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JELENA TOMIĆ-BOKUR (1889–1961) – THE FIRST STATE-APPOINTED WOMAN ENGINEER ARCHITECT IN YUGOSLAVIA

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Summary. In 2023, the author's study «Early Engineers and Architects Born on the Territory of Present North Macedonia» was published in the RTU RCEH Scientific Journal «History of Engineering Sciences and Institutions of Higher Education» about the first engineers and architects who were born in the territory of present-day North Macedonia. This paper focuses on the life and work of the first state-appointed woman engineer architect in Yugoslavia in 1919, Jelena Tomić-Bokur (*nee* Tomić; 1889–1961), a graduate of the Technical Faculty of the University of Belgrade in 1913. The paper covers in brief her 24-year-long professional career between 1913 and 1937 in the Kingdom of Serbia and the Kingdom of Serbs, Croats, and Slovenes – Yugoslavia, with emphasis on her formation years in Skopje (1915–1923). This study contributes to the history of engineering and architecture in North Macedonia and wider whilst exploring the context in which the first women professionals emerged in Serbia and former Yugoslavia.

Keywords: North Macedonia, Serbia, Yugoslavia, first, state-appointed, woman, engineer, architect.

Introduction

It was 105 years ago, on Monday, 24 February 1919, in Skopje, now North Macedonia, then Kingdom of Serbs, Croats, and Slovens, that engineer architect Jelena Tomić-Bokur was promoted to the post of Assistant Architect I class. The promotion was officially confirmed by a decree of 30 April 1919. Therefore, this appointment is considered to be the first one by the state of a woman engineer architect in the Kingdom

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of Serbs, Croats, and Slovens, which became the Kingdom of Yugoslavia in 1929. Until then women could be employed only on contracts [1, 2].

This paper focuses on exploring the life and work of this prominent early woman engineer architect in Yugoslavia and represents the initial findings as part of the ongoing research into the early engineers and architects who were either born, worked or lived on the territory of present North Macedonia but either enrolled to study before the beginning of the Second World War (WWII) or graduated before the end of the war.

The previous stages of the wider research identified the engineers and architects who were born on the territory of present North Macedonia and who graduated before 2 August 1944 when the Federal Unit Macedonia was proclaimed within the Federal Democratic Yugoslavia. This work uncovered 72 engineers and architects within this category [3]. The next stage focused on identifying the early women architects who enrolled to study architecture at the University of Belgrade, the oldest school of architecture in Yugoslavia, between 1896 and 1940, and were either born, worked, or lived on the territory of the present North Macedonia [4, 5]. Initially the research identified 14 of them, but further research found out that there are at least 16. This research also identified a potential mismatch between the research published in North Macedonia and Serbia. Namely, the research carried out in North Macedonia suggested that Elena Bokus was the first woman architect who practised on the territory of present North Macedonia [6], whereas, within Serbia, there is no mention of her and her activity. This mismatch was considered important since the territory of present North Macedonia became a part of the Kingdom of Serbia during the two Balkan Wars (1912–1913) and, afterwards from 1918, part of the Kingdom of Serbs, Croats, and Slovenes/Yugoslavia until the beginning of the WWII apart from the periods when the territory was under control by the Central Powers (Quadruple Alliance) during the First World War (WWI).

The above prompted further research into tracing the origins, life, and work of Elena Bokus that expanded outside the territories of former Yugoslavia, including Bulgaria, Hungary, Poland, Ukraine and Russia. The findings of this research identified that the most likely outcome is misidentification and that Elena Bokus and Jelena Bokur (*nee* Tomić) are actually the same person [7]. In turn, this prompted further research into the life and work of Jelena Tomić-Bokur, for which some prior research has already been conducted within Serbia [1].

The research presented in this paper also examines in brief the context that led to the emergence of early women professionals in Serbia including present North Macedonia and Yugoslavia.

Methodology

The research has been based primarily on access to a combination of primary and secondary sources, including, where available, archive material, historical publications, materials available on the internet and correspondence with relatives and descendants of J. Tomić-Bokur's family. It should be noted that she can appear either as J. Tomić-Bokur or J. Bokur in the historical papers. This is fairly unusual since, during her life and work, it would have been a common practice for the wife to take her husband's name upon marriage rather than to add it to her maiden surname.

