Urban design teaching in Slovakia

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ABSTRACT: The beginnings of higher education in urban design in Slovakia date back to the second half of the 20th Century, when the teaching of architecture started at the Faculty of Architecture and Civil Engineering, and later at the independent Faculty of Architecture, Slovak University of Technology (SUT) in Bratislava. During this era, which is often called the golden age of Slovak urban design and planning, the Bratislava school of urban planning has been playing a distinctive role. It has made Slovak urban planning well known internationally. Current instruction in urban planning at the Faculty of Architecture follows the tradition of this strong urban planning school. Teaching of urban design has traditionally been a part of architecture study programme. The specialised study programme of urban design at the Master's level broadens insights onto the urban design and planning disciplines. The study programme is fully recognised within the EU nostrification procedure.

INTRODUCTION

The relationship between architecture and urban design is inseparable. Each structure or architectural work is part of a broader cultural issue - of a city or a landscape. The urban concept of an area and architectural dimensions are in a symbiotic mode. Such ties are reflected in architecture education and training. Urban design is strongly based on the cultural tradition of architectural education in Central Europe. Architects have become the profession accountable for urban design and town planning.

The affiliation between architecture and urban design is also reflected in professional practice, as well as in the theoretical and scientific work of many architects. Urban design is an inseparable and significant part of an architect's work. Many distinguished architects dealt with urban design in their many significant works, e.g. C.L. Engel, O. Wagner, C. Sitte, J. Plečnik, Le Corbusier, and others. Local architects include D. Jurkovič, A. Engl, P. Janák, F.L. Gahura, B. Fuchs, J. Gočár, F. Silbersteina-Silvan, I. Peňáz and K. Gross. After 1945, urban design has become a more significant part of the Slovak architects' works (F. Čapka, M. Scheer, A. Stuchl, J. Svetlík, A. Bél, T. Alexy, J. Kavan, F. Trnkus, P. Gál, and others).

THE HISTORY OF URBAN DESIGN TEACHING IN SLOVAKIA

Training in the field of urban design has a more than 50 year-old tradition in Slovakia. Its beginnings are linked to the establishment of the Slovak Polytechnic in Bratislava (SVŠT). Before then, during the 1920s and 1930s, architectural departments were part of the Czech Technical University in Prague and of Brno University of Technology. Prior to teaching of architecture in the Czechoslovak Republic, the higher instruction in the field of architecture was conducted in Vienna and Budapest. Prof. Emil Beluš, one of the founding members of an engineering department at the Slovak Polytechnic, studied there. He was aware of the importance of urbanism in an architect's portfolio, and urban design became a part of the architecture study curriculum. When in 1950, the Faculty of Architecture and Civil Engineering was established Beluš invited many Czech professors to lecture at the Faculty.

Among the others, Prof. Emanuel Hruška became the founder of urban design in Slovakia. He established the Institute of Planning and Sociology during the academic year 1948/1949 and the first Institute of Town and Village Planning was set up in 1949/1950. After the establishment of the Faculty of Architecture and Civil Engineering (FAPS) in 1950 the Institute was then transformed into the Department of Urbanism.

In 1960, it became a part of the Faculty of Civil Engineering and the tradition of a six-year study of architecture started. The Department of Urbanism and Urban Planning was one of the Faculty's four departments. Heads of the Department included: Prof. E. Hruška (1950-1961), Prof. Ján Svetlík (1961-1974) and Prof. Rudolf Šteis, (1975-1976).

The Department continued teaching after the independent Faculty of Architecture (FA), was established at the Slovak University of Technology on 1 September 1976. Prof. R. Šteis (1976-1987) and, subsequently, Prof. Tibor Alexy (1987-1990) were elected as the leading persons.

