Architectural education at Slovak University of Technology in Bratislava

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ABSTRACT: The authors of this article present an analysis of architectural education at Slovak University of Technology (SUT) in Bratislava, Slovakia. The reason for the summary analysis is to mark the 70th anniversary of architectural education in Slovakia and to acknowledge the 40 years of existence of an independent Faculty of Architecture. The aim of the article is neither to criticise the current state of affairs nor to formulate a programme for the future of architectural education. The article describes *things as they are* and leaves room for discussion about *things as they should be*, which must primarily occur via more flexible communication techniques and media. The educational context is documented with examples of current student projects - output in individual subjects/courses. Examples of student work consist in the contemporary output; however, for those who remember explicitly architecture-oriented education, they are a proof that the substance of the education changes only through the inclusion of *main topics* selected by the institutions. Modifications to the current status in comparison to the optimism of memories correspond with the objective development of the position of architecture.

Keywords: Architecture, education, Slovakia, university of technology, educational model

INTRODUCTION

Two main lines of architectural education can be distinguished; they are implemented at art and technical schools. There are also specialised architectural schools, but in effect, they are not standard institutions in any way. The education oscillates between the system role of an institution and the position - potential of the pedagogue. There is an institutional model and a personality-oriented educational model. Universities lean towards the former, while art schools prefer the personality-oriented model. For a university, the objective is to have educated, ethically equipped women and men prepared to practice their profession. *There are several models of architectural schools. The classical model - where a standard large university works with a wide theoretical basis and design studios where the theoretical knowledge is utilized and applied. Smaller architectural schools often use personality-oriented design studios that are basically based on the* learning by doing *method* [1]. The last addition to the range of architectural education models was the London School of Architecture (LSA) that was officially established in 2015. This educational model is based (both methodically and financially) on the overlap of architectural school and practice [2]. Despite its innovative institutional structure, the LSA may be characterised by means of the aforementioned basic educational models. If one wished to venture to the fringes of the wide spectrum of educational models, individual, non-institutional education could also be mentioned. Architects may also be taught outside a school; for example, by another architect directly in the design studio. However, without the pertinent diploma they cannot officially practice their profession. Architectural education has two levels: 1 - subconscious and 2 - conscious. Subconsciously, everyone starts learning about architecture in their early childhood. People are in contact with architecture every day. Architecture influences, teaches and educates people. One can talk about conscious education in architecture only when one starts talking about the built environment that surrounds us, and about mutual relations between elements of which it consists. Conscious education may have to start at an architectural school, but may not need to.

The history of the SUT is specific, as was the birth place of the current Academy of Fine Arts in Bratislava. The present duality in education, its technical and artistic foundations, thus, have a common basis in history. Architectural education naturally has had to respect institutional boundaries set by the university, and still must do so. However, the personality-oriented principle, especially in creative studio work has been preserved since the school was established. The architectural school still echoes a memory of the School of Arts and Crafts, which later gave ground to the Academy of Fine Arts - a home of top artists, and the memory of its founders who were the very best Czech and Slovak architects of their time. For 70 years, the architectural studies have developed rather independently with regard to their content, in the more or less supportive environment of the University of Technology.

The development of the overall educational model comprises constant balancing of diversified influences. The core of designer studio work has been rather stable for all of the 70 years, with more flexible curricula of art lessons, theory or other contemporary external influences oscillating around the said core. The main feature of the development is the reduction of the total number of lessons, which is determined objectively. The inner richness of the model is implemented in the ever-decreasing framework, while the proportion of optional, spontaneous events is expected to increase.

To a considerable extent, universities providing high-quality education exist, supported by the money from events beyond the bounds of obligations. *The scope and degree to which education is specialized is associated with the fundamental question: where the reach of architecture starts and where it ends. Element, object, residence/settlement, territory ...programmes and specializations in design, architecture, urbanism, planning, zoning. Within each programme, we have arts, technology, economics, etc. The scope of topics is determined by the school model* [3]. The world is constantly changing and the profession of an architect changes with it. An architect now leans more towards a (social) activist than a creative intellectual. She/he experiments with the nature of their profession, works as a presenter, gardener, artist, book publisher, town guide, sociologist or cabinetmaker... and goes beyond the boundaries of several disciplines. The new nature of the profession of architecture stems from this state of affairs. Architectural schools more or less respond to the situation in their study programmes. *For the education of an architect, the relevance consists in the span with which the erudition is assessed with respect to contrast polarities. Students of technical disciplines are asked to say what they know about Shakespeare and arts and humanities students are asked to explain what entropy is* [4].