In general, within this paper, the term Yugoslavia is used in relation to the Kingdom of Serbs, Croats and Slovenes (1918–1929), Kingdom of Yugoslavia (1929–1941), Federal Peoples Republic of Yugoslavia (1945–1963), and the Socialist Federal Republic of Yugoslavia (1963–1991). In relation to Serbia, the term is generally used for the Principality of Serbia (1815–1882), the Kingdom of Serbia (1882–1918), and the Republic of Serbia (since 2006). Between 1945 and 1992, Serbia was a republic within Yugoslavia, then a republic within the Federal Republic of Yugoslavia (1992–2003) followed by the State Union of Serbia and Montenegro (2003–2006). It should be noted that after the Balkan Wars, the territory of Serbia expanded to incorporate Southern Serbia/Old Serbia, encompassing present North Macedonia, Kosovo, and the Sandžak region within present Serbia. Serbia does not recognise the independence of Kosovo and considers it to be the Autonomous Province of Serbia. The present Autonomous Province of Vojvodina became part of Serbia after WWI.

All original words in Cyrillic script within this paper have been romanized using the BGN/PCGN 2005 and the BGN/PCGN 2013 Agreements for Romanization of Serbian and Macedonian Cyrillic, respectively.

Life and Education of Jelena Tomić-Bokur

Jelena Tomić was born on 15 November 1889 in Belgrade, Kingdom of Serbia (now Serbia). Her father, Kosta Tomić, was a solicitor (advocate), and her mother, Draga Tomić (*nee* Rodić), was a housewife from Slavonski Šamac, Austria-Hungary (now Croatia) [1]. Jelena was one of at least six children, three brothers and three sisters. It is known that her brothers were Momičilo, Strahinja, and Toma, and her sisters were Sofija and Milica, although the order in which they were born or what were their occupations have not yet been established [8]. Jelena completed the

primary school located near the Cathedral Church of the Holy Archangel Michael in Belgrade and the Third Belgrade Grammar School. Following her graduation (*Matura*) in 1908, she enrolled at the Architectural Department of the Technical Faculty at the University of Belgrade, where she graduated on 9 October 1913 [1, 9].

Jelana (Figure 1) got engaged to Dr. Ignjat Bokur (Krčedin, Austria-Hungary, now Serbia, 26 February 1883 – Vršac, Yugoslavia, now Serbia, 28 September 1974) in April 1914 in Skopje, Kingdom of Serbia (now North Macedonia), and got married later that year [1, 10, 11]. Her husband was from a farmer's family in the village of Krčedin near Inđija (then Austria-Hungary, now Vojvodina, Serbia). Despite losing his father when he was only eight days old, I. Bokur managed to complete a Teachers' School and then enrolled at the Faculty of Philosophy at the University of Belgrade. After two years, he transferred to Zurich, where he completed his studies and obtained a doctorate in philosophy (with a major in pedagogy and a minor in history of arts and aesthetics) in 1910. Dr. I. Bokur is considered to be the first person with a doctorate in pedagogy in Serbia. Upon his return to Serbia, he entered the teaching profession mainly in present-day North Macedonia and Vojvodina, Serbia [1, 12].

Figure 1. Engineer Architect Jelena Tomić-Bokur (left) with her daughter Milica (right) in Vrnjci (Spa), Serbia (1938).

Dr. Ignjat and Jelena Bokur had two children: a son Aleksandar and a daughter Milica. During WWII, their son, Aleksandar (c.1915–c.1944) age 29, was arrested and imprisoned within the Banjica Concentration Camp (Anhalteleger Dedinje) near Belgrade, never to be seen again. Their daughter, Milica, a sculptor, married the academic sculptor Dejan Bogdanović, a graduate of the *École des Beaux-Arts* in Paris who lost his wife Jelena Bogdanović (originally, Irena Komajić) at the Banjica Concentration Camp in 1943. Dejan's and Milica's son Aleksandar-Saša (Vršac, Yugoslavia, now Serbia, 7 July 1947) is a well-known painter and writer from Vršac, Vojvodina, Serbia. Jelena Tomić-Bokur passed away suddenly on 20 July 1961 in Belgrade, where she has been laid to rest [1, 13, 14].

