and the need to strengthen the bearing walls.

The construction of the plant continued in the 1900s, when after V.V. Ivanova from Vladivostok higher in relief were built a sailing, painting, machine-tool assembly workshop and “Shefner barracks”, which are the examples of Far Eastern eclectic architecture with the elements of neoclassicism and “garrison architecture” in the facade decoration.
The most large-scale construction of the port is the dry dock named after Cesarevich Nikolai. The construction of the facility was carried out by Chinese workers in the period 1890-1897. The construction met all the engineering requirements of its time and could receive the largest warships. So, immediately after the completion of the dock construction on October 7, 1897, the armored cruiser Dmitry Donskoy entered it [12].

On the west side of the dry dock there are two buildings of the former workshops. These two-story buildings, like the rest of the port building, being built in the pre-revolutionary period, are made in the “brick” style, which allows us to talk about the stylistic unity of the historical architectural ensemble (Figure 2).

During the Civil War, the work of the Mechanical Plant continued. In 1918, the railway engineer Vladimir Andreevich Barry conducted a survey of port workshops for their reorganization. As a result, the Far East Shipbuilding Yard was created on the basis of the Mechanical Plant, and V. A. Barry was appointed as a chairman of the board. He held this position not for long. In 1921 he emigrated to Harbin, where he was enlisted in the technical department of the Sino-East Railway Board. [13].

Figure 2. The territory of the Mechanical Plant and the dry dock named after Cesarevich Nikolai in photographs of the early 20th century

4.3. Construction of the Siberian Navy crew residential buildings’ ensemble

The constant presence of navy forces in the Vladivostok port required not only ship servicing facilities, but also an appropriate housing stock to accommodate the naval crew. So, in 1903, on the even side of the main street of the Svetlanskaya city in the Dry Dock area, the construction of outbuildings started for the Siberian Navy crew families and single officers’ residence. The work was carried out under the guidance of the construction commission of the Vladivostok port on the projects of military engineers I.I. Seestrandt and I.A. Zaborovsky (the author of one three-story outbuilding at Svetlanskaya Str.,76). All the outbuildings are one, two and three-story buildings rectangular in plan, built in the same style using the neoclassicism motifs in facade plastic and decor elements. All buildings have a symmetrical character of volumetric-spatial composition and three-part division of the street facades [14]. The ensemble also includes the buildings of the Vladivostok Port Authority and the Naval Assembly.

The port administration building was constructed according to the design of II. Seestrand in 1903. Its two-story, L-shaped volume plan is located on the turning point of Svetlanskaya and is a kind of accent in the perspective of the street. The facades of the building are symmetrical, the wall divisions are made in the order system proportions. The corners of the ground floor are accented with rust, the wide entablature in the crowning part of the building is decorated with stucco molding. The compositional center of the volume is the octagonal dome, emphasizing the main entrance [15]. Of course, the use of neoclassicism motives and the rigor of the imaginative decision as a whole were characteristic of the military structures built throughout the country, including the Far East. Confirmation of this is the administrative and residential buildings of the Vladivostok serf administration in the Russian Island and the construction of the Amur Engineering Distance in Khabarovsk. It is noteworthy that for the Vladivostok buildings of the military department plastering
of street facades was characteristic, while in other cities of the region, the properties of open decorative brickwork were used for their decoration.

Against this background, it should be separately noted that the Maritime Assembly building (1906), unusual in its architecture, is somewhat knocked out of the general style of the ensemble, sustained in the strict classicism forms. The spatial solution of the object is based on a combination of two different volumes - the main structure and a small tower with a pointed tent (Figure 4). The bulk of the structure is covered by a half-hip roof, which has strong outriggers supported by the carved wooden brackets. The frame pillar construction of the walls gives special expressiveness to the building [15]. The construction of the ensemble was completed in 1910. The structures’ complex plays an important role in shaping the silhouette of the central Vladivostok street – Svetlanskaya street, as well as the panorama of the city from the water area.

4.4. Contribution to the commercial port development
As already noted, work on the commercial port territory arrangement started in 1896. The railway engineer Vladimir Vasilievich Sakharov was sent on a mission to Vladivostok specially for these arrangements, while he was serving in the Society of the Moscow-Kazan Railway [16]. Before that, he already had to carry out similar work in Murghab, Poti, Yeysk. In Vladivostok, it was rather difficult to arrange the embankment due to the lack of technical means (excavating machines, excavators and other similar machines and devices). The urgent orders for these mechanisms had to be sent to the foreign factories, and then assembled locally. At the same time V.V. Sakharov organized the exploration work in the bays adjacent to Vladivostok in order to draw up a general design of the port, into which the embankment was to be integrated.