EDUCATION OF ARCHITECTS

The authors endeavour to describe the situation with regards to the education of architects in the Faculty of Architecture at Slovak University of Technology in Bratislava. This has not been based on the current status of study courses and programmes or the curricula. The main content substance of education is identified in the article regardless of the position assigned to architecture within the system at the University. Presented here is a set of topics - areas that constitute the stable structure of education from its very beginning. It does not matter exactly since when drawing has been taught nor what was actually covered in the courses. What is important is the fact it has been taught, and still is, while the aim is to cultivate the talent of the students and make them more sensitive with respect to their perception of architecture. Similarly, the disciplines of construction engineering, history of architecture, studio design have been constantly modified; however, throughout the overall gradual development of the school, the thematic groups have remained relatively stable.

Institutional, official education of architects in Slovakia started in 1946 when the Department of Architecture and Civil Engineering was established at Slovak Technical University in Bratislava. Basically, from the very start, the education process underwent a series of changes and reforms. In 1950, the Faculty of Architecture and Civil Engineering was established at Slovak Technical University as one of its six faculties. In 1960, the Faculty of Architecture and Civil Engineering was merged with the Faculty of Construction Engineering and the engineering section of the Faculty of Economic Engineering to form the newly established Faculty of Civil Engineering. A separate Faculty of Architecture was not established until 1976. In 1991, Slovak Technical University transformed into Slovak University of Technology in Bratislava. The corpus of topics of architectural education has been preserved basically from the beginning. When looking into the history of the school, moments that were described as crucial can be found; however, if it is perceived as a body with educational content structure, the content has changed very little, which is the very fact that should be pointed out. It can be demonstrated by comparing the groups of subjects/courses taken not long before the end of existence of the architecture study at the Faculty of Civil Engineering at Slovak Technical University and in the *not so distant past*.

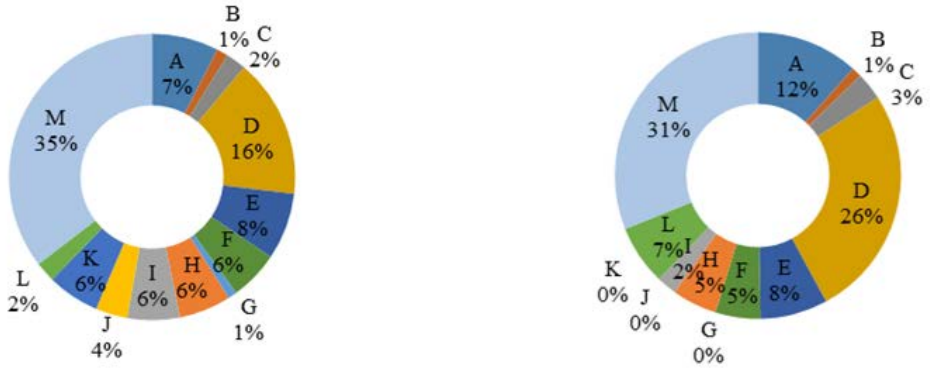

Figure 1: Charts show the percentage of individual topics/themes in the educational process. They have been prepared based on the number of lessons/lectures in individual subjects per week, which one finds to be an objective criterion for their comparison. Left: study in years 2001-2007. Right: study in years 1970-1976. Legend: A - art lessons, B - architectural composition, C - basics of architectural design, D - civil engineering, E - history of architecture, F - urban design, G - landscape and garden architecture, H - typology, I - interior, J - CAAD, K - sustainability, L - theory of architecture, M - design studios.

Similarly, the method of admission to study based on the assessment of the talent of the applicants has been preserved, although the form of entrance examinations has undergone change. The procedures for approval of branches of study/courses, programmes, plans (essentially the process of gaining the right to award diplomas to graduates and the current accreditation process), would deserve a separate analysis. The same applies to the education nomenclature terminology, hierarchy of terms, such as programme, branch of study, plan and the development of competencies of the government, the ministry (commission), university, faculty... accreditation commission, etc. This will be the subject of another research project.

As regards legislation, it is important that the final product of the education is the potential to start practical work, to practice one's profession in accordance with the national and international standards, and regulations. The educational process at the school these days occurs within the boundaries determined by the traditions since the founding of the school and the EU notification published in Communication No. 2010/C 337/02 [5].

