

# Epoch and School: Beginnings of Architectural Education at the Riga Polytechnic

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**Abstract** – In the mid-19th century, European countries underwent significant changes in their economies. To a large extent they were facilitated by the development of railways. The ability to transport goods quickly and cheaply by land facilitated industrial development and urban growth. The growing needs of the economy created the need for educated specialists who could successfully meet the increasing demands. Riga was not an exception in these processes. A decision inspired by local entrepreneurs was made to educate specialists locally instead of attracting them from other countries. Established in 1862, the Riga Polytechnic was the first institution of higher technical education in the Baltic region. Already in the first decade of its operation, the Department of Architecture (DA) was opened. This study is aimed at identifying and evaluating the circumstances that impacted the formation of architectural education in Riga and estimating the contribution of DA graduates to the urban landscape of Riga city centre.

**Keywords** – Architectural education, history of architecture.

## INTRODUCTION

Development of railways allowing to transport goods quickly and cheaply over long distances by land facilitated industrial development and urban growth in the European countries in the mid-19th century. This was promoted also by a rapid development of urban engineering networks – gas supply, power supply, water supply and sewage systems. Overall development paved the way for extensive construction, and Riga was not an exception in these processes. Being a well-developed seaport and connected to the railway network, Riga turned into a major industrial centre of a wider region. The growing needs of the economy created the need for educated specialists who could successfully meet the increasing demands.

Local entrepreneurs encouraged the idea of establishing a local technical school to educate specialists locally instead of attracting them from other countries, and the proposal was also supported by Riga Stock-exchange Committee members. Established in 1862, the Riga Polytechnic (RP) was the first institution of higher technical education in the Baltic region training specialists in technical disciplines. Presenting experience gathered in western Europe, especially in Germany and Switzerland, RP was able to provide education in key economic sectors – engineering, mechanical engineering, chemistry, agriculture, and business management. Already in the first decade of operation of the RP, the Department of Architecture (DA) was opened.

DA turned out to have a major impact on the built-up environment of Riga. Graduates of the DA started their professional practice and at the same time returned to the school as teachers and tutors of the study projects. Since Riga was experiencing a booming economy and a large scale of construction that caused the need for skilled architects, graduates of the DA were facing a vast field of work. Thus, since the end of

the 19<sup>th</sup> century, graduates of the DA Otto Konrad Ernest Hoffmann, Eduard Kupfer, Eižens Laube, Heinrich Gerhard Pirang, August Reinberg, and Wilhelm Ludwig Nikolai Bockslaff participated both in the education of young architects and in the development of the built-up environment of Riga. This study is aimed at identifying and evaluating the circumstances that impacted the formation of architectural education in Riga and estimating the contribution of DA graduates to the urban landscape of Riga city centre.

## I. BACKGROUND

In the middle of the 19<sup>th</sup> century, development of Riga faced significant changes. In 1856, the former fortification system, which surrounded the medieval city of Riga and had lost its strategic significance, was allowed to be removed. Riga's chief architect Johann Daniel Felsko and architect Otto Dietze developed a project of spatial transformation of the former fortress and its esplanade area where the public parks with public buildings were planned in the place of the former ramparts and ditches. According to the plan, a semicircle of boulevards with the city canal passing through the greenery was created around the Old Town, encompassed by densely built quarters interconnected with parks and free-standing public buildings [1]. This provided space for public urban development becoming one of the top qualities of the city till the present days.



Fig. 1. The expansion of railway network in the territory of Latvia in the turn of the 19<sup>th</sup> and 20<sup>th</sup> century [Figure: U.Bratuškins].

In the second half of the 19<sup>th</sup> century, spread of the railway construction began in the territory of Latvia. The first line *Rītupe–Daugavpils*, a part of St. Petersburg–Warsaw line, was opened in 1860. One year later the connection *Daugavpils–Rīga* was built, which alongside with the ancient trade route along the river

Daugava became the most convenient and cheapest way to the port of Riga. During the next half-year, the line *Daugavpils–Zemgale* was constructed, which was the continuation of the St. Petersburg–Warsaw line southwards. Up to the turn of the 19<sup>th</sup> and 20<sup>th</sup> century the lines *Daugavpils–Indra*, *Rīga–Jelgava–Mažeikiai–Liepāja*, *Rīga–Tukums* and *Rīga–Valka* were built contributing to the regional reach of Riga, as well as *Rīga–Bolderāja* and *Rīga–Mangali* lines, which connected the Riga ports to the railway network. Later, during the first fifteen years of the 20<sup>th</sup> century, *Jelgava–Meitene* and *Ventspils–Zilupe* lines were also built [2]. Thus, up to the beginning of World War I, a railway network was created in the territory of Latvia (Fig. 1), which greatly contributed to the prosperity of the economy and the mobility of the inhabitants.

