

140 YEARS OF SERVICE TO SCIENCE AND INDUSTRY

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Abstract

This compilation presents the main stages of the development process of the University of Óbuda over three centuries, from industrial education to higher education and finally, to the participants of the Conference. The first legal predecessor, the Secondary Industrial School (the Upper Industrial School located at the Vocational School), during the period of technics, led the way to the establishment of Donát Bánki and Kálmán Kandó, later to the Technical College of Light Industry, then to the establishment of an integrated Budapest Technical College, and onward to the successor, the University of Óbuda in the XXI. Century.

Keywords: *Ágoston Trefort, Secondary Industrial School, Károly Hegedüs, Lajos Petrik, Géza Jalsoviczky, Aladár Illvi Edvi, Ödön Faragó, Ödön Lencz, Royal Hungarian State Industrial Upper School, Technological Museum of Industry, Donát Bánki Technical College of Engineering, Kálmán Kandó Technical College, College of Light Industry, Budapest Tech Politechnical Institution, Regia Alba Faculty of Technology, University of Óbuda.*

The idea of the Secondary Industrial School (Közép Ipartanoda) being established in Budapest was first put forward by Ágoston Trefort, Minister of Religion and Education, who initiated the creation of the first organisational rules and the curriculum of the institution. This task was solved successfully by Pál Gönczy, Ministerial advisor, and József Sztoczek, Rector of the University of Technology (Műegyetem). In compliance with the ministerial order announced on 10 September 1877, the Secondary Industrial School started its operation on 7 December 1879 at 28 Bodzafa Street with the department of architecture, engineering, and chemistry.

The establishment of the Secondary Industrial School was in the same period when the organisation of the Technological Industry Museum (Technológiai Iparmúzeum) started, whose main tasks were “to support the national handicraft industry, mainly by spreading the socially useful expertise of the wood and metal industry...”. Right after the ceremonial inauguration on 24 June 1883, Trefort noted: “We have two institutions of secondary industrial education in the capital, which are the Secondary Industrial School and the Technological Industry Museum. Their relationship is essential and beneficial from the point of view of didactics

and finance as well...” Implementing this idea was possible by merging the two institutions on the Nagykörút (Grand Boulevard), behind the building of the People’s Theatre (Népszínház). The building, about which the chronicler of Pesti Napló wrote that “the palace of Hungarian Industry, the new home of the Secondary Industrial School and the Technological Industry Museum” was constructed here [1]

The renaissance palace

In 1885, Alajos Hauszmann, a teacher at the University of Technology, was commissioned to design the building to be constructed on the territory surrounded by József körút (József Boulevard) – Népszínház utca (Népszínház Street) – Csokonai utca (Csokonai Street). Construction works started in 1887 led by the architect Szilárd Monasterly and instructed by the master builder Elek Fekete. The building complex was finished in spring 1889, but unfortunately, Ágoston Trefort, Minister would not live to see it. The closing stone was ceremonially placed on 28 April 1889 by Albin Csáky, Minister of Religion and Education in the presence of Count Gyula Szapáry, Minister of Agriculture and later Prime Minister of Hungary and several other guests.



Picture 1. Building of the Hungarian Royal Technological Industry Museum

The inauguration of the building complex was held on 15 September 1889 about which Pesti Napló provided an overview on the previous night: "On the occasion of the ceremonial inauguration of the new and common palace of the Secondary Industrial School and the Technological Industry Museum tomorrow, we communicate the following. The establishment of both institutions was initiated by the National Association of Hungarian Industry (Országos Magyar Iparegyesület) in the seventies... In accordance with the proposals of the consultancies, the organisational rules of the Secondary Industrial School were announced by Minister Trefort's decree on 10 September 1877, and the institution started its operation in December 1879 with 16 students in a tenement house at Sándor Square in District VIII. Károly Hegedűs was entrusted as the principal. In order to found the Technological Industry Museum, Károly Ráth, Vice president and Soma Mudrony, Director submitted an application to Minister Trefort on 17 November 1879 on behalf of the National Association of Hungarian Industry, which accurately defined the frameworks of the organisation of the institutions, and it offered the (approx.) 2664 m² area in Rottenbiller utca (Rottenbiller Street) given by the community of the capital and owned by the association... The Minister entrusted Károly Ráth, Vice president in his capacity as a Commissioner to organise the technological museum and to gather

its collection, and two years later, the institution was ceremonially opened on 24 June 1883 in the rooms of the so-called Belezsnay Garden (Belezsnay kert). The Minister appointed Károly Hegedűs, the Director of the Secondary Industrial School to be the Director General of the Technological Industry Museum". [2]

The Nagykörút main facade of the building complex serving the needs of the Technological Industry Museum with the main entrance in the centre and the colonnade stairways look like a renaissance palace. The industrial museum was linked with a curvy building to the industrial school, which consisted of the main building at Népszínház utca, the workshop at Csokonai utca, the shed and the engineering and boiler room located in the spacious yard.