The WWII personal and family tragedy was compounded by the earlier one during WWI when J. Bokur lost her younger sister Milica (c.1895–1917), also a student of architecture at the Technical Faculty of the University of Belgrade when she passed away at age 22 on 20 November 1917 in Belgrade prior to taking her Diploma Exam. It is said that she succumbed to typhoid, which was apparently prevalent during WWI in Belgrade and Serbia [1, 8].

Early Professional Years (1913–1923) of Jelena Tomić-Bokur

The professional formation years of J. Tomić-Bokur were marked by a period of uncertainty and upheaval, with limited information to form a full picture of this period. It is known that she graduated on 9 October 1913, just two months after the end of the Second Balkan War on 10 August 1913, and about ten months before the outbreak of WWI (28 July 1914 – 11 November 1918), whilst Skopje was taken over by the Kingdom of Bulgaria from the Kingdom of Serbia between 22 October 1915 and 29 September 1918. Following the end of WWI, the Kingdom of Serbs, Croats and Slovenes was established on 1 December 1918. The research to date has not been able to establish whether J. Tomić-Bokur spent the entire WWI years in Skopje or not. In the absence of other information, it is assumed that she was in Skopje during this period since the territory was among the last ones to be taken over by the Central Powers and the Kingdom of Bulgaria forces.

The available information indicates that she was employed as a draftsman within the Ministry of Construction on 17 September 1913, even before she graduated. Although the actual location of her employment is not known, it may have been in Belgrade, where she was studying. In 1915, she was employed as an Assistant Architect II in

Skopje, whilst on 24 February 1919, she got the historically important landmark appointment, later confirmed by a decree, as an Assistant Architect I in Skopje too. On 4 September 1919, she was promoted to the post of Architect IV, on 5 March 1920, to Architect III, and on 29 May 1922, to Architect II [1]. In the absence of other information, it is assumed that all these appointments were whilst she was working in Skopje. Her promotion chronology suggests that she most likely passed her State Technical Exam sometime between 24 February 1919 and 4 September 1919, when she was promoted to an architect post since very few examples are known where a candidate was exempt from the exam.

In the period from the foundation of the Kingdom of Serbs, Croats and Slovens on 1 December 1918 until WWII, the country had to manage six different legal systems inherited from the previous entities that formed the new Kingdom. Considering her location at the time, J. Tomić-Bokur would have been subject to the old Kingdom of Serbia State Technical Exam rules.

Probably the last State Technical Exam for Architects in the Kingdom of Serbia before WWI took place in February 1914 and was undertaken at the Ministry of Construction in Belgrade in front of two examiners. The exams took place between 8 o'clock and 15 o'clock each day. There were two parts of the exam, a written and an oral part. The written part took place over two days, covering the design of public buildings, design of industrial buildings, and architectural constructions. The oral exam took place over four days and covered the history of architecture and architectural forms, design of public, agricultural and private buildings, architectural constructions, organisation of settlements, state and technical administration, encyclopaedia of mechanical engineering (over two days), and interior organisation of building [15].

The above provides an indication of the State Technical Exam that J. Tomić-Bokur had to take and pass to become a fully qualified architect. In the period between graduation and applying for the State Technical Exam, the candidates were asked to engage in practice, usually at least two years long, covering both site and design duties under the supervision of a qualified engineer or architect. Naturally, this has influenced the scope and nature of work that J. Tomić-Bokur would have undertaken in Skopje prior to her professional exam.

Figure 2. The Skopje main square (the Theatre building – to the left on the opposite side of the River Vardar) in the interwar period (the 1930s).

Figure 3. The Theatre building in Skopje in the interwar period (1930s).

The available information suggests that, whilst in Skopje, Jelena worked on supervision or inspection of the construction of the University building and part of the new Theatre in Skopje (Figures 2 and 3) [1]. The oldest tertiary education institution in North Macedonia, the Faculty of Philosophy in Skopje, an autonomous branch of the University of Belgrade, was opened on 16 December 1920, following its establishment on 2 February 1920. It is known that the first classes took place in the old Ottoman-era Teacher School building in Idadija in Skopje,

but it is not clear when the construction of the new University building was completed and who the architect was (Figures 4, 5 a, and 5 b) [16].