From traditions perceptible solely in Slovakia, one can freely practise one's profession within the EU member states. When talking about practising the architectural profession, the role of the Slovak Chamber of Architects needs to be mentioned. To become a member of the Chamber, three years' practical experience and a sufficient architectural work portfolio are needed, among other things. All in all, the practical experience is a continuation of the architectural education.

MAIN TOPICS

When one thinks about the most stable parts of architectural education and what the more flexible levels are, the *main topics*, such as history, visual art disciplines, construction engineering, typology, architectural design, etc, have been present from the time of first written accounts of the educational process. They do not change, regardless of their institutional form and organisation of activities. What does change, however, is their formalisation and the degree of normativeness. As a response to the requirements concerning a wider context, new topics, such as computer-aided architectural design (CAAD), sustainability or universal design are continuously added.

In case of topics of sustainability and universal design, it is basically a different - new approach to *stable* topics; it is not so much about bringing new content, but about a different view of the existing, stable topics. As regards sustainability, retrospective analysis by which one could back-track it in the past educational process, is relinquished. However, with a little distance - detached view, this is still architectural designer work or a different perspective regarding typology. Changes in the context and methodology paradigms eventually have the same objective - architectural product set in the social and cultural context. Thirteen major (*main*) topics may be identified in the process of educating architects at Slovak University of Technology in Bratislava.

Visual Arts (applied arts) constitute the potential that is already required from the applicants for study. They nurture the talent and make students more sensitive to their environment and people for whom they design - will design architectural works. Mastering the visual art techniques of projection, as well as the understanding of the space, matter and dimensions are an important part of serious professional training of students for the profession of architect.

Visual art education is to teach the future architects to use efficiently the still-unsurpassed trajectory of an idea from the brain through the hand and pencil, eventually, on the paper. Visual art lessons also include subjects of architectonic drawing and art work in architecture that are akin to bridges between the visual - artistic - free designer work and the comprehensive architectonic designer work.

Figure 2: Student projects from visual art courses. Left to right: architectural drawing - lines (student: Dominik Seidl); architectural drawing - axonometric relief; still life (student: Jana Korčoková); study of human physique (student: Simona Brenčičová).

Figure 3: Student projects from visual art courses. Left to right: modelling; drawing outdoors - historical town housing; drawing outdoors - municipal housing.

Figure 4: Student projects from the subject Art Work in Architecture. Left to right: art pavilion (student: Dominika Gáborová); pavilion Tea Room FA - Tea in Crate; pavilion at the Grape Festival.

For architecture students, *architectonic composition* is one of the basic tools for creative work with new dimensional quality. The Encyclopaedia of Aesthetics refers to composition as *the order, proportions and relations between individual parts of a work of art, especially if the order and the correlations are the manifestations of the explicit decision of the artist. The word also refers to the activity by means of which the artist implements the correlations* [6].

Architectonic composition is perceived on the one hand as a theoretical discipline about the origin and evaluation of dimensional manifestations of an architectural work, but on the other hand, also as the creative process and, simultaneously, its outcome - new dimensional quality. The *instrumentarium* of the architectural design primarily comprises tools, means and methods of architectonic composition.

Figure 5: Student projects from the subject Architectonic Composition. Left to right: concentration - de-concentration, drawing (student: Mária Gogáľová); concentration - de-concentration, colour (student: Jakub Slameň); tension - calm, structure (student: Anna Šmeringaiová); continuity - discontinuity, structure (student: Juraj Kubina).

Figure 6: Student projects from the subject Architectonic Composition. Left to right: Comes and Goes (student: Ivan Kanich); Comes and Goes (student: Veronika Gramerová); high-tech space (student: Barbara Poláková).

Architectural Design Basics (ADB) is a follow-up to the theoretical subjects, which establishes a base of knowledge and skills necessary for designer work in architectural design studios. ADB is a preparatory discipline for architectural designer work, the objective of which is to teach students about the nature of an architectural work with regard to space, matter and shape. Students learn about the basic principle of the architectural design, which is the creation of space. They learn how to define dimensional relations and how those relations may influence each other. Basics of architectural design and composition are not actual architectural designer work.

