

Evaluation of the technical and architectural education within the programme, *Architecture and Civil Engineering* at the Faculty of Civil Engineering in Ostrava

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ABSTRACT: The Architecture and Civil Engineering study programme was introduced in the Faculty of Civil Engineering in Ostrava, in 2006. For this purpose, the Department of Architecture was established with four lecturers from the Department of Building Construction. At the beginning, the programme was designed rather technically, i.e. it was based on the Civil Engineering study programme. Gradually, the programme was adjusted in order to meet all necessary requirements of the Czech Chamber of Architects for the recognition of architecture education. This article is a report on the efficiency of the instruction and success of the graduates with regard to the instruction of architectural and technical subjects. The first graduates with an engineer-architect degree left the school in 2011, and thus the author can report on the success of such architects in the labour market.

INTRODUCTION

The architect's expertise must have enormous breadth. It requires significant visionary abilities to grasp the spatial perception from the very first design ideas for a project. At the same time, urban knowledge, architectonic, technology, legislative and many other requirements are necessary for the implementation of the final work. Because the education for this profession must be wide-ranging, it may be seen differently from many perspectives, and opinions may vary greatly. The Department of Architecture within the Faculty of Civil Engineering at the Technical University of Ostrava was established gradually in recent years. With several years of graduates, it is possible to analyse the results of the studies.

...How to teach architecture? This topic appears often and it may sound like a cliché, but confrontation is important. It is equally important that each school learns in a different way and is therefore specific [1].

ORGANISATION OF STUDIO WORK STUDIES

As part of the first accreditation of the Architecture and Civil Engineering study programme in 2006, the study programme was oriented towards technical subjects based on the Civil Engineering study programme in the Faculty of Civil Engineering at VŠB - Technical University in Ostrava, the Czech Republic. The instruction of studio work started from the third year of the undergraduate studies and, as well as subjects in architecture, it included the history of architecture, theory and aesthetics and art. The study programme was organised, so that architecture and studio work subjects were predominantly concentrated in the graduate study programme.

As the instruction was, and is still, held at the Faculty of Civil Engineering as part of the Department of Architecture integrated in the university system, to the school administration at the time this system seemed practical, allowing students in their first years easier transition between study programmes. In this regard, it was a truly practical approach.

However, this system of a study programme could not be accepted by both the Czech Chamber of Architects and the system of recognition of education in the European Union. To be included in the list of schools with recognised education, and thus fully accepted by the Czech Chamber of Architects, which has an important role for the graduate with regard to authorisation examination, the study programme of the Department of Architecture in Ostrava had to be adjusted.

The graduates of architecture schools not on the list of recognised schools must pass the so-called difference examinations from the history of architecture, while sitting the authorisation examinations, and this may represent

considerable complications and concerns. Therefore, it is understandable that students prefer recognised schools of architecture.

Study Programme Evolution to meet Recognised School Standards

For further accreditation, from 2012, the Architecture and Civil Engineering study programme was adjusted to comply with the more detailed requirements of the Czech Chamber of Architects. The fundamental requirement was to start studio work with individual tuition as early as the first semester of studies. As a result, Architecture Design Studio I and II taking four hours per semester were introduced in the first year. In the first semester, the students analyse structures of high architectonic standard and acquire knowledge regarding structural design. In the second semester, the students are guided to make their first individual work based on concrete typological specifications. This serves as the basis for future traditional studio work taking eight hours per week, which is introduced from the third semester.

Initially, the students are tasked with simple structure designs, being primarily small family houses, followed by a family house with more challenging layouts. From the fifth semester, students design less challenging civil structures in urban planning contexts. As part of the studio work, the fourth year and Bachelor's thesis then deal with projects aimed at additional project documentation stages, i.e. the project for building permits and partially project for construction work execution. The studio work for the undergraduate degree is then complete.