Figure 4. The Faculty of Philosophy building in Skopje on the left (1930s).

Figure 5. The original Faculty of Philosophy building, then University Library in Skopje: a) before, and b) after the 1963 Skopje earthquake.

Also, it is recorded that J. Tomić-Bokur was engaged in the design and construction of a church in the village of Crniče near Skopje [1]. Based on the available information, it is assumed that this is related to

the church Sveta Petka (St. Paraskeva of the Balkans). Unfortunately, both the University and the Theatre buildings, located on the historic left bank of the river Vardar, were severely damaged in the 1963 Skopje earthquake and were demolished afterwards. The church was damaged too but was eventually repaired and extended and, in this altered state, remains in use as a place of worship to date. Signed copies of the plans for the church dated 1922 are available, but the signatures of the architect and the assistant are not sufficiently legible to ascertain their names (Figure 6) [17]. Unlike the University building, the architects for the Theatre building (1921–1927) are known. J. Bukovac and Dimitrije M. Leko (20 May 1887 – 23 October 1964) are listed as the architects of this project [17], but others like Efrem Bronštajn, S. Belajevski and Viktor Mesner too, due to the number of alterations throughout the development [6].

Probably the most interesting part of Jelena's work as an architect in Skopje is the detached family house on Hajduk Veljko Street (Egejska) in Skopje for Jovan Tašković (Figure 7). Originally this two-storey house has been attributed in North Macedonia to Elena Bokus [6]. However, since recent research has found out that Elena Bokus and Jelena Bokur are most likely the same person, this modest residential building represents probably one of the few, if not the only, building designed by J. Tomić-Bokur in North Macedonia [7]. In addition, the timeline aligns with this assumption, as this design is listed under 1923. This coincides with her final year in Skopje and corresponds to the fact that she most likely passed her State Technical Exam in 1919. Becoming fully qualified would have allowed her to engage in private practice in addition to her work at the Construction Section in Skopje. Unfortunately, this house was lost in the 1963 Skopje earthquake and the follow-up rebuilding activities.

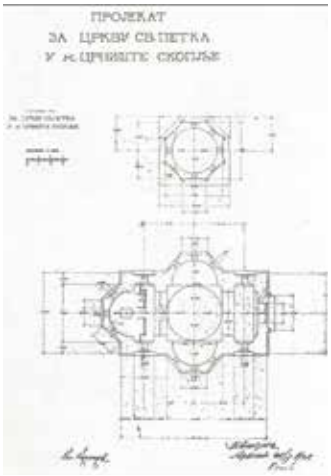

Figure 6. Plans of Sveta Petka church in Crniče, Skopje, from 1922.

Figure 7. Reproduction of the ground floor plan and the street elevation of the detached family house for Jovan Tašković on Hajduk Veljko Street (Egejska) in Skopje (1923). *Legend: 1 – entrance, 2 – porch, 3 – corridor, 4 – rooms, 5 – kitchen.*

During this research, it has not been possible to establish if J. Tomić-Bokur was among the minimum required 50 delegates and members of the Association of Yugoslavian Engineers and Architects attending the First Annual Assembly of Engineers and Architects from the Skopje Construction Directorate that on the 21 March 1920 established the Association of Yugoslavian Engineers and Architects – Skopje Section [18]. She would have been qualified and eligible to join the Association, but no record has been found to that effect to date.

Later Professional Years (1923–1937) of Jelena Tomić-Bokur

In 1923, J. Tomić-Bokur was promoted and transferred to Vršac (Vojvodina, Serbia) to take the post of the Head of the Technical Departments, where she stayed as a Senior Technical Adviser until her retirement on 8 June 1937. It is known that in 1932, she was promoted to the post of Senior Technical Advisor IV grade 1 [1].

During her career in Vršac, she was engaged both in supervision/inspection of construction works as well as design, including supervision and inspection of construction works to bridges in the area. It is said that she was very methodical in her approach, which brought the respect of the construction workers on the site supervised or inspected by her [13].