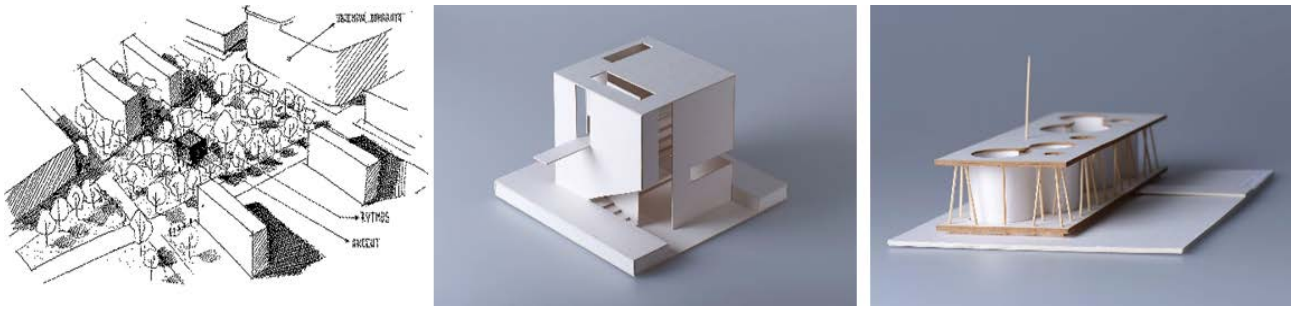

Figure 7: Student projects from the subject Architectural Design Basics. Left to right: analysis of a town park in Bratislava for which the students later designed an architectonic object/structure (student: Viktor Mikovčák); design of an architectonic structure in the shape of cubicle in terms of a *raumplan* (student: Matej Vais); design of an exhibition pavilion in the dimensions of a *plan libre* (student: Matúš Kiaček).

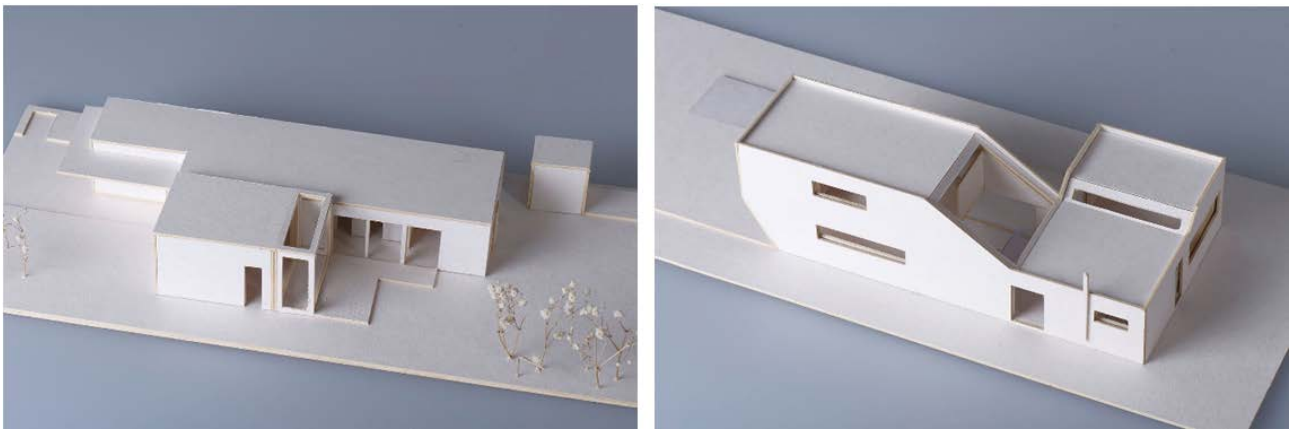

Figure 8: The core project in the ADB is the preparation of an architectural study of a small architectonic structure with a simple layout and the theme of living/housing. Left: design by student Monika Otrubová. Right: design by student Miroslava Kamenská.

The objective of the subject *Civil Engineering* is to teach students the techniques for materialisation of the architect's idea. The construction is the embodiment of the idea, objective, function and the composition structure of the construction. An essential requisite for the creative work of an architect is to know what is possible and what is not, to know the technical and technological characteristics of the construction substance of a building, principles and rules of designer work. Architecture, in its materialisation, is a constant struggle - rivalry with the gravitation. Civil engineering is the *firmitas* of architecture.