Some Effects of the revised Study Programme

The newly accredited graduate study programme was based on the original programme. However, the concentrated studio work in the form of three studio work sessions was too demanding. Thus, the scope of the studio work was limited to a maximum of two studio work sessions per semester. At the same time, some lecturers-related practical work, e.g. *Protection and Renovation of Historical Objects*, had to be adjusted to keep the content within a reasonable scope. Often the preoccupation of both teaching staff and students with the demands of the studio work made it difficult for students to complete the semester.

Generally, it can be said that students are gradually led to creative work, both individually or in a group with colleagues, which is important for their future professional work. To some degree, the work of an architect is a management and co-ordination function and involves working with a group of colleagues. It is necessary that the students learn visionary and creative work that eventually must be steered towards the set objectives. It is desirable that future architects are familiar with both formal and informal work as expected in the artistic professions.

...Probably the most spelled word, the word is informal. We are accustomed to the fact that, in common speech or architectural creation, this term refers in particular to phenomena which are not subject to rules and rules, violate customs [2].

CENTRAL SUBJECTS IN ARCHITECTURE PROGRAMMES

For architecture programmes at technical schools, the total share of hours of studio work is 25-30%, including the final work. The share of architecture subjects represents (without the inclusion of studio work) approximately 20% of the total hours of the study programme; the share of technical subjects is 35%; 15-20% of total hours is for general subjects, science and humanities that establish the basis to master other subjects of an architectonic and building-technical nature.

Due to the inclusion of studio work from the first semester, architectonic core subjects had to be introduced from the first semester, so that the students could base their knowledge on, and draw from, them. The subjects describing rules of composition are relatively elementary. They are followed by a subject explaining the theory of the typology of structures, as a necessary basis for the studio work. This subject includes practical work.

History of Architecture and Technical Trends

The understanding of architectonic work starts with the history of architecture and civil engineering. The instruction of this scientific field must be based on a gradual and systematic study of its history and its broad interdisciplinary nature. This enables young people to orient themselves in an historical context to understand on what basis architecture develops. First of all, they must understand that any development must reflect the social demand based on the current development of society. In this regard, the social context and political issues leading to the requirements for a building must be understood.

In addition, the students must understand that the development of architecture is based on the latest inventions and technical and technology trends. Without the requirements of demanding contracting authorities for new types of building and higher structures, there would be no advancement of architecture; only the desire to be better will drive the society forward. It is the development of building structures that serves as stimuli to architects to continue to develop their discipline. The past two centuries with a revolutionary development of building materials, structures, technologies and, last but not least, social progress, have brought an unprecedented advancement in architecture and urban planning.

To understand the context above, the students also must be aware of technical areas of civil engineering. How could the history be understood without the knowledge of building materials, construction technologies and structures? Without such knowledge the studio work cannot be effective.

Art and Technical Dichotomy in Architecture

Teaching architecture at a faculty of civil engineering has its advantages. It can draw on many professionals across various fields of expertise for instruction in diverse professional-technical subjects. They may also perform as consultants for specific tasks as part of studio and final work.

The instruction in art and technical subjects is a necessary part of the study programme, as architecture stands somewhere between the technical and scientific field and art. It is an aim of an architecture school to create an interdisciplinary environment guiding students onto the path of professionals able to create a balance between the technical and art. Thus art, technically implemented, can bring society closer to a better tomorrow.

In the modern era, design work requires the use of computers and graphic programs. Many students thus feel that the instruction in drawing, modelling and other artistic fields, is not well-founded. However, it is quite the opposite, as may be evidenced from the experience of schools of architecture from the Czech Republic and abroad. It is necessary that students are led by imagination and spatial perception before they start entering their projects into computers.

To this end, the subjects above are more than instructional and, therefore, it is of utmost importance that they learn primarily technical drawing. Without this, the architect may not respond appropriately, while working with the client and colleagues.

ADDITIONAL FORMS OF INSTRUCTION

As mentioned above, future architects must be able to communicate at adequate professional and non-professional level.