At the beginning, the independent Faculty of Architecture offered two study programmes: architecture and urban design, and urban planning (followed by the study of urbanism and finished by the doctoral degree - CSc). Due to increasing social interest and demand, in 1982, an independent study programme of *urbanism and urban planning* was established (Master's degree - Ing. arch.). The Department was subdivided into sections of zone structures, residential developments design, regional planning and of a section of land use planning. The structure shows the complexity and broadness of the spectrum of architecture training and education. Each of the leading personalities has influenced the form and the curriculum of the teaching programme.

Prof. Hruška has established the basics of urban design, urban composition and the development of town building. He also founded his own distinctive school, whose graduates have become strong influential personalities at the University and in professional practice. Prof. Svetlík has broadened the connection between architecture and urbanism by his own architectural practice. Prof. Šteis has further developed and extended the teaching of the land-use planning aspects of urban design and regional urban planning. The contribution of Associate Professor Kodoň lies in extending the architecture and urban planning of landscape architecture teaching. The collaborative work of three Professors Tibor Alexy, Ján Kavan and Filip Trnkus in domestic and international competitions is most remarkable.

From the original department in 1990, three departments were established, two departments of urbanism and one of the landscape architecture (Department of Urban-Architectural Complexes, Department of Residential Development Design, Department of Landscape Architecture and Garden Design).

In 2003, the newly established Institute of Urban Design comprising four departments had a multi-disciplinary character. It gave instruction in the area of urbanism and land use planning, landscape architecture and landscape design, spatial planning and management. Since 2008, it has been divided into an independent Institute of Urbanism and Land Use Planning and the Institute of Garden Design and Landscape Architecture. Spatial Planning and Management Department became a part of the Institute of Management at SUT.

A two level system of education: undergraduate (Bachelor degree study) - 4 years, and postgraduate (Master degree study) - 2 years, validated by an accreditation committee was introduced in 1997. After graduating in architecture at the undergraduate level students can continue their study at the postgraduate level by choosing the Architecture or Urbanism module. The Urbanism module consists of U1 programme - Urban-Architectural Complexes, U2 - Residential Developments and Territorial Planning or U3 - Landscape Architecture and Landscape Planning, which later became an individual accredited study programme of the Department of Landscape and Garden Architecture. In accordance with the new law on higher education, from 2002, a new system of modules (study programmes) was introduced. At the FA-SUT the 5.1.1. Module of Architecture and Urban Planning has been transformed into the Architecture and Urban Planning module at the undergraduate level and the Architecture module at the graduate level including the Urban Planning module at the graduate and postgraduate levels.

CURRENT SYSTEM OF ARCHITECTURAL EDUCATION IN THE FIELD OF TOWN PLANNING

The Slovak Chamber of Architects is currently the only body in Slovakia, which can grant professional certificate in the field of architecture, as well as of urban planning and design. In practice urban design is interconnected with urban planning, thus, they are the two basic foundations for urban planning practice. The requirements for the education of architects include:

...knowledge of urban design, planning and the skills involved in the planning process; and the understanding of the relationship between people and buildings, and between buildings and their environment, and of the need to relate buildings and the spaces between them to human needs and scale [1].

These requirements are at the core of the education system of architects in Slovakia. Urban disciplines are integrated into the curriculum of Architecture and Urban Design programmes at the Faculty of Architecture in Bratislava, at the Faculty of Fine Arts in Košice and at the Faculty of Fine Arts and Design in Bratislava.

The Faculty of Architecture has traditionally offered urban planning that is a highly creative activity with rational and genuine approaches. The founders of the study programme have already stated that ... artistic side of urban design also has its rational part, its rules and its logic [2].

Urban planning teaching is based on the design of a complex multi-purpose space. Its part is a detail by which students can express the scope of their subsequent architectural design. In this way, they can perceive the mutual complexity of the relationship between the part - segment and the whole complex. The focus on the public space design has recently become a more dominant part of the Bachelor programme at the Institute of Urban Planning (Figure 1).