Her main works known in Vojvodina are the adaptation of the Hospital for Mental Illnesses in Kovin, Vojvodina, Serbia, where Jelena worked on a conversion of a former Austria-Hungary military barracks into a hospital that is still in use and has been recently refurbished upon the centenary of its opening on 16 July 1924. From the initial 50 patients in 1924, the number of patients grew to 500 by 1934. The original building was built between 1911 and 1913, but after the end of WWI, when Vojvodina became part of the Kingdom of Serbs, Croats, and Slovens, the building was no longer needed for its original use. The architect of the original building remains unknown (Figures 8 and 9) [1, 19].

Figure 8. Aerial photo of the central part of the Hospital in Kovin, Vojvodina, Serbia, in the post-WWI period.

Figure 9. Hospital in Kovin, Vojvodina, Serbia, in the post-WWI period.

The design and supervision/inspection of the construction of the residential building within the School of Agriculture in Vršac, Vojvodina, Serbia, a primary school building, and supervision/inspection of the construction of the residential building for the County Court (Sreski sud) in Uljma, Vojvodina, Serbia, are considered as two further examples of her work of this period [1].

Figure 10. Residential building at 3–5 Sonja Marinković Street in Novi Sad, Vojvodina, Serbia in the 2010s.

Probably the most prominent examples of Jelena's architecture are the design and supervision/inspection of construction of residential buildings for regional/Banate employees, of which of particular interest is the residential building for the regional/Banate officers at 3–5 Sonja Marinković Street in Novi Sad (Vojvodina, Serbia) from 1936 that is still in existence with its prominent architecture style of its time (Figure 10) [1, 2].

The Emergence of First Female Engineers Architects in Yugoslavia

Considering the turbulent history of the Balkan Peninsula, it is challenging to cover in detail the context in which first female engineers architects emerged in Yugoslavia. For centuries, the territory of Yugoslavia was generally held, the west part by the Holy Roman Empire/Austrian Empire and the east part by the Ottoman Empire. The European peoples and nations' revolutions of the mid-1800s, to a different degree, resulted in the establishment of the Austria-Hungarian Empire in 1867, the Kingdom of Serbia in 1882, and the Kingdom of Montenegro in 1910. The rest of the territory of Yugoslavia remained part of the Ottoman Empire to varying degrees until the Balkan Wars (1912–1913).

Before that, some level of autonomy was available in Croatia, Vojvodina, Serbia, and Montenegro, the first two within the Austria-Hungarian Empire and the latter two within the Ottoman Empire periods. This level of autonomy appears to have influenced the level of

emancipation and education within the different parts of Yugoslavia. This is probably best illustrated through the results of the 1921 Census in the Kingdom of Serbs, Croats, and Slovens according to which only 39.71 percent of the women were literate in the country. However, the regional differences were enormous. Whilst in Slovenia, the level of women literacy was 91.15 percent, in South Serbia (approximately the current North Macedonia, Kosovo, and the Sandžak Region of Serbia), it was only 8.43 percent. Regardless, the level of literacy did not quite equate with opportunities for further education. Despite the limited opportunities to further education in Serbia, some women were still able to enroll in the male grammar schools from 1874, allowing for the first women to complete secondary education and pass the Final Exam (*Matura)* in 1887. This enabled Leposava Bošković to enroll at the High School in Belgrade and graduate from the Faculty of Philosophy in 1891 along with Kruna Dragojlović-Aćimović (1867–1956), who completed grammar school in Russia, making them the first university-educated woman who completed their education in Serbia and Yugoslavia. The first woman to graduate from the Technical Faculty of the University of Belgrade was Jelisaveta Načić (Belgrade, Principality of Serbia, now Serbia, 31 December 1878 – Dubrovnik, Yugoslavia, now Croatia, 06 June 1955) in 1900 makes her not only the first women engineer architect in Yugoslavia but probably in the Balkans too, whilst the first law graduate was Zorka Boknić in 1911 [20].

In contrast, it appears that Austria was not quite open providing opportunities for further education of women and provided access to their faculties of philosophy only in 1897, which adversely affected women of Slovenia. The circumstances were somewhat better in Croatia, where the first female secondary school opened in 1892, paving the way for women to enroll at the Faculty of Philosophy at the University of Zagreb in 1902. Until then, women from Croatia and Slovenia had to obtain their university degrees elsewhere in Europe [20].