Railway network and seaport development made it possible for Riga to obtain convenient transportation links of cargos between the European countries and Russia. This, in turn, contributed to the rapid development of industry in the territory of Latvia and in particular in Riga. Within ten years from 1879 to 1890 the number of industrial enterprises operating in Riga increased from 145 to 228. Correspondingly, from 12 000 to 17 000 increased the number of workers employed. The Law of July 9, 1863 on the Extension of Freedom of Movement of Peasants in the Baltic Provinces encouraged the influx of labour force in Riga. The population of the city increased from 102.6 thousand in 1867 to 482.1 thousand in 1913 [3].

Infrastructure and communication networks were expanded and improved as well. From 1863 to 1893 the total length of the centralized water supply network was doubled, from the year of 1852 the telegraph began to operate, and in 1862 the first city gas factory was opened. Until 1899, the total length of the city gas network reached 76 km. In 1894, a systematic construction of the sewerage network began [4]. Thus, Riga within several decades became the fourth largest city and industrial centre in the Russian Empire just lagging behind St. Petersburg, Moscow and Warsaw [5].

During the economic prosperity, the construction developed as well. In 1858, the official permission to construct masonry buildings outside the medieval town – in the former suburbs – was issued. Correspondingly, from 1860 to 1867 the construction code of Riga was developed [6]. Although at the beginning of the 20<sup>th</sup> century the dominating type of buildings in the former suburbs was low-rise timber houses, from the year of 1881 multi-storey masonry buildings began to appear, and by the end of 1899 the number of multi-story masonry dwelling houses reached 650. Around 400 factories and workshops were built during this decade as well [4].

Overall, the sprawl of industries and infrastructure network, migration of population and rapid urban development since the second half of the 19<sup>th</sup> century were the major impact factors promoting development of the city of Riga that led to the necessity of establishing a corresponding educational support to face economic and social challenges.

## II. TECHNICAL SCHOOL

Along with the industrial boom and Riga becoming an important industrial centre, there appeared a need for specialists trained in the technical branches. Before, since the second half of the 16<sup>th</sup> century, several attempts were made to create a university in Riga, but mainly due to the efforts of the Riga City Council to preserve the relative autonomy of Riga as a trading city, these efforts did not succeed [7].

Until the mid-19<sup>th</sup> century, the Riga inhabitants went to study at foreign universities, however, they felt difficulties because of their insufficient former training. For this reason, in the fifties of the 19<sup>th</sup> century, preparations for the establishment of a high school started in Riga. The idea was supported by the Riga Stock Exchange Committee, which set up commissions for further development plans. To evaluate the intention of opening the high school in Riga, the vice-director of the Hannover Polytechnical School, Dr. Traugott Samulel Frank, was invited by the Committee. Considering that the high schools do not put enough emphasis on technical disciplines at a sufficient level, he developed the concept of higher-level technical school. Emphasizing the fact that Riga with the adjacent 75 factories, the wide scope of hydro-construction works, actively operating seaport and ongoing railway construction, was expected to have rapid industrial development, he highlighted the idea that the school should be created definitely in Riga. The idea of establishing a higher-level technical school in Riga was also supported by the Governor of the Baltic States, Prince Alexander Suvorov, and, thanks to his energetic actions, the Tsar of Russia Alexander II approved the regulations for the Riga Polytechnic School on May 16, 1861 [7]. Already next year, in October 14, 1862, the school started operating.

The Riga Polytechnic (RP) was able to provide education in major sectors of economy – engineering, mechanical engineering, chemistry, agriculture, and commerce. At the end of the first decade of existence, in 1869, the Department of Architecture was opened in RP. Since then, education in architecture has always been provided in RP, later – Riga Polytechnical Institute, at present – Riga Technical University (RTU).

## III. BUILDING

During the opening of RP, the question of premises turned out to be a significant issue. At the first stage of operation, the school worked in temporary premises, while the issue of permanent premises was also on the agenda. The city of Riga reserved a plot for the school – an urban block in the newly established boulevard area in a prestigious location between two city parks (Fig. 2). In 1863, architect Gustav Ferdinand Alexander Hilbig from the city of Krefeld, North Rhine-Westphalia, West of Germany, arrived in Riga. He became the professor of built environment in the new school of architecture. One of his first tasks was to develop the project of the RP new building. The construction of the building was accomplished in several stages – first, in 1869, the block along the present *Raiņa* Boulevard was erected (Fig. 3), then





Fig. 2. The location of the school building was chosen in the prestigious boulevard area between two parks [Authors of the article].