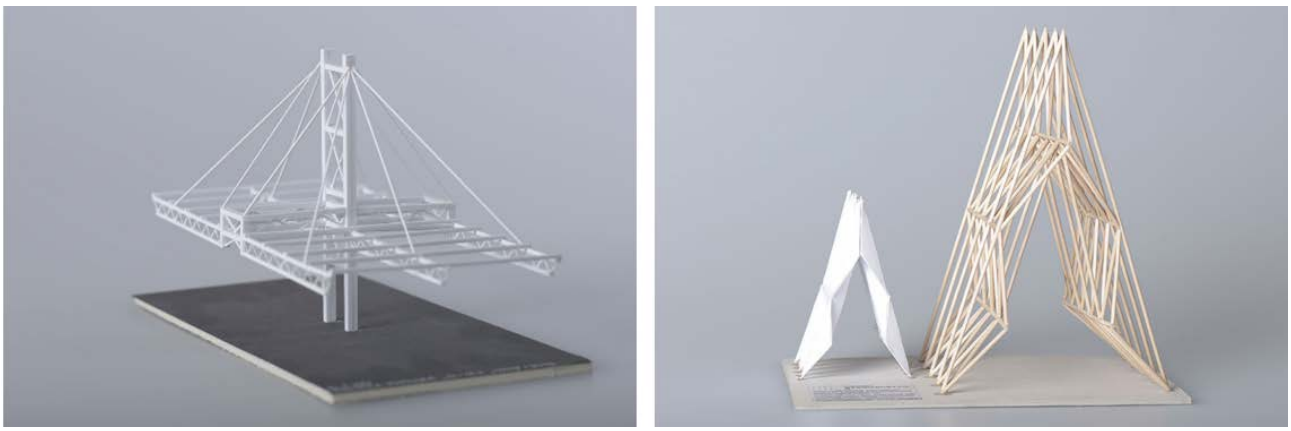

Figure 9: Student seminar projects from the subject Civil Engineering. Left: design by student Dominika Podolská. Right: design by student Andrej Kocian.

Teaching *History of Architecture* has a long tradition at Slovak University of Technology in Bratislava; it has become an indispensable part of the profile of education and training for the profession of an architect. Students receive a basic overview from the field of art history, history of sights and monument conservation and restoration, history, archaeology and related scientific disciplines; they work with relevant sources, visit archives and perform in-field research. Teaching history is to provide the students with a cultural framework, with respect to both the mental and the creative aspects. It not only helps them to become aware of the value of historic architecture, it also assists in their creative reflection on the contemporary architectural work/design.

Figure 10: Historic architecture models are the output from the subject History of Art and Architecture. Left: Dr Szontágh Sanatorium, Nový Smokovec (architect: Michal Milan Harminc). Right: Slovak Rowing Club, Bratislava (architect: Emil Belluš), authors of the model: Jozef Karlubík, Rasťo Kňava, Peter Školek.

Urban design and planning acquire several meanings in the practice of the profession of an architect. The ability to design a structure for the client in accordance with the zoning plan encompasses the ability to read the design, the letter and the spirit of the zoning plan. The second meaning stems from the fact that an architect is able to design urbanist concepts and subsequently be the head of the team that is to prepare the zoning plan.

The third reason is the fact that some architects offer valuable services to society in the state and municipal administration bodies where their work includes the procurement of urbanist concepts and zoning plans and issuance of building permits in accordance with the concepts and zoning plans. Last, but not least, urban design and planning are a public matter and are subject to discussion in which the architect should be an active participant. Urban design embodies the combination of the art and aesthetics-oriented approach with the rational approach: *the artistic aspect of the urbanist design has its rational factor, its rules and logic* [7].

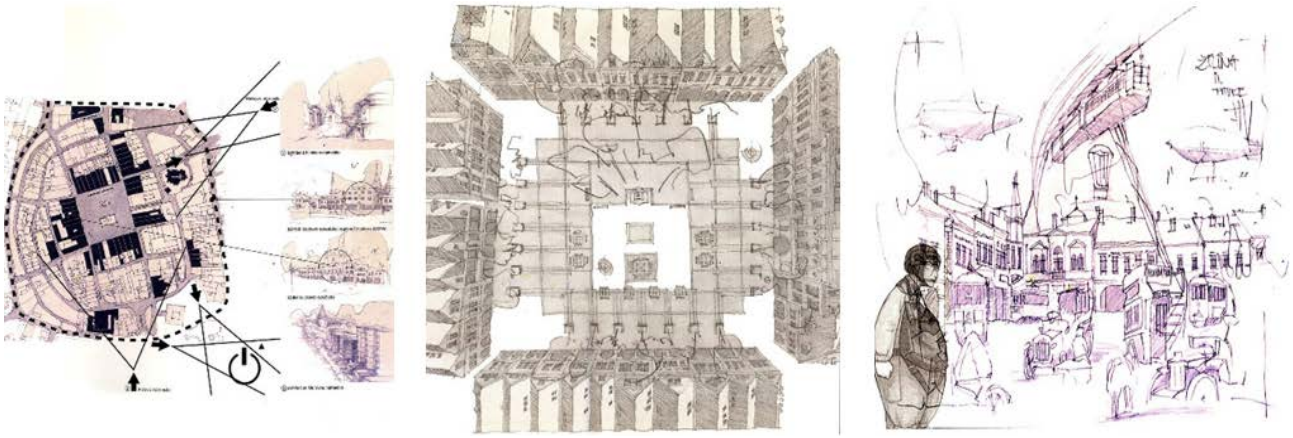

Figure 11: Seminar project for the subject Town Interior. Ľubomír Kružeľ: a square in Žilina. Left to right: composition analysis, design plan view and perspective view sketching.