According to the memoirs of contemporaries [17] V.V. Sakharov looked at the creation of a port project in Vladivostok, not only from the technical, but also from the economic and domestic point of view, collecting information on the trade needs, the features of the city development. As a result, by 1898 V.V. Sakharov had developed a detailed design for the Vladivostok port. By this time, a special
independent port was also developed and started by construction also for the ocean steamboats in the Vladivostok Bay, at Egersheld Cape for the Chinese Eastern Railway [11]. In the same year, an engineer was called to St. Petersburg to discuss a port project in the Dalniy city, and later was sent there to monitor the implementation of engineering construction works. The work started by Sakharov in Vladivostok and was continued by the civil engineer Vladimir Antonovich Plansom [5]. In 1899, immediately after graduating from the St. Petersburg Institute of Civil Engineers, he was sent to Vladivostok, where he joined the Ussuri Railway Administration. Later, he worked as an architect at the Oriental Institute and was engaged in private practice, leaving a lot of buildings expressed later in their city’s architecture.

In the territory of the Vladivostok port, V.A. Plansom owns the design of the Vladivostok Customs building and the administrative building of the commercial port.

The design of the customs building, which was planned to be built on Aleutskaya Street on a site belonging to the Ministry of Railways, was developed in 1911. The surviving drawings give an idea of the architect’s plan. V.A. Plansom designed a two-story, L-shaped brick plan with unplastered walls and a hip metal roof. The entrances were conceived in weakly extended risalits, the corners of which were framed with rust. The plastic study of the main facade is made in the style of eclecticism with modern elements (Figure 5). This project was never implemented, since the building should have accommodated not only the customs officers, but also the Railway Assembly with the railway school. The adjustment of the project was performed by another civil engineer, the Primorsky regional architect V.F. Livin (Goldenstedt). After completion, the height of the floors and the object’s architecture nature have changed. In the figurative solution of the facades, Art Nouveau elements are also used, which are manifested in the decor and the shape of windows characteristic of this style. The compositional solution of the street facade is based on the use of rhythmic rows of windows and piers. The central part is flanked by two wide rusticated risalits, indicating entrances and stairwells. The risalits are crowned with attics, reinforced by powerful wide pylons (Figure 6). The railway assembly in the building was not located for long, with the events of the October Revolution the object was completely transferred to the Vladivostok Customs.

The administrative building of the commercial port (1914–1916) is a L-shaped plan, a two-story building for the customs department of the ship. The compositional solution of its facades, which are equivalent from an architectural point of view, was based on the rhythm of vertically elongated arched windows, framed by pediments at the level of the second floor. Contrasts of unprocessed red brick walls with smooth gray plastered surfaces of niches and decor elements gave extra expressiveness to the volume. Currently, all walls are completely covered with plaster and painted in one tone. The main entrance was previously located in risalit, accented by a high attic. Currently, the entrance is through the vestibule, attached to the staircase from the back of the building, and a third, attic floor has been added. As a result of such transformations, this beautiful historic building has lost its expressive appearance (Figure 7).

Figure 5. Project of the Vladivostok Customs building, architect V.A. Plansom, 1911
Figure 6. The former building of the Railway Assembly, architect V.F. Livin, 1912

Figure 7. The administrative building of the commercial port of Vladivostok, architect V.A. Planson, 1914-1916. Original appearance and current condition

5. Summary
The professional activities of the engineers who worked in Vladivostok in the 19th-20th centuries, related to design and survey work and the construction of various facilities, had a key impact on the Vladivostok port development as well as its adjacent territories. Thanks to their efforts and talent, industrial enterprises for servicing Pacific fleet vessels started operating in Vladivostok, the infrastructure of the commercial port was formed, the customs facilities were built, work was done to strengthen the shores of the Golden Horn Bay, and the city embankments started being constructed. As a result, two architectural ensembles formed in the central part of the city, which are currently included in the region’s registers of historical and cultural monuments. The buildings of military and civil engineers preserved on the territory of the Vladivostok port provide valuable material for studying the region architecture history, as typical examples of the industrial, garrison and commercial architecture of Russia in the pre-revolutionary period.

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