Fig. 3. The building of Riga Polytechnic. G. Hilbig, 1878 [Photo: U.Bratuškins].

#### IV. STUDIES, RESEARCH AND STAFF

followed the parallel building along the present *Merkeļa* Street in 1878, and in 1885, a three-story connecting wing along *Inženieru* Street was finished. All the projects were developed by G. Hilbig. The architectural language followed the *Rundbogenstil*, the trend of Eclecticism, characteristic with semi-circular arched windows, often used for educational buildings [1]. The latter block was soon extended by adding an additional floor designed by another professor of architecture – Otto Konrad Ernest Hoffmann. The development along the streets was finished in 1909 when another connecting wing along *Arhitektu* Street was finished, also designed by O. Hoffmann. This building contained also workshop spaces for students of architecture in the attic of the building. The whole complex was completed some decades later, in 1931, when *Aula* (the Hall), designed by architect Ernests Štālbergs, was built in the courtyard. Nevertheless the fact that the construction of the buildings along the streets overall lasted more than 40 years and the whole complex was finished within 60 years, the impressive volumetric composition of the buildings with the distinct language of stylized Romanic and Byzantine elements formed the united and monumental block that became a significant landmark in the urban landscape of Riga city centre [8]. At present the former RP building is used by the University of Latvia, while the historical narrative of the place still can be read in the names of the adjacent streets – *Arhitektu* and *Inženieru* Streets.

At the opening stage of the school of architecture, interest in studies was not very high – in study year 1869/1870 only two students expressed the wish to acquire the architect's profession [9], while during the following years the number of students started to increase. In the first half of the eighties, the number of students per year fluctuated around 35, however, in the end of the decade it dropped to 20–25 students per year. The first graduate of the Department of Architecture was Oskar Bar, who completed his studies in 1874. During the following years, the number of graduates was not high and varied around 3–5 graduates per year. The annual number of graduates began to increase at the beginning of the new century, when more than 10 young architects finished the studies in the Department of Architecture yearly.

The Department of Architectural of RP was not among the largest in terms of the number of students, nevertheless, it was able to involve recognized masters of the profession in the teaching process. The Department was run by Professor G. Hilbig (from 1870–1887), architects Robert August Pflug, Karl Johann Felsko, Johann Mathias von Holst and others were invited to join the teaching staff. As the offered disciplines extended, more professors were invited from abroad, and one of them was Professor Johann Koch, from Prague Polytechnic, who overtook the responsibilities of the Dean after the death of G. Hilbig in 1887. J. Koch held the position from 1887–1905, when he was replaced by the RP alumni O. Hofmann (in 1906–1906, and



Fig. 4. Apartment house with retail space. 18 Krišjāņa Valdemāra Str., A. Malvess, 1910 [Photo: U. Bratuškins].



Fig. 5. School of Commerce, at present Art Academy of Latvia. 13 Kalpaka Boulevard. W. Bockslaff, 1902 – 1905 [Photo: U. Bratuškins].



Fig. 6. Apartment house with retail space. 47 Brīvības Street. E. Laube, 1909 [Photo: U. Bratuškins].



Fig. 7. Apartment house. 12 Alberta Str. K. Pēkšēns, E. Laube, 1903. Detail of the façade. At present in the former apartment of architect K. Pēkšēns (ground floor) operates the Riga Art Nouveau Museum [Photo: U. Bratuškins].

1915–1917). Between the two terms of O. Hoffmann, the Dean of the Department was Professor Wilhelm von Stryk (in 1906–1915) [9]. All the Deans were not only teachers and administrators but also practicing architects who have left significant legacy in Riga architecture.

The study program was designed according to the sample of German and Swiss technical higher education programs. Significant study courses were devoted not only to architectural design, drawing and architectural history, but also to the construction industry, building structures and building materials. The ongoing improvements of the study system and extension of the scale of offered courses were part of the work of the Department of Architecture.

Since the end of the 19<sup>th</sup> century, the alumni of the Department who were having active professional practice were invited to join the staff. Thus, in 1892, O. Hofmann began working as an assistant and in 1904 Eduards Kupfers joined the staff. They were followed by Eižens Laube in 1907, and Heinrich Gerhard Pirang in 1910. RP alumni Augusts Reinbergs, Wilhelm Ludwig Nikolai Bockslaff and others were also involved as educators in the Department also. Since then it has become a tradition of the school that the alumni actively participate in the training of future colleagues.

With the establishment of the school, scientific research also evolved. Though the primary objective of the school was to prepare specialists for local industrial and construction needs, and, particularly at the beginning of its activities, the quest for creativity and architecture was limited mainly to the choice of shape

and style according to the building and place in question, quite soon increased also the interest in theoretical issues.

