FSB 100

FAKULTET STROJARSTVA I BRODOGRADNJE
SVEUČILIŠTA U ZAGREBU
100 godina FSB-a

FACULTY OF MECHANICAL ENGINEERING AND NAVAL ARCHITECTURE
UNIVERSITY OF ZAGREB
1919-2019
The 100th Anniversary of FSB
Immediately after World War II, ambitious projects were started for a concentrated development of the university centre in the eastern part of the town, Maksimir and Dubrava, at locations foreseen for this purpose by Zagreb Regulation Plan in 1932 (for this reason, the student’s dormitories in Studentski grad in Dubrava and Laščina were built). However, in the mid ’50s, “due to certain difficulties during implementation” the focus was shifted to the University Alley or the Alley of Sciences (now Runjaninovo Street, and Dure Salaja, now Ivana Lučića Street). The idea behind it was to create an open campus extending the western part of the Zelena potkova (Green Horseshoe), a portrayal of historicist squares and parks designed by replicating the Vienna Ringstrasse of the second half of the 19th century.²

The Alley was one of the three monumental boulevards of the new South Zagreb – an area between the railway tracks and the Sava River. Here, on the outskirts of the city, an area of workers’ slums lacking basic infrastructure, a new socialist city with lots of sun, greenery and fresh air was supposed to rise: new residential areas of multi-storey dwellings and a new

Aleja je bila jedan od triju monumentalnih projekata novoga, južnoga Zagreba – prostora između željezničke pruge i rijeke Save – gdje je na mjestu međuralne periferije izgrađene nastanbenice bez osnovne komunalne infrastrukture trebalo nikući novi, socijalistički grad s pregranićem sunca, zelenila i svježeg zraka: nova stambena naselja samostojićih...
Immediately after World War II, ambitious projects were started for a concentrated development of the university area. The new scholarly and residential area was supposed to rise in the eastern part of the town. Before the war, a new 380,000-person city was supposed to be built here. Due to certain difficulties during implementation, the focus was shifted to the University Alley or the Alley of Science (now Regenstein Street) and Duhayl (now Duhayl Avenue) towards the north, between the road and the railway. It was to create a new "green" residential area of multi-story dwellings and a new university centre in the eastern part of the town. However, the real estate development did not occur due to the poor condition of the area and difficulties in building the urban infrastructure. Nevertheless, it highlighted the potential of the area as a new colossal city with lots of function, and the government wanted to replicate the idea in other areas. This is the reason why the new South of Duhayl - an area between the railway and the road - was planned to house public institutions, residential blocks, parks and a new "green" area of roads and walks. The plan of this new area was called "the heart" of the new city.
višekatnica te nevo administrativne, kulturno i obrazovno središte ne samo Zagreba nego i cijele Hrvatske. U pročelju istočnoga i zapadnoga kraja železe potkove od željezničke pruge prema Savi trasirane su Ulica Hrvatske bratke zajužnico s kvartet televizije i Sveučilišna alja sa zgradom Radničkog sveučilišta Moše Pijade Filozofskog fakulteta, Elektrotehničkog fakulteta (ETF), Strojarstvo-brodograđenog fakulteta i SBF i Visoke tehničke škole za pogonske inženjerije (IVŠ), pripojene 1967. SBF-u od kada fakultet djeluje na dvjema adresama – u Ulici Ivana Lučića 1 i 5.

Sama pozicija kampusa dovoljno govori o ulici koje su znanost, obrazovanje, znanstvenici i intelektualci, zajedno s umjetnicima i kulturan radnicima, imali ili tek trebali ostvariti u ubijenim projektovima podjednačenog društva. Ideja o lokaciji bila je moćniji već prisutna u realiziranim zgradama Obrtničkoj školi s Muzejom za umjetnost i obrt, Sveučilišne knjižnice, Kemijskog zavoda i Fizičkog instituta te rektora zagrebačkoga sveučilišta upravo na Zapadnom kraku te ju je bilo potrebno "isbiti" i "nadograditi".

Nakon konsolidacije nove države, političke i gospodarske krize uzrokovane razlaženjem sa SSR-ra, 1950-е su bile vrijeme ubrzanije modernizacije kojoj je podložna arhitektona profesija, restrukturniranju načina djelovanja - usavršavanjem manjih projektnih biroa, promjenom projektnih sadržaja - s reprezentativnih javnih i industrijskih objekata na arhitekturu svakodnevnog, svakodnevnega materijalnog okružja (stanovanje, obrazovanje, zdravstvo, kultura, sport itd.) i reafirmacijom arhitekture kao kreativne stvaralačke discipline. Lako se do kvalitetnih projekata javnih gradnji često dolazi rasipavanjem arhitektonskih nalječja, pa su tako na potesu Sveučilišne alje sredinom 1950-ih rasipani natječaji za zgrade Radničkog sveučilišta i Filozofskog fakulteta, Visoka tehnička škola za administrative, cultural and educational centre, not only of Zagreb, but of the entire Croatia. Further developing the eastern and western part of the Green Horseshoe, Ulica Hrvatske Bratke Zajednice (Croatian Fraternal Union Street) was routed from railway tracks towards the Sava River, where a concert hall, the new National and University Library, buildings of the State Archives and Radiotelevision were built. A number of important education institutions is seated in the University Alley: The workers' University, Faculty of Humanities and Social Sciences, Faculty of Electrical Engineering (ETF), Faculty of Mechanical Engineering and Shipbuilding and the Technical College for Plant Engineers (VTŠ) that was merged into the Faculty of Mechanical Engineering and Shipbuilding in 1967.