Figure 1: From the concept in large scale to detail and interventions (presented on sketches). This pre-diploma project (2014/2015) entitled *Ružinov - City living room* was elaborated by students: E. Blaho, D. Schuchmannová and L. Michalka.

Team based design studio represents the core approach in the teaching of the urban module. Advanced years students work via mutual discussion, argumentation and varied approaches to solutions and artistic expression with undergraduates. The methodology of this design studio is based on developing and establishing the concept solution by creating a working model, which is also a traditional training approach in education. For this purposes a model making workshop and a specialised model simulation laboratory are available to students.

Studio work comprises both theoretical and practical work. On the one hand, students can explore practical and theoretical knowledge and skills. On the other hand, they are also exposed to professional information. One part of the curriculum is also dedicated to town planning that is primarily focused at the town planning specifications and land use document administration (Figure 2 and Figure 3).



Figure 2: Common model as the base for team work studio (left) and the searching design through sketches on the model on the right (Photo by L. Vitková).



Figure 3: Urban design studio supported by additional educational events and by cooperation with praxis. Integral parts of urban design studio are presentations and discussions at various stages of project preparation (Photos by Hanáček and L. Vitková).

At the undergraduate level, the compulsory urban planning disciplines are focused on the design of basic urban forms, the history of urbanism, basic urban typology, composition design and the design of small scale mono-functional urban structures. Urban composition is an introductory urban design course. The teaching within the course aims to lead students to imaginative solutions, creativity and a sensitive perception resulting in an ability to analyse and design urban compositions. The history of urbanism is the traditional compulsory seminar course; the curriculum is based on the work of Prof. Hruška. Urban Planning I addresses the issues of urban typology as a conceptual fundament for urban and architectural design of urban zones. Primary topics include typological elements of a residential environment and its operational principles, amenities, function and mass relations within an urban core. It creates the introduction to urban reconstruction as well.

Urban Planning II focuses on urban planning issues of residential developments, especially, the scale of a town as whole. It introduces the topics of functional, operational, spatial and a mass composition of a residential development. These two courses create the theoretical and practical parts of Urban Design Studio I. Students are introduced to the issues of conceptual creative skills in urban and architectural design via a small scale residential zone design. During the whole design processes, students actively work with a model. All undergraduate students have to pass these urban planning courses. Students can extend their knowledge and skills on urbanism by signing up to extra optional courses, which are taught as modules. One should mention Module 8 - Urban Design, which is taught as a design studio supported by seminars on theoretical issues. The Institute of Urban Planning also coordinates the Introduction to Legislation for Architecture and Urban Planning course, which provides students with instruction on basic legal knowledge in the field of architecture and urban development.

Urban Design Studio is the mutual design studio of the programme at the graduate level. It focuses on the multipurpose zones and aims to use an interdisciplinary approach in the areas of functional, cultural, aesthetic, ecological, economic and social fields. The final studio project results in an urban model. The topics at the studio include current issues of urbanism – urban transformation and reconstruction of urban zones, core development zones, derelict and abandoned areas. Urban Planning programme addresses the topics of land use planning documentation and land use plans administration. The skills necessary for regulation plans processing can be acquired in the Land Use Plans Administration course.

The Urban Planning programme includes other interdisciplinary courses, which supplement the core urbanism courses, such as Transport and Engineering Infrastructure, Public Spaces, Urban Economics, Urban Management and Marketing, Urban Reconstruction, etc. Extra optional courses available to students are Urban Stability and Ethics, Rural Developments and the Landscape. Continuous Master's thesis design studio is taught as the final stage of the study, and is represented by urban concept design in the urban development scale and its spatial relations or in a large scale zone, which is further developed in the Master's thesis work. This design studio establishes the basis for Master's thesis design studio work, which consists of a complex urban planning concept containing architectural and urban details, including the regulation plans. The research diploma seminar accompanies the continuous Master's thesis project and the Master's thesis project.