...Proper communication creates, in a democratic way, a shared, objective opinion, which respects individual points of view as a lasting value of the creativity process [3].

Intended for this purpose are additional forms of instruction, such as forming students into groups for some tasks. In addition, it may be appropriate to address the task at hand in a broader context requiring co-operation of other specialists, which is again part of communication.

Organising international student events and activities is highly practical. Their future success requires students to have a good command of languages and to be open to communication with other nationals. Neither the Czech nor the Slovak language has become, and may not become, a communication tool for international co-operation.

...International studies have gained a certain kind of equality dimension in our country. In principle our students study abroad in English, German, French and foreign students are educated in our country in the same languages. That's one of the things that we have to somehow swallow, the Slovak language will never be lingua franca, but architectural communication doesn't depend only on its verbal form [4].

In the past 15 years, the Faculty of Civil Engineering in Ostrava has made significant progress in developing international contacts as part of the Erasmus programme. The mobility of students and teaching staff has evolved dramatically. Students from over the world have come to Ostrava to study and students from Ostrava acquire experience in destinations that were visited in the past for holiday purposes only. This dramatic development foretells another necessary step in international relations across all levels of education.

...An integral part of the cultural environment is a public space, which enables communication between people and greatly affects their behaviour and conditions for social, cultural and economic activity. The first study approach analyses international cooperation with foreign universities in Brno, Ostrava, Gliwice, Lisbon and Vienna, in the field of education (workshops, exhibitions) and research (conferences, publications); thus, creating an important basis for gaining new pedagogical knowledge. Supporting student mobility, organising exchange exhibitions of students' projects and contemporary architectural excursions, all have a significant impact on the motivation and open - mindedness of students [3].

For many years, the lecturers in the Ostrava Department of Architecture have worked at establishing and strengthening contacts and relationships not only in the Czech Republic, but also in the European Union and other countries in the world. For fresh schools generally, it is a complicated and demanding task. The communication cannot be based only on contracts by school managements, but must be based on the co-operation of individual departments and individuals. It goes without saying, that universities and ministries must create the social and economic background for such co-operation.

...The universities' reputation is particularly reflected in international communication at two levels: academic exchange and research. The educational process may be highly enriched by the integration of foreign groups of students and teachers with domestic groups. Working on common projects allows for both groups to compare their countries' differences and generates a more objective point of view on solved problems. Cooperation between local and foreign teachers then supports the creation of new exchange mobility and workshops [3].

CONCLUSIONS

Regarding the structure and development of the Architecture and Civil Engineering undergraduate and graduate study programme taught at the Faculty of Civil Engineering in Ostrava in the Czech Republic, the following should be noted:

1. The requirements of the European Union and the Czech Chamber of Architects concerning a well-balanced organisation of the instruction of studio work and architecture subjects from the first semester seemed clearly justified. It was shown that the concentration of the instruction into the following two-thirds of the studies was too concentrated, and thus less effective. The students did not have an option of a balanced, gradual acquisition of knowledge and experience. The concentration of architecture studies over a short period of time meant that students were overwhelmed and were not able to complete the studies to the required standard and in the required time frame. Therefore, progress should be step-by-step to give the students an opportunity to absorb the acquired knowledge and skills before proceeding with independent creative work.
2. A great satisfaction for students is that they may present their work at conferences, exhibitions and other public events. It is also important that they would have an opportunity to acquire knowledge from other lecturers, which is one of the reasons why the Department of Architecture has over the past nine years organised an international conference on Architecture in Perspective (see Figure 1).



Figure 1: Attendees at an Architecture in Perspective Conference.

3. Co-operation by practice is an indispensable part of the instruction process. The Ostrava region and its representatives have grown accustomed to asking the Department of Architecture in Ostrava for co-operation regarding issues that are suitable for public discussion (see Figure 2). This is a secondary role for a university to help to develop its region.



Figure 2: Exhibition of theses in the City Hall Building.

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