The basement of the two-storey main building provided a venue for a part of the chemistry lab, the wood and metal industry labs, the official lodgings and warehouses. The library of the institution and the chemistry lab were on the ground floor, while the office rooms were on the first floor and the science equipment room and the lab were placed on the second floor. Three huge auditoriums appropriate for 160 people each, three smaller classrooms and twelve drawing rooms served the educational needs while the usual and temporary teachers used the teachers' rooms mainly attached to the equipment rooms.

The ground floor of one-storey building of the workshop ensured a place for the engineering workshop and the forge as well as for materials storage, while the metal, iron and wood industry workshops were located in the first floor. The engineering and the boiler room was located in the yard and consisted of a twenty horse-power steam engine and a thirty metre high chimney. The spacious annex of the single-storey building of the engineering and boiler room contained the shed, where a heatable traction engine and a threshing machine was located for the purpose of training stockers and engine operators. All the rooms of the building were equipped with gas lighting.

The “Technology”

With their common management, the two institutions solved their tasks successfully in their new home: the growing collection of the museum became an integral part of education, and the teachers of the industrial school joined in the activities of the industry museum. The popular teachers of the institution – Lajos Petrik, Géza Jalsoviczky, Illés Aladár Edvi, Ödön Faragó, Ödön Lencz, Gusztáv Klemp and several others – greatly contributed to the development of mechanical engineering.

Due to the modification of the curriculum, the industrial school continued its operation as the Public Secondary Industrial School from 1891, while it was called The Hungarian Royal Hungarian State Industrial Upper School from 1898. Besides the expanding range of tasks, the development of the two institutions, or the “Technology” as they were often referred to, was consistent.

Due to the shortage of space, the department of architecture seceded in 1898, then on 30 April 1907, the Industry Museum, which owned more than 30 thousand objects at that time, gained complete independence, and Károly Gaul was appointed to be its manager. In spite of the continuous reconstructions, the building proved to be too small for the two rapidly growing institutions. Károly Hegedűs, the Director of the Higher Industrial School wrote the following in his report in 1914, before his retirement: *“This outdated building providing tight space is too small for this institution, and due to the huge traffic of the street, its environment is so noisy that the building is no longer appropriate to teach 8–10 lessons a day – which is usual.”* But because of the outbreak of the

First World War, there was no possibility for the construction of a new building [3].

The era of rapid changes

During the years of the world war, the museum provided a place for a military hospital, while the Public Higher Industrial School turned into a factory producing artificial limbs. After the world war and during the following years, the service became gradually poorer and poorer and problems intensified. In the 1930s, only 25 percent of the pre-war budget was available for the school to perform its tasks. As a result, the department of wood industry seceded in 1942.

After the world war, the Industry Museum was consolidated with more experimental and material testing institutions, then after the Hungarian Royal Institute of Technology and Material Testing (Magyar Királyi Technológia és Anyagvizsgáló Intézet) ceased to exist, the Institute of Light and Heavy Industry Quality Control (Könnyű- és Nehézipari Minőségellenőrző Intézet) was located in the building at Nagykörút, which was the predecessor of the Institute for Commercial Quality Control (Kereskedelmi Minőségellenőrző Intézet). The preserved library of the Industry Museum, the Technological Library was consolidated first with the Technical Documentation Centre (Műszaki Dokumentációs Központ), and was called the National Technical Library (Országos Műszaki Könyvtár), then it moved to its new place to Múzeum utca (Múzeum Street) in 1958, where it had the name National Technical Information Centre and Library (Országos Műszaki Információs Központ és Könyvtár) first, and today it conducts its activity as BME OMIK. Meanwhile, the department of building services engineering seceded from the institution and continued its activity independently in 1950, then the department of milling industry seceded in 1951 as well. The education of engineers remained in the building, and the foundation of Donát Bánki Technical College (Bánki Donát Műszaki Főiskola) in 1969 meant a new chapter.