The assigned location of the campus indicates the role that science and education, scientists and intellectuals, together with artists and cultural workers had or had to achieve in the utopian projections of the post-war society. The location, or rather the idea itself, was already present in the existing buildings of the School of Arts and Crafts and the adjacent Museum of Arts and Crafts, the University Library, the Institute of Chemistry and the Institute of Physics and the Rectory of the University of Zagreb, namely in the western part of the Green Horseshoe, so it merely needed to be recognised and upgraded.

Upon consolidation of the new state, political and economic crisis caused by the divergence from the USSR, the 1950s experienced a fast modernisation that affected also architecture through restructuring of the old ways of operation - establishment of small design studios, change of design assignments - from representative public and industrial facilities to architectural design required for everyday purposes (housing, education, healthcare, culture, sports, etc.) and a reestablishment of architecture as a creative discipline. Although quality projects were frequently assigned through public tenders (such as the ones in the University Alley in mid ’50s for the Workers’ University and the Faculty of Humanities and Social Sciences), the Technical College for Plant Engineers decided in 1957 to carry out a negotiated procedure instead, inviting six architects to participate in the tender. The
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Oha projekta zgrada danišnjega Fakulteta strojarska i brodogradnje ogledni su primeri visoke moderne zagrebačke arhitektonske škole, čiji su postavljeni funkcionalna organizacija prostora, konstrukcija i materijali iz kojih, u konačnici, proizvodi i pragmatična kompozicija građevinih masa i reducirani oblikovni izraz. Dok su im zajedničke primjene Le Corbusierovih pet točaka moderne arhitekture i projektantska metoda odvijanja različitih funkcija u zasebne objekte međusobno povezane interno vezana; paviljonski sustav karakterističan za izgradnju fakultetskih kompleksa još 1930-ih godina, zgrade se razlikuju raznom razrade preuzetih modela i predizajna. Naime, materijaliziraju pomak od "kazalnog" paviljonskog sustava Haberleja i Jurković-a potpuno autonomnom glavnom zgradom teorijska nastava i

3. Nacrti Haberli i
Jurković

Drawings by Haberle
and Jurković
administracija i trima paviljonima zavoda, laboratorija i radionica u hortikulturno oblikovanoj ambijentu, prema Ostrogovićevoj integraciji četiri zasebna trakta (crtaonica, predavaonica, prostorije za nastavnikov i za administraciju) u koherentnu strukturu - bazu - premeštenu komunikacijama promaknutima u mjesta socijalizacije u atrijima koji su, osim što omogućuju obobranje osjećanja i pridoneo zračenju traktova i nadomjestak za vanjske zelenje površine. Pri tome VTS i SFB imaju i isto načelo dispoziciju paviliona i traktova, uglavnom dvotakta s prostorijama duž obja strana središnjeg hodnika, u dvijema glavnim radnim zonama (za teorijski i praktični rad VTS-a tj. za rad sa studentima i rad nastavnik-a SFB-alu, smještaj radnih prostorija studenata i zavoda povezanih prostorijama opće namjene (poput administracije i sličnagog prema sjeveru, a predavaonica i prostorija nastavnika prema jugu, centralno pozicioniran uzaj između glavnih funkcionalnih zona te smještaj ulaznog dijela na prvom katu zbog visine razlike terena od gotske jedine etafe.

Haberle i Jurković na tragu deje o sintezi svih umjetnosti, općepristupu u međunarodnom arhitektonskom diskursu nakon Drugoga svjetskoga rata radi humanizacije i kreiranja što pelicanjegr životnog okružja plastičnom i kolorističkom oblikovanju glavnu zgradu koristeći se s upomina u prizemlju i betonskim parašiolem, tj. ariranobetonskom pergolom, a glavni korpus zgrade rastućim pristojavanjem okvira, ariranobetonske međukratne konstrukcije i stupova, i multiplikacijom stijena odnosno ispuna s bodljom naglašenim parapetima i višekratnim prozorima. Vrhunac je kompozicije meštanjskog urbanističkog i arhitektonski rješena ulazna partija – leđeci trg sa vanjskim stubištima i konstruktivistički oblikovani ulazni most u samu zgradu.