The student profile is in concord with the Directive 2005/36/EC on higher education training of architects to pursue the profession:

Graduates understand the cultural, intellectual, historical, social and economic relation of architecture and environmental context. They comprehend architect's role to a client and society and they develop analytical and creative thinking. Architectural design, the quality of buildings, their harmonious incorporation into their surroundings, and respect for natural and urban landscapes and for the public and private heritage is a matter of public interest. Mutual recognition of qualifications should therefore be based on qualitative and quantitative criteria which ensure that the holders of recognised qualifications are in a position to understand and translate the needs of individuals, social groups and authorities as regards spatial planning, the design, organisation and realisation of structures, conservation and the exploitation of the architectural heritage, and protection of natural balances. Graduates have an ability to create architectural designs that satisfy both aesthetic and technical requirements. They have knowledge of the history and theories of architecture and the related arts, technologies and human sciences. Graduates have knowledge of the fine arts as an influence on the quality of architectural design and of urban design, planning and the skills involved in the planning process. They also understand the relationship between people and buildings, and between buildings and their environment, and of the need to relate buildings and the spaces between them to human needs and scale. Also, graduates have adequate knowledge of physical problems and technologies and of the function of buildings so as to provide them with internal conditions of comfort and protection against the climate. Moreover, they have the necessary design skills to meet building users' requirements within the constraints imposed by cost factors and building regulations and have adequate knowledge of the industries, organisations, regulations and procedures involved in translating design concepts into buildings and integrating plans into overall planning [3][4].

The study programmes and modules of Urban Design have been internationally authorised to be able to pursue the profession of an architect within the free movement of persons in the EU. After the accession of Slovakia to the EU

in 2004, the Faculty of Architecture applied the rules regulating the recognition of professional qualifications. In 2007, the directive exchanged existing instruments and after a two-year transposition period, the study programme of urban design as part of the Architecture and Urban Design programme was nostrified on 22 June 2009, in Brussels. That means that the diploma as the evidence of formal qualifications from the graduate module of Architecture and Urban Design meets one of the requirements, which authorise holders to pursue regulated profession of architect. This process was completed after the authorisation by the national professional body - the Slovak Chamber of Architects (Figure 4).



Figure 4: Development from the case study to final models (Photo: L. Vitková).

POSTGRADUATE URBAN DESIGN STUDY

The accredited study programme of urban design at the postgraduate level (PhD) is a scientific and research oriented professional and creative part of the study. The doctoral thesis projects include issues on urban theory and practice - on efficiency and functional transformation of an area, methodological issues of land use planning, topics on public spaces, ecological aspects of urban design, cultural heritage conservation. Doctoral study consists of research including both practice and theory. The research work engages students in research projects and professional activities of the urban department. They work at professional seminars, workshops, studios and they also present their research activities at conferences. Further, students are obliged to publish in internationally recognised journals.

TEACHING METHODS - TRADITION AND A NEW APPROACH

A high quality teaching process needs to reflect the changing conditions. It is in a constant process of development. The difference between a traditional and a new approach mainly involves the changes in objectives, criteria and teachers' tasks. The most important criterion of high quality teaching is the quality of its graduates [5]. The approach to teaching has always been changing. An important factor is the overall atmosphere. The following issues can be considered as essential in this respect:

...the selection of appropriate content and topic, good preparation and organisation of courses, demonstration of enthusiasm for teaching, the encouragement of class participation, the provision for fair and frequent communication [6].

The study programmes and the teaching process need to respond to changes in a flexible way, especially, in the major curricula on which they have cardinal influence. The global environment in Slovakia is reflected by urban design, as well. The changes in economic and social conditions have had a significant impact on town planning. Transformation from the centrally-planned type of economy to the market economy has also changed attitudes to land use planning. It is an instrument for regulation of land use development and urban design is in charge of its creation. This aspect can also be observed in the innovative methods of urban design education.