The integrated institution

Budapest Tech Polytechnical Institution (Budapesti Műszaki Főiskola) was founded in 2000 by integrating Donát Bánki Technical College, Kálmán Kandó Technical College (Kandó Kálmán Műszaki Főiskola) and College of Light Industry (Könnyűipari Műszaki Főiskola). The main task of



Picture 2. Main building of Óbuda University



Picture 3. Welding robot cell at Bánki Faculty

the College educating nearly 12,000 students was to serve the economy by the development and high-quality transfer of knowledge. The institution intended to create up-to-date and high-quality education that is able to adjust to the changes of the economy and social life, and which is well-marketable on the market of higher education by the continuous improvement of quality.

In harmony with the Bologna process, the College started the preparation for the new, two-cycle higher education in 2002, and in 2004, they were the first in the country to start the Computer Science Engineering Bachelor of Science. In 2005, the list of courses was broadened with Mechanical Engineering, Electrical Engineering, Military and Safety Technology Engineering, Mechatronical Engineering and Light Industrial Engineering Bachelor of Science.

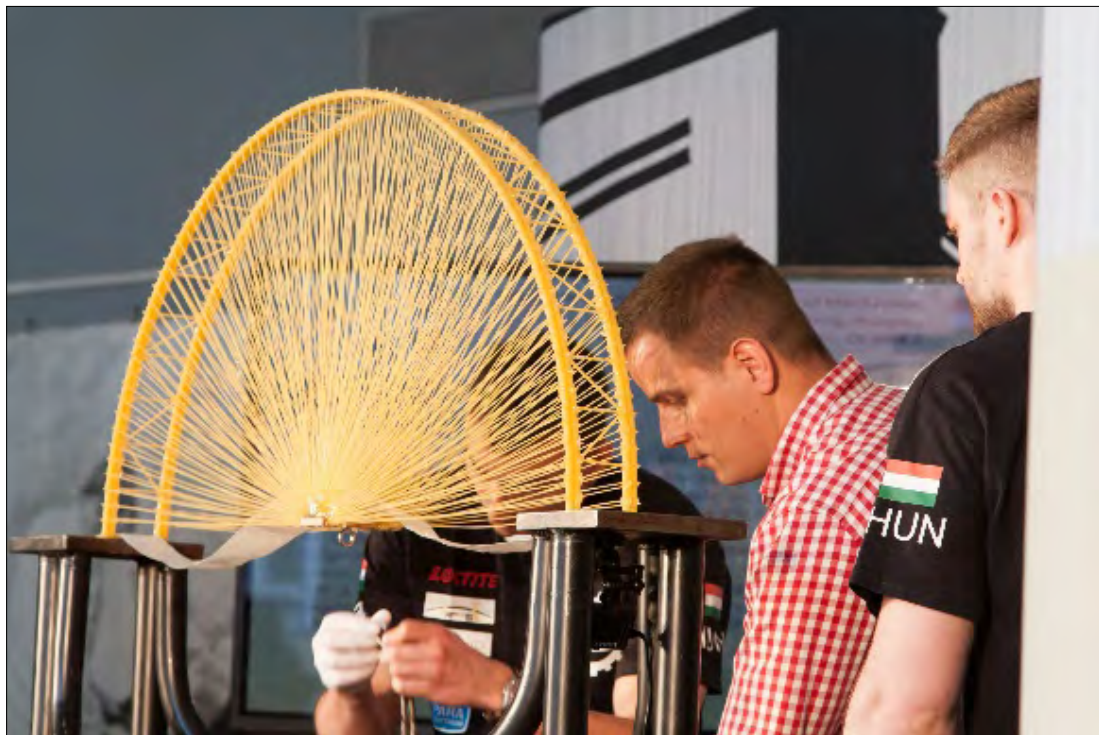
The education of students at the Environmental Engineering, the Business Administration and Management as well as the Technical Management Bachelor of Science started in 2006, so from that time on the college could launch all of its training opportunities at BSc level. To broaden the supply, English-language Mechatronical Engineering Bachelor of Sciences was introduced in 2007, and German-language Mechanical Engineering Bachelor of Sciences was launched in 2008.

The master programmes of the Teacher of Engineering and the Safety Engineering based on the Bachelor of Sciences started in 2007, which was broadened with the Mechatronical Engineering, the Computer Science Engineering, the Business Development and the Light Industry Engineering master programmes in 2008.