Women who wanted to study medicine, irrespectively where they came from, i. e., Slovenia, Croatia or Serbia, had to study in one of the European medical schools. For example, the first woman from Serbia and Yugoslavia to complete a medical degree was Dr. Draga Ljočić-Milošević (Šabac, Principality of Serbia, now Serbia, 1855 – Belgrade, Kingdom of Croats, Serbs and Slovenes, now Serbia, 1926) who enrolled at the University of Zurich in 1872 and graduated in 1879, a bit later than originally anticipated due to her participation as a medical assistant within the Serbian-Ottoman War (1876–1877). Her fellow student was Dr. Marija Siebold-Fjodorovna (Riga, 1849 – Belgrade, 1939), who graduated in 1874 and came to Serbia during the Serbian-Ottoman War. She later participated in the Balkan Wars and WWI, thus becoming

probably the first female doctor in the country. Between 1876 and 1918, 41 women from Serbia alone qualified as medical doctors in Europe [21].

When Jelisaveta Načić (1878–1955) graduated as the first female engineer architect from the Technical Faculty of the University of Belgrade in 1900, only 7 percent of the women in Serbia were literate [22, 23]. By 1940, about 220 women completed engineering degrees at the Technical Faculties in Belgrade, Zagreb, and Ljubljana. Between 1896 and 1940, 144 women enrolled to study architecture at the Technical Faculty of the University of Belgrade alone, with the majority graduating before WWII and few whose studies were affected by it after the war [1].

The type of works undertaken by female engineers of Yugoslavia by 1940 included taking part in the construction of the Kingdom of Yugoslavia Embassies in Buenos Aires (Argentina) and Ankara (Turkey) by the engineer architect Milica Krstić (1886–1964), who reached the highest grade of Inspector at the Ministry of Construction in 1940 [24, 25]. Engineer architect Leposava Dimić designed a number of railway stations, whilst engineer architect Jovanka Bončić-Katerinić (1887–1966), the first female engineer in Germany in 1913 from the Darmstadt University of Technology, designed the Women Teachers School in Belgrade. She also lived for a period of time in Riga [26, 1].

Ana Simeonović-Terzibašić was the contractor for the section of the road Užice–Kraljeve Vode, whilst engineer Ružica Radovnović from the Ministry of Construction designed and supervised the construction works on the bridge over the Topčider River. Engineer Draga Ljočić-Milošević headed the construction of the overpass near Inđija and Stara Pazova and supervised the casting of the ironworks for these in the factory [23].

The expansion of women enrolled at the Technical Faculties in Belgrade, Zagreb and Ljubljana can be observed after the proclamation of the Kingdom of Serbs, Croats and Slovenes. This led to the establishment of the Technical Faculties in Zagreb and Ljubljana in 1919 and the continuation of the enrolment at the Technical Faculty at the University of Belgrade, which started admitting women in 1896.

Changes that happened before and after WWI are reflections of the changes across Europe and beyond triggered by WWI, which led to increased engagement of women in the industry and the society as a whole. This was probably even more pronounced in traditional and patriarchal societies like those in the Kingdom of Serbia as a result of the devastating effects of WWI. Namely, it is estimated that Serbia lost 21–27.6 percent of its entire pre-WWI population because of the war, epidemics, starvation, and natural causes [27]. As a result, the Kingdom of Serbia experienced the highest overall human losses during WWI in the World.

Despite the increased level of interest in technical studies among women in the post-WWI period, the number of first female engineers is fairly low, with only about dozens of them identified within this period. Based on the best available information from Dr. Divna Đurić-Zamolo (1922–1995) [1] and Maja Nikolova [9], it appears that the following women graduated as engineer architects before the end of WWI and are listed here by the year of graduation:

1. 1900 – Jelisaveta Načić (1878–1955).
2. 1910 – Milica Čolak-Antić-Krstić (1886–1964) – enrolled in 1905.
3. 1911 – Milica Vukšić (1887–N/A).
4. 1912 – Anđelina Nešić-Janković (N/A–1975).
5. c.1913 – Vidosava Milovanović-Nikolić (N/A–N/A)
6. 1913 – Jovanka Bončić-Katarinić (1887–1966) – enrolled in 1905 and, in 1909, transferred to the Darmstadt University of Technology where she graduated as the first female engineer. Lived in Russia, including Riga, between 1914 and 1922.
7. 1913 – Jelena Tomić-Bokur (1899–1961) – enrolled in 1908.
8. 1914 – Jelena Golemović-Minić (1890–1973) – enrolled in 1910.