The Bratislava urban planning school was based on the design principle, i.e. on creating the final form of the urban environment. It has considered the city as one complex and has been related to the formation of new city districts. Creating complex urban units was its essential goal. The philosophy of the Bratislava urban planning school has had to face the need of big scale projects realised in a relatively short time, which have involved land use expansion and green field development. The school has also dealt with the issues of transformation in urban structures, however, mainly in theoretical works and conceptual philosophies.

The historical changes in the society have stopped the big scale project together with their final creation in spatial forms. At present, the priority is to implement the rules of creating a town together with its aesthetic and conceptual principles into a regulation plan as an obligatory instrument for future development. Urban design is fundamentally dependent on other disciplines, such as property rights, economic and social aspects, but also on participation processes and political decisions. The teaching methods of urban design and the subject of design studio reflect these factors.

Within the studios of urban design all these processes and factors are simulated, while representing the core in education of future architects - urban planners.

The quality of teaching in design studios as core of architectural education is the most commonly discussed issue among representatives of schools of architecture, as well as on international platforms concerning architectural education. The methods and forms of teaching architectural design make the schools of architecture and their graduates distinctive, characteristic in their own unique way. The creative approach that students gain can be applied in a wide range of other professional areas.

What importance and impact does the teaching environment have on instruction of a design studio? Which teaching methods and forms are the most effective ones? What stimulates creativity and active approach of students? What is the optimal time and frequency for working on a given assignments? These and similar questions are not only the subjects of discussions and an assessment factor at architectural schools, but also the issues discussed at academic conferences of associations of architectural schools, including the European Association of Architecture Education (EAAE) of which the FA-SUT is a member. As one point of view for evaluating teaching of design studios can serve the research done by Jim Low and Hannah Vowle. It is a collection of opinions on preferred teaching methods and forms, as well as on aspects concerning the teaching environment. It is based on a survey conducted among 450 students in different years of study from 29 European schools of architecture (a half of them were form Great Britain). The authors examined the following criteria:

- Environment (quality of teachers, technical equipment, educational environment, etc);
- Teaching methods in design studios (system of project assessment, team work, events, work on models, etc);
- Interaction among students, extent of individual approach;
- Time spent in a design studio per week [7].

The survey pointed out the preference for high quality teachers (within the environment criterion), the importance of project assessment, team work, additional events (teaching methods criterion) and gaining new insights (criterion of interaction among students). Other works on teaching creative disciplines are also inspiring for tutorial work and for the evaluation of teaching design studios. Harper and Peterson compared basic indicators for architectural, artistic and designer's creation and evaluated priorities in the given disciplines [8]. Research conducted by Zehler compares the priorities between an architectural and an urban design. Compared to architectural design, urban design has a more interdisciplinary approach, with more emphasis on location surveys, team work and it involves cooperation with external experts [9]. The method of teaching urban design through experiencing the environment by making sketches by hand is based on the principle described by Pallasmaa [10]. The way of working with models and the importance of being able to imagine the designed space could be compared to the teaching principles explained by J. Ilkovič, L. Ilkovičová and R. Špaček ...*Perception in this respect can be characterised by one of the feelings, which invigorate the imagination by their size, dimensions...*[11].

TEACHING METHODS IN URBAN DESIGN AT THE FACULTY OF ARCHITECTURE IN BRATISLAVA

The main goal of teaching design is to stimulate and develop creativity, encourage a synthetic way of thinking and a complex approach to solve problems. An important component of this process is also an excitement about creation. This forms the basis of the teaching in urban design studio at the Faculty. At the same time, tutors try to connect teaching with architectural practice, urban planning, other disciplines and research. Some successfully applied methods in teaching urban design at this Faculty should be highlighted. One of the principles in the design studios, which is compulsory for all students of Architecture and Urban Planning programme, is an identical assignment. It is differentiated according to the year of the study and orientation of the design studio. It usually starts with simpler assignments (a smaller residential complex) followed by designing public spaces, and later, more challenging complex projects of a bigger scale.