Realizirajući zgradu na razmerni 1950.-ih i 1960.-ih godina, kada je u arhitektonskom diskursu sve osjetniji utjecaj strukturalizma, Ostrogović napušta plošno oblikovanje pročelja i naglašavanjem pojedinih elemenata i višestanojotretinamom uspjeva ostvariti izvrsnu teksturalnost. Pročelje je struktura saždina od horizontalnih parapeta i prozorskih klupića između kojih se nanajmješćeno nižu prozori s jednostavnom pedjelom polja i stupova, smješteni u ravninu s...
...i Jurković with a fully autonomous main building (theoretical classes and administration) and three pavilions with different departments, laboratories and workshops in a horticulturally designed environment, towards Ostrogović’s integration of four separate wings (drawing rooms, lecture rooms, teaching staff rooms, administration) into a coherent structure – a base – with a network of communications meant as socializing spaces and patios that serve as a replacement for open air green areas, besides providing bilateral natural light and a thorough ventilation of segments. Both buildings also share the same general disposition of the pavilions and wings, mostly double-loaded corridor slab blocks with rooms along both sides of the central corridor, divided into two main working zones (theoretical and practical work at the Technical College for Plant Engineers, i.e. work with students and teaching staff work of the Faculty of Mechanical Engineering and Shipbuilding). They also share the working spaces for students and departments, connected by rooms intended for general use such as administration and the like facing north, and lecture rooms and teaching staff rooms facing south, a centrally positioned entrance between the main functional zones, and location of the entrance area on the first floor due to the difference in elevation of almost one storey.

In an attempt to reach a synthesis of all arts, a tendency overwhelmingly present in the international architectural discourse after World War II striving to humanize and create an encouraging living environment, Haberle and Jurković shape the main building plastically and colourfully, using pillars in the ground floor and a concrete parapet, i.e. a reinforced concrete pergola, while the main corpus of the building is fragmented by multiplying surfaces, i.e. parapets accentuated by colour and multi-frame windows placed into the frames between the reinforced concrete floor structure and pillars. The climax of the entire composition is the brilliantly designed entrance space – a floating square with outdoor staircases and a constructivist entrance bridge.

Designing the building at the turn of the decade (late ’50s, early 60s), at the time in which the impact of structuralism is ever more prominent in the architectural discourse, Ostrogović abandons the planar shaping of the façade. The façade is multi-layered and possesses certain tectonics. The façade is structured with prominent horizontal parapets and window panes, with interchanging windows and pillars. The window panes have a dual function – they are wide enough to enable window washing from the outside. The same function is intended for the fence, i.e. an airy metal structure which, slightly shifted in comparison to the pillars and windows grid, covers the entire building like a net, except for lateral walls.

Regarding the artistic design of the buildings in the wake of the aforementioned idea of the synthesis, Josip Depolo, one of the most prominent art critics of the time, commends the interior design of the Technical College and the organization of team work on the building equipment, as an example of good practice. For wall decorations in the entrance hall of the building the investor hired members of the Croatian Association of Fine Arts. Through such collaboration, Depolo emphasizes, “the Investor was not only very satisfied, but got two wall decorations for less money than for decorating the same wall with an photographic image.”

6.4. Murali Ferdinada Kulmera i Boris Dogana u sjevernoj zgradi
Wall murals by Ferdinand Kulmer and Boris Dogan

6.4

Murali Ferdinada Kulmera i Boris Dogana u sjevernoj zgradi
Wall murals by Ferdinand Kulmer and Boris Dogan
Bahorića [1920–2002], a sculptor, was one of the most prominent and influential figures in the Croatian art scene. His sculptures are characterized by a strong sense of form, material, and space, often incorporating elements of nature, architecture, and everyday objects. His works are known for their complexity and depth, often reflecting social and political issues.


Bahorić's abandonment of figurative shaping was not only a reflection of trends or his personal artistic experiments. Instead, it fitted the task perfectly, by corresponding with abstract associations of thought processes and experimental entrepreneurship of workers employed with those institutions. Bahorić's composition remains autonomous, avoiding simple descriptive formulae, yet — through the constructivist approach and the use of material — it unmistakably points at the technical and engineering mission of the building in front of which it was erected.

Besides offering an illustrative example of a successful cooperation in the artistic interior design, the unique value of the northern building of FSB is the synthesis of arts: artists understand and respect the intentions of the architects, preserving the authenticity and autonomy of personal artistic expression. Their works correspond with the space and the challenges in a given environment and aesthetically supplement the entire purpose of the building. The architecture and the interior design of both buildings should be further explored and evaluated as paradigmatic example of post-war functionalism, and thus preserved and protected not only as listed heritage, but as the legacy of an era when the Faculty itself achieved its major successes and experienced some of its highlights.
The architects Marijan Haberle and Minka Jurković, and their associates participated in the selection of academic painters and graphic artists Boris Dogan (1923-1992) and Ferdinand Kulmer (1925-1997), as well as sculptor Berislav Bahorić (1926-2002). The sculpture is situated on a spot visible both from the street and the access bridge. Wall murals make the ascetic space of the entrance corridor more dynamic and humane, adapting it to the function of education and encouraging the creative and abstract way of thinking of its users, future applied scientists and engineers. This unique environment still communicates the spirit of the time of the post-war modernism, in spite of certain modifications and damages it has undergone.

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