Teaching *Landscape and Garden Architecture* in the Faculty of Architecture at Slovak University of Technology has more than 25-year long tradition. The objective of the educational process is to give the students an insight into *...the most important, fundamental issues from the extraordinarily wide diapason of professional specialisations of a landscape architect: from reconstruction of historic parks and making of new parks and gardens, through design of green areas and solid objects in towns, issues related to environment protection, functional and aesthetics-related issues regarding new landscaping up to the analysis of some of the specific practical contemporary studies and projects* [8].

Figure 12: Drawing of the picture of the town of Banská Štiavnica by senior lecturer Docent Milan Kodoň, as an example of the work of the famed teacher, one of the pioneers of teaching of landscape and garden architecture in Slovakia.

The branch of science focusing on *typology* of buildings constitutes one of the pillars of architectural education. It includes the principles of designer work for all types of buildings that can be classified according to their basic or dominant function as residential buildings, civil buildings (culture, sports, health-care, school and education, business, administrative purposes), production facilities and engineering structures. There are typology principles, regulations and rules associated with particular types of buildings which students learn step-by-step in individual specialised typology courses. In general, it can be stated that typology principles aid to make architecture more functional and purposeful.

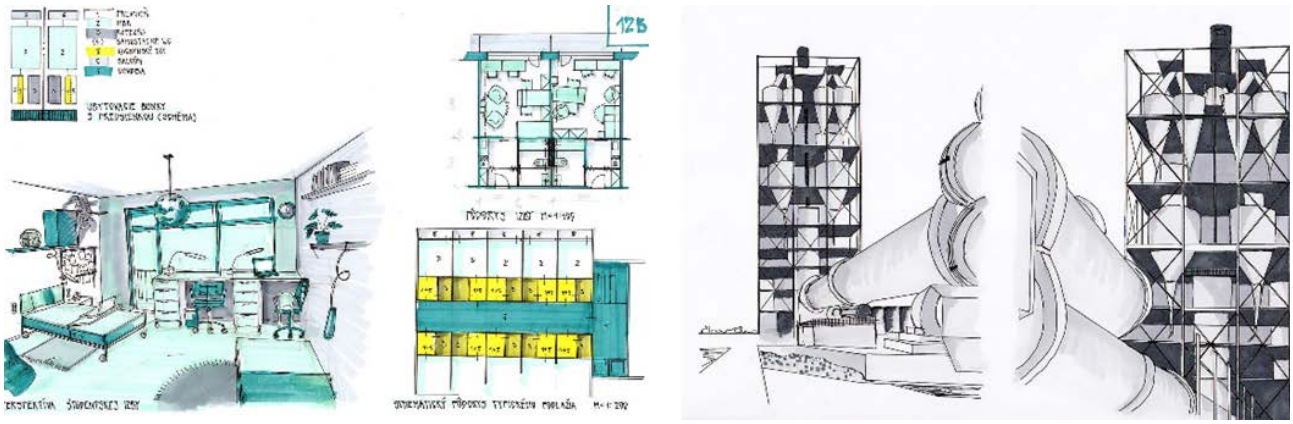

Figure 13: Seminar projects for the subject of Typology. Left: design of residential-quarters unit and a student room in a dormitory-type lodging house a (student: Miroslav Mišovič). Right: typology of a cement factory production complex.

Strictly speaking, the main focus of architecture has always been and always will be on interior areas that are a harmonic continuation and extension of the exterior areas and which determine the very essence of architecture [9]. The authors consider interior design to be an equally valuable architectural and artistic discipline with its own means and methods of expression. From a certain perspective, interior is in the middle - between architecture and design. *Interior design is an architecture-design discipline, implemented, as a rule, in the particular interior environment, which proves that in its essence, interior design is a link between the big architecture and small design* [10]. The main topics in the teaching process with respect to interior primarily focus on living/housing, public and work interior, interior reconstruction and revitalisation, exhibition management and design.