Based on the above sources, the following women are mentioned as being enrolled at the Technical Faculty of the University of Belgrade before the end of WWI, but there is generally no information on if and when they graduated:

1. Danica Bojić (N/A–N/A) – enrolled in 1905.
2. Ljubica Brkić (N/A–N/A) – enrolled in 1905.
3. Darinka Marinković (N/A–N/A) – enrolled in 1905.
4. Milica Tomić (c.1895–1917) – a sister of Jelena Tomić-Bokur. Passed away in 1917, prior to her Diploma Exam.
5. Živana Bončić (N/A–N/A) – there is insufficient information to confirm or otherwise if such a person existed, or it is a case of incorrect recording of the name and/or the surname.

Despite the obvious move forward in the pre-and post-WWI period in relation to emancipation and the entrance of women into professions previously considered to be in the male domain, the prejudices associated with the patriarchal society have remained in the decades that followed. There may be the case that female candidates were given a position only if a suitable male candidate was not available. Equally, the majority of the top positions remained "reserved" for their male counterparts.

Until Jelena Tomić-Bokur, women in engineering could only be employed as contractual workers rather than being appointed by decree, especially in the Civil Service. Although not specifically prohibited, the exclusion came through the requirement that only a person with completed military service could be appointed by decree. It appears

that even the military service was not enough. Being a Lieutenant in the paramilitary forces did not help Dr. Draga Ljočić-Milošević to get recognition as a doctor within the state-run medical facilities. The first female engineer architect, Jelisaveta Načić, was able to get only a position within the local government in the Municipality of Belgrade. At least, Jelisaveta Načić was able to find and retain a position within the capital, Belgrade, which is not the case for Jelena Tomić-Bokur. Despite being born in the capital and probably having an initial post as a draftsman in her home town, her career effectively took place in the newly acquired territories of the Kingdom of Serbia during the Balkan Wars and WWI. Initially, she was employed in Skopje, which was in one of the least developed regions in former Yugoslavia, being part of the Ottoman Empire from 1389 to 1912. Even the promotion and appointment in Vršac was to the newly acquired territory of Vojvodina, where circumstances would be more favourable considering it was part of the Austrian-Hungarian Empire until 1918.

To what extent the actual employment of Jelena Tomić-Bokur in Skope and Vršac was part of a personal choice, the desire to follow her husband, Dr. Ignjat Bokur, or the only choice available, it is difficult to say. One could see the possible attraction of the appointment to Skopje as a possibility to help reshape the town from a provincial oriental *kasbah* into a modern European city or to contribute to the development of Vršac.

Conclusions

The article reveals women from the territory of Serbia who studied engineering before World War I. In most European countries at the beginning of the 20th century, women did not have the opportunity to study at technical universities, although there are exceptions, and it is known that some women even obtained doctoral degrees in the second half of the 19th century at the University of Göttingen in Germany, for example, Julia Lermontowa (1847–1919) – a distant relative of the Russian writer Mikhail Lermontow (1814–1841). She was allowed to study at the University of Heidelberg only as a free listener [28]. However, this was not possible either in North Macedonia or in the Russian Empire, where the Riga Polytechnic Institute was at that time. Only after 1917 was it possible for women to study at RPI [29].

This paper presents the initial findings of an ongoing research aimed to identify the early engineers and architects who were either born, worked, or lived in the past in the territory of present North Macedonia. It focuses on the life and work of the first state-appointed female

engineer architect in Yugoslavia in 1919 – Jelena Tomć-Bokur, a graduate from the Technical Faculty of the University of Belgrade in 1913. Through her life story an attempt was made to present the achievements, as well as the challenges experienced by the first professional women in Yugoslavia in general, and, in particular, for those pursuing engineering-related professions, where the first women enrolled only in 1896.