Associate Professor of RP in arts, historian and architect Wilhelm Johann Carl Neumann published about 60 monographs on various architectural and art history topics. H. Pirang was the author of papers on urban development and wrote a three-volume book about architecture of the Baltic manor houses (*Das baltische Herrenhaus*), while E. Laube in 1908 began the research work focused on the issues of national identity and stylistics in architecture [9]. Particular direction of interest in his early works was in the stylistic expression in architecture – “...one should try to find an appropriate design for each of the present needs” [11]. Another RP alumni, Pauls Kundziņš, started his career at the school in 1919. He focused on the historical heritage of folk art, and due to his initiative the formation of the Latvian Ethnographic Open-Air Museum was started in 1924, when he was still an active participant in collecting knowledge, methods and crafts in the field of vernacular architecture and its preservation as well as in the former lifestyle in the country.

## V. PRACTICAL WORK AND LEGACY

The graduates of RP Department of Architecture faced a wide field of work. In the mid-1890s, of 40 architects having practice in Riga, 25 were the alumni of RP or RPI. In the period from 1910 to 1913, on the average 150–220 new multi-storey masonry rental buildings were constructed [12].



Since about 80% of the architects working in Riga before World War I had received their education in RP or RPI, one can say that the legacy of Riga architecture at the end of the 19<sup>th</sup> and the beginning of the 20<sup>th</sup> century is a convincing evidence of the results of the work of the Department of Architecture. Thus, the first graduate O. Bar designed around 90 multi-storey residential buildings in Riga, Augusts Malvess is the author of around 20 (Fig. 4), W. Bockslaff – around 30 (Fig. 5), Laube – more than 80 (Figs. 6 and 7), Augusts Vanags – around 70, and Konstantīns Pēkšēns – more than 250 multi-storey masonry buildings [9]. Though they had studied in the epoch of previous stylistic expression, they enthusiastically absorbed the new aesthetic and functional trends becoming the masters of Art Nouveau. A large part of buildings in our days are listed architectural monuments of local or state significance, forming the face of the UNESCO World Heritage Site – the historic centre of Riga.

## VI. TRANSFORMATIONS

Initially, the studies at RP were held in the German language, which enabled German, Swiss and Austrian scientists to work there. However, due to the spread of Russification tendencies in the Russian Empire, in 1896 the RP was transformed into a state institution – Riga Polytechnical Institute (RPI). It was followed by a transition from German to Russian language of instructions as well as introduced Russian educational standards [5]. This led to the departure of the German-speaking academic staff from Riga [7]. At the beginning of World War I, in 1915, the RPI was evacuated to Dorpat (at present Tartu, Estonia), and later to Moscow. After the conclusion of the Brestlitovsk Peace Treaty in the first half of 1918, both former students and academic staff began to return to Riga. In the autumn of the same year, the Baltic Technical University, where the training was again in German, was launched at the RPI premises. However, a few months later, in November 1918, a revolution began in Germany and Weimar Republic was established, an independent state was proclaimed in Latvia, but Russia broke the Brestlitovsk Peace Treaty, attacked the Baltic countries, and established the Soviet power there. It existed only a few months, but at that time based on the RPI Latvia Higher School was established, where for the first time in the history of the Latvian nation the studies were held in the Latvian language. After the repression of the Bolsheviks and the international recognition of the Republic of Latvia, in 1923 a unified university – the University of Latvia – was established.

## CONCLUSIONS

Construction of the railway network and booming industrialization of Riga in the mid-19<sup>th</sup> century were the most important factors, which greatly contributed to the prosperity of the economy and the mobility of the inhabitants in Latvia. The economic prosperity had a positive impact on construction development, and the growing need for well-educated and skilled architects became obvious.

Since the end of the 19<sup>th</sup>-century graduates of DA were actively involved in the creation of buildings in Riga, and their creative legacy determines the unique spatial appearance of Riga city centre – the UNESCO World Heritage Site – until today.

The active involvement of the graduates, working in practice, in the teaching process in DA became the persistent tradition of the school. This laid the foundations for good relations between the school and profession and promoted better involvement of students in their further occupation.

DA was active not only as a teaching but also as a research institution. Theoretical contribution of the DA researchers resulted in practical implementation of scientifically argued cultural heritage protection. The most evident example is the foundation of the Latvian Ethnographic Open-Air Museum, still active now.

Being a part of the educational system of the country, RP and DA were dependent on political processes. Despite the multiple changes of political powers and transformations of the educational institutions in the 20<sup>th</sup>-century, the school of Architecture survived maintaining the established traditions.

Remark: the article has been partly published in the Latvian and French languages.

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