Figure 14: Seminar projects with the theme Interior. Left: interior design of a bedroom (student: Monika Lešková). Right: multi-purpose desk Wood Work Desk (student: Anna Dulíková).

The introduction of the topic of *computer-aided architectural design* (CAAD) is a result of the dynamic introduction of digital technology into the architectural education process. From a tool that originally served for more precise visualisation of creative ideas, it has become an active designing method. CAAD keeps expanding and, at the same time, increases the level of sophistication of its *instrumentarium*. The objective of the CAAD teaching is to develop the contemporary aspects of creative thinking and communication of a student - architect and urbanist based on the utilisation of modern CAD and BIM (building information modelling) systems and information and communication technology.

The workplace focusing on the *sustainability* and environment-friendly approach to architectural design was established as a result of the need to respond to the trends and the growing focus on the environment and ecology. Architecture is perceived here as an integral part of the environment and, thus, the approach to architectural design is correspondingly comprehensive. The programme of the institute that specialises in architectural design, in accordance with the long-term sustainable development strategy and experiment work, expands concepts of design of energy-saving buildings (passive houses, houses with almost zero energy consumption and active houses) with the ongoing focus on alternative sources of energy and comprehensive methodology of designing buildings and urban complexes in accordance with the sustainable development strategy.

Figure 15: Left: a bus stop built in the municipality of Červený Kameň, constructed from clay bricks from a knocked-down structure by a team of students and pedagogues from the Faculty of Architecture of Slovak University of Technology, realisation: early 90's. Right: Lungs House design (student: Jozef Spurný), which involves creative application of principles of the environmentally-bound design. The design is based on the passive-house principles, for a passive house in an extreme-conditions environment.

It could be assumed that in the architectural schools in Czechoslovakia and, especially in Slovakia, teaching of the *Theory of Architecture* and of theoretical subjects would have a tradition at least equally long as the teaching of practical subjects. If the maxim appearing throughout the whole history of architectural education can be accepted, that the general theory of architecture was perceived by the legislation and protagonists of its teaching as various interpretations of what was, is and, potentially, will become architecture, and all justified procedures and processes accompanying its design, the initial assumption would be correct.

Theoretical subjects belonged to the sphere outside the studio design teaching process; therefore, they were given the epithets referring to a theorising, not very interesting, and rather unpopular (among architects), *speculative* sphere of thinking about the content of an architectural work. At the stage when the branches of architecture and, later on, urbanism were established, theory did not have the ambition to become a separate discipline - the theory of architecture contemplating the meaning and import of architecture. It was considered to be something similar to methodology or an unspecified, practicing tool instrumental in architectural design and designer work.

In study programmes, the so-called theoretical subjects were perceived as a part of or a synonym to great specific theories, such as structural analysis, typology, construction, etc, without being systematised in the theoretical study of architecture. Together with the history of architecture, with a more prominent position in the teaching process and the very sporadic architectural critical analysis, a scientific concept of what is architecture was presented and the existence of architectural discipline - theory of architecture was acknowledged, especially, in architectural schools.

Design Studio is the core subject at all architectural schools. The difficulty level in designer work, either architectural or urbanistic, starts with a white sheet of paper or an empty screen. The white sheet of paper is the metaphor for the start of the design process. The studio designer work is first classified according to its levels of difficulty and later according to thematic groups. The difficulty level gradually increases due to assignments with ever-increasing typological complexity, and the extension of the scope and level of detail of the prepared documentation. Thematic groups basically follow the standard typological categorisation of buildings, residential buildings, civil buildings, interior, etc.

Figure 16: Design of the Academic Centre of Slovak University of Technology at the Námestie Slobody square in Bratislava (student: Martin Mikovčák), Design Studio III - 3rd year of the bachelor study.

Final projects constitute a specific form of standard studio designer work. Their outcome is more precisely defined with respect to the legislation and accreditation requirements concerning the functioning of the Faculty. In their final projects, students are to prove they are capable of preparing comprehensive architectural designs and designs of buildings, and their interior and exterior areas, and that they are able to solve tasks in a creative and original manner/to design anything from urbanist complexes through architecture of buildings to the artistic and technical details, including building interior and exterior, to coordinate the aesthetic, technical, construction, economic, environmental, social and other requirements for their construction.

Figure 17: Reconstruction of the power plant in Piešťany (students: Michal Ganobjak, Vladimír Hain). Left: a student project - part of Design Studio IV - reconstruction of historic sights/monuments. Right: photograph of the finished structure (Photo by: Pať o Safko).