Despite these challenges, about a dozen of them enrolled and/or completed their studies by the end of WWI; among the first female engineer architects in Serbia, Yugoslavia and most likely in the Balkans were Jelisaveta Načić who graduated in 1900 from the University of Belgrade, Milica Krstić who graduated in 1910 to rise to the highest grade of Inspector within the Ministry of Construction in Belgrade in 1940, as well as Jovanka Bončić-Katarinić, the first female engineer in Germany to graduate in 1913.

Jelena Tomić-Bokur was one of the early pioneers who showed this path for others to follow. As a result, until 1940, about 220 women graduated from the three Technical Faculties in Yugoslavia – the University of Belgrade, University of Zagreb, and University of Ljubljana – of which only about 144 enrolled to study architecture and graduated from the University of Belgrade [23, 1].

It is unfortunate that most of the projects in which Jelena Tomić-Bokur was involved whilst in Skopje did not survive the 1963 Skopje earthquake. Those interested to see her remaining works and achievements would have to visit Vojvodina to explore them.

The paper considered in brief how the six cultures and jurisdictions of the past years created a melting point that shaped attitudes and early education possibilities that led to the emergence of the first professional women in Yugoslavia and its territories prior to its foundation in 1918.

The research to date has not identified any female engineers or architects born on the territory of Yugoslavia who studied or graduated from the Riga Polytechnic Institute (at present – Riga Technical University) or other universities in Latvia prior to WWII. However, it identified the Riga-born Dr. Marija Siebold-Fjodorovna, who graduated in medicine in Zurich and became the first female doctor in the Kingdom of Serbia and participated in the Serbian-Ottoman war, the Balkan war, and WWI. It is also known that the first female engineer to graduate in Germany in 1913, Jovanka Bončić-Katarinić, spent part of her life in Russia with her husband between 1914 and 1922, including living in Riga, but it is not known if she practised there or not.

From the modest beginnings at the turn of the 19th to the 20th Century, the number of female engineers architects grew steadily within Yugoslavia and the countries that emerged upon its demise. Based on the information from the World Bank Group Gender

Data Portal [30], it appears that in 2017 or 2018, Serbia, Bosnia and Herzegovina, and North Macedonia had between 43 and 47 percent of women graduates in Science, Technology, Engineering, and Mathematics (STEM), whilst Slovenia and Croatia had between 33 and 39 percent, respectively. These figures are still higher than those in Germany and France, where they are between 28 and 32 percent. These outcomes are probably, at least in part, due to the emergence of early female engineers in former Yugoslavia.

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Jelena Tomić-Bokur (1889–1961) – pirmā valsts atzītā sieviete inženiere arhitekte Dienvidslāvijā

2023. gadā RTU IVPC zinātniskajā žurnālā «Inženierzinātņu un augstskolu vēsture» publicēts autora pētījums «Pirmie inženieri un arhitekti, kas dzimuši pašreizējās Ziemeļmaķedonijas teritorijā» par pirmajiem inženieriem un arhitektiem, kuri ir dzimuši, strādājuši vai dzīvojuši pašreizējās Ziemeļmaķedonijas teritorijā. Šajā rakstā autors turpina detalizētāk pētīt

pirmās sievietes arhitektes Dienvidslāvijā veikumu inženierzinātnēs un viņas personību, galveno uzmanību pievēršot pirmās 1919. gadā valsts atzītās sievietes inženieres arhitektes Dienvidslāvijā *Jelena Tomić-Bokur* (dzim. *Tomić*; 1889–1961), Belgradas Universitātes Tehniskās fakultātes absolventes (1913), dzīvei un darbam. Rakstā apskatīta viņas 24 gadus ilgā profesionālā karjera no 1913. līdz 1937. gadam Serbijas Karalistē un Serbu, Horvātu un Slovēņu Karalistē / Dienvidslāvijā, akcentējot viņas darbības gadus Skopjē (1915–1923). Pētījums sniedz ieguldījumu inženierzinātņu un arhitektūras vēsturē Ziemeļmaķedonijā un plašāk, vienlaikus izpētot kontekstu, kādā Serbijā un bijušajā Dienvidslāvijā augstāko izglītību ieguva pirmās sievietes profesionāles.

Atslēgvārdi: Ziemeļmaķedonija, Serbija, Dienvidslāvija, pirmā valsts atzītā sieviete inženiere arhitekte.

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