Óbuda University in the 21st Century

Thanks to its dynamic development programme, The Budapest Tech was able to meet the requirements for the universities stipulated in the Higher Education Act. This way, the Óbuda University (Óbudai Egyetem) was founded on 1 January 2010 as the successor of the Budapest Tech.

From 2010, the Óbuda University has offered bachelor of sciences and masters programmes, postgraduate specialist training courses, and higher-level vocational training courses in the field of economics, information technology, engineering and teacher education in the form of fulltime, evening and correspondence training as well as distance learning. The academic programme of the University consisted of 12 BSc, 6



Picture 4. *Reccs Spaghetti Bridge Construction World Cup Snapshot in the Lobby*

MSc and MA courses. As a result of the development, the training areas were broadened with the field of science as the Applied Mathematics master programme started in 2013.

After the merger of the College of Geoinformatics at the University of West-Hungary (Nyugat-magyarországi Egyetem Geoinformatikai Kar) into the Alba Regia University Centre of the Óbuda University (Óbudai Egyetem Alba Regia Egyetemi Központ), on 1 July 2014, in accordance with the Government Decision No. 1139/2014 (III.14), and the resolution of the Ministry of Human Capacities, the organisation of the University was expanded with a new education unit, the Alba Regia Technical Faculty (Alba Regia Műszaki Kar), Székesfehérvár [4].

The education with the new “E”-type curriculum based on the new training and outcome requirements started on 1 September 2017, by which one online course by faculties and semesters was introduced. The Project subject was launched, in which the students can utilize the acquired knowledge and skills in practice independently or in teams, and it gives the opportunity to evaluate their competencies directly. The system of patronizing teachers was formed, whose main aim

is to integrate students into the atmosphere of the university as fast as possible, and to decrease the number of students dropping out in the first year.

In 2018, the training opportunities of the University was broadened with the Computer Science Operational Engineering BSc and the English-language Business Management master programme in Budapest, and the Computer Science Engineering BSc in Salgótarján.

Today, there are 15 BSc and 10 master programmes in the form of dual and cooperative education, moreover, there are four higher-level vocational training courses and 28 postgraduate specialist training courses in Hungarian and English language. The institution offers training courses on Szabadka, Serbia and Székelyudvarhely, Romania besides its headquarters in Budapest and its sites in Székesfehérvár and Salgótarján.

In the framework of the Doctoral School of Applied Mathematics (Alkalmazott Informatikai Doktori Iskola), the University became entitled to launch doctoral programmes in 2010, and according to the autumn 2010 statistical data, it had 11 doctoral candidates at that time. In October 2018, there were 121 doctoral candidates learn-

ing in three doctoral schools, namely the Doctoral School of Applied Informatics and Applied Mathematics (Alkalmazott Informatikai és Alkalmazott Matematikai Doktori Iskola), the Doctoral School on Materials Sciences and Technologies (Anyagtudományok és Technológiák Doktori Iskola) and the Doctoral School for Safety and Security Sciences (Biztonságtudományi Doktori Iskola).

Our university is proud of its talented students and its committed colleagues. It also appreciates and recognises their performance. The citizens are really proud when they see the students' success as they come in first and second year by year at the Reccs World Championship in Spaghetti Bridge Building, the Design Challenge International Robot Building Competition, the Hajós György National Mathematics Competition, and the PLC Competition, but they achieve outstanding success in the European competition of Shell Eco-marathon as well.

In 2018, the Hungarian Accreditation Committee conducted the institutional accreditation procedure. As a result of the successful institutional accreditation procedure, "the accreditation of the University remains in force until 31 December 2023, in the case of continuous compliance with the accreditation requirements" [5].

It has been confirmed that the three centuries old Óbuda University is a determining institution of the Hungarian technical higher education. The justification of the Accreditation document states that: *"The education system of the University is in*

compliance with the public responsibility requirements for European institution providing higher education, its faculties are accredited, its teaching arrangement and its procedure of issuing degrees are in compliance with the national and international requirements. In cooperation with the private sector, it carries out applied research, as well as basic research in some fields. Its courses provide knowledge that is usable in the labour market, and it builds its research results into the development of its faculties."

Lead by the social responsibility and its commitment into technical development, Óbuda University aims at operating as an institution that provides practice-oriented, high-level technical, scientific and teachers' undergraduate, master and doctoral trainings that serve the economic needs, and use network-based and state-of-art educational methods, moreover, it intends to operate as an institution that carries out scientific research.

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