The context of architectural education has always included disciplines, such as mathematics, physics - for a certain period of time, and descriptive geometry - on a continuous basis. Physics is taught as applied physics in engineering and, in this form, it is a stable part of the topic of civil engineering. Descriptive geometry oscillates between manual architectonic drawing and CAD systems. It constitutes an objective core subject through which even nowadays one can monitor the understanding of dimensional mechanics/rules. In addition, the educational context comprises the postgraduate study in which the practicing of the profession is limited by the research and theory of architecture. However, this highest internationally recognised level of education is not the topic of this article.

CONCLUSIONS

When changes occurred in the history of the educational process, they were most often associated with organisational changes. Organisation units of the school are changed on an almost regular basis, maybe under the rather illusory impression that the organisational change will be accompanied by an increase in quality. Generally, changes occur almost regularly, except for the crucial ones, such as the foundation of the Faculty of Architecture, therefore, basically there are no graduates of a single model of study. After all, the process of architectural designer work is a continuous one that responds to new incentives. The current institute (a former department, later chair unit) is the least stable factor; it has changed the most often from a historical perspective. It is a logistical unit that administers and implements a part of or the whole study programme. The workplace is stabilised due to its specialisation in research; this can have variable *durability* with respect to time. A specific position in the educational model of a school of architecture is held by the pedagogues. On the one hand, they are the most fragile components of the education system; on the other hand, they are more firmly embedded in the history than all other objective components. Forty and more years of teaching are nothing extraordinary for a pedagogue, which is longer than the period for which any model of study or its organisation units remained in the same form/format.

It can certainly be argued that there is no objective universally applicable school and study model; well-functioning examples of each of the infinite number of models can be found. It is the place in-between the main topics and the teachers where all stories occur, with foundation of schools, their reforms, accreditation, evaluation, notifications, etc, and in the end, the graduates remember their teachers better than they remember the educational model.

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BIOGRAPHIES

Robert Špaček finished his study of architecture at Slovak University of Technology (SUT) in Bratislava in 1976. Between 1981 and 1982, he was a postgraduate student at the University of Hannover. He is a member of the Institute of Ecological and Experimental Architecture of the Faculty of Architecture of the SUT, which he founded in 1990 with Professor Julián Keppl. In his research, teaching and publication work, he focuses on sustainability, urban democracy and ethics, as well as architectural theory and review work. He is an author and co-author of dozens of scientific and popularisation texts, such as *Rukoväť Udržateľnej Architektúry* (Compendium of Sustainable Architecture), *Solárne Mestá* (Solar Towns) or *Efektívne Bývanie* (Efficient Dwelling). He is a member of scientific and publication boards and other boards and associations. Since 2010, he has been the Vice-Dean of the Faculty of Architecture of the SUT for Research, PhD Study and PR.

Ľubica Vitková has been the Dean of the Faculty of Architecture of the SUT in Bratislava since 2010. She is the guarantor of urban studio design and several bachelor and engineer study courses. In her science and research work, she specialises in urban design and urban economics with focus on urban structure of towns, zoning management and transformation. She has given lectures at several universities abroad. Since 2002, she has been an authorised SKA architect. In her practical work, she prepares urban and architectural studies and designs. She has been a member of the Council of Representatives of the AESOP - Association of the European Schools of Planning, and a member of the Advisory Committee on Education and Training in the Field of Architecture and the Commission of the European Union. She is a member of the Board of Directors of SKA and, since 2010, a member of the EU Committee for Recognition of Professional Qualification of Architects.

Lukáš Šíp finished his study of architecture and graduated from the Faculty of Architecture of the SUT in Bratislava in 2007. He is an architect and a pedagogue and also works in applied research, all at the same time, and searches for potential combinations/overlaps between these three fields. Since 2010, he has worked for the Institute of Ecological and Experimental Architecture of the Faculty of Architecture of the SUT and for the architectural studio coolstock established in 2012, where he was a co-founder. In his research, he specialises in sustainable architecture, analysis of its potential forms and architectural representation, as well as the wider context of the term *sustainability*, especially, in relation to the cultural field. He is a co-author of publications *Rukoväť Udržateľnej Architektúry* (Compendium of Sustainable Architecture), *Solárne Mestá* (Solar Towns) and the book East Side Architecture - *Súčasná Architektúra na Východe Slovenska* (Contemporary architecture in Eastern Slovakia).