The topics are selected every year in accordance with current theoretical and practical problems in order to give students a challenging task and the opportunity to present complex and new research issues of the Urban Institute and to verify possible solutions to problems in real localities. In recent years the following themes have been elaborated within the design studios: City and Water, City and Barriers, New Public Urban Spaces, Let the Housing Estate Get Revived, Satellites in Satellites, Contexts of Housing. The assignments are always bound to selected real towns and territories, but with a limited number of areas to be dealt with. From the methodological point of view, the following can be achieved:

- Consistent preparation of assignments;
- Organising collective introductory theoretical input (lectures);
- Opportunity for organising additional educational events (e.g. workshops, excursions, exhibitions, films, etc);
- More effective realisation of the assessment process, presentations, discussions, feedback at various stages of project preparation;
- Possibility of involving professionals, citizens and local authorities;
- More intensive cooperation between students and also their interaction with teachers;

- More natural cooperation among tutoring teachers, as well as consultations with teachers and specialists from other fields;
- Participating in local and international competitions [12-15].

The positive aspect of this approach is the existence of a platform for sharing different opinions and views, discussions about problems and constructive confrontations. This leads to the awareness of possible different solutions to a given problem, to improving persuasive talking and acquiring the skill to formulate ideas and professional statements.

The other teaching methods applied that support creativity:

- Work on models during the whole design process;
- Drawing sketches not only for the purpose of analyses and concepts, but also at the final design stage;
 - Introduction of a sketch book serving as an instrument for documenting progression of problem-solving ideas;
- Preparation of an introductory summary aimed for a better understanding of the town's image and its distinctive identity in a form of a text or graphic essay, video or a photographic collage;
- Formulating the main idea *leitmotif* of the concept (a short clear title);
- Application of an individually chosen graphic technique for the design process.

The methods that encourage interdisciplinary approach and simulate real architectural practice:

- Integration of teachers and professionals from related fields;
- Realisation of site surveys;
- Finding relevant data and documents for a design solution of a given locality and its problems;
- Elaborating analyses concerning traffic, landscape and garden architecture, sociology, economics, etc;
- Discussions with inhabitants (participation of inhabitants in the design process).

The above mentioned methods were implemented into the teaching process gradually especially after 1990. At that time, the changes in the social and economic system had also a major impact on urban design as an instrument of regulation of land use planning. For the urban design studio, long-term cooperation with representatives of local authorities is a standard approach. In urban design studios, towns are a kind of laboratory. The effort of urban teachers is to offer students' works for presentation in towns where the designed sites are located, both during the work on projects and in their final versions. It also gives students valuable feedback. This approach increases motivation, commitment and also responsibility of students and last, but not least, is a reward.

CONCLUSIONS

What one considers as essential in teaching of design studio is teaching with enthusiasm. The major importance for progress represents the above mentioned feedback. It is an intensively discussed issue nowadays. The evaluation of quality deploys its customary methods elaborated for artistic majors and separately for architectural and urban design [7-9].

During the period 2012-2015, there was a survey evaluation of the preferred way of teaching design studio on the basis of the mentioned criteria at the Faculty of Architecture. (Anonymous questionnaires and opinions of students expressed via an electronic academic information system were used). The most emphasised aspect was the importance of high quality teachers and the system of project assessment. Additional educational events were considered highly important. Enthusiastic teachers who are conscious of the importance of a well-prepared and taught semester programme have achieved positive results [13]. Their effort is ...to introduce movement - changes in education through promoting innovative teaching methods in regard to the need of urban design of the 21st Century [16]. Their objective is ...not only to teach the students how to design towns, but also to provide teaching atmosphere where designing is more a joy than a duty [17]. This has an impact on the quality of design studio results.

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