Global urban planning as a part of architectural education in the Faculty of Architecture at Slovak University of Technology in Bratislava

Katarína Smatanová & Ľubica Vitková

Slovak University of Technology in Bratislava
Bratislava, Slovakia

ABSTRACT: At present, more than half of the population worldwide lives in urban areas, and this number is still rising Thus, urban planning, architecture and the construction industry naturally have become one of the most important development challenges of the 21st Century. With the flow of capital, the work of these professions also is becoming more globalised, requiring that future professionals are well prepared for these demanding conditions; and who are able to work in any conditions around the world. In this article, the authors have endeavoured to scrutinise the different ways that the topics connected to global urban planning have been introduced within the education processes in the Institute of Land Use and Urban Design at the Faculty of Architecture of Slovak University of Technology in Bratislava (FA-STU), as well as to evaluate their final outcomes. The lessons learned are discussed in this article, as are recommendations for the future, part of which already have been implemented into standard curricula at FA-STU.

INTRODUCTION

Global Urban Planning

According to the latest statistics, almost 54 percent of the population lives in urban areas. Many of those live in conditions that are not suitable for the 21st Century. At the same time, there is a surprisingly small percentage of the built environment, which is actually conceived and realised by architects and planners [1]. Many leading international organisations, such as the United Nations and its Human Settlements Programme, pinpoint the leading role of the urban planning profession in solving these issues. Urban planning, architecture and the construction industry naturally have become one of the most important challenges in development, requiring innovation and a search for design tools to ensure the pace is maintained.

This global experience clearly shows that the profession needs to respond to new factors, such as resiliency of urban structures; social, ecological and economical sustainability of settlements; informal settlements and slums; affordable housing or participatory planning; but also, as agreed by the International Union of Architects (known as UIA), a new approach to designing. The changes are thus arising also for the educational institutions. According to the UIA, the basic goal of education is to develop the architect as a *generalist*, building on the architect's capacity to solve problems. Especially in the context of development, the architects have to serve as *enablers*, rather than as standard *providers* of one particular design [2]. Just not to forget to mention: these shifts in perspective first must be embraced by the professionals, to ensure that the education of future architects reflects this changing mood.

Furthermore, the topic of global urban planning was one of the highlights of the programme at the annual conference of the European Association of Architectural Education (EAAE) in Bordeaux in 2017. The orientation of teaching and research topics on developing countries is toward the current trend of international co-operation between schools of architecture. The conference participants presented their experiences, as well as the applied methods and forms of learning within this collaboration. A large number of the architectural schools in Europe regulate their curricula in this context. Their aim also is to provide students with adequate knowledge about the social and environmental context outside of European countries. The discussions focused on the need to manage and address the specific needs and ways of construction in developing countries, as well as on the methods of participation with local communities.

As for Slovakia, the university education in this field for a long time has been underdeveloped. The topics of teaching, such as history, visual art disciplines, construction engineering, typology and architectural design, have been enriched recently through computer-aided architectural design (CAAD), sustainability or universal design [3]. However, sound knowledge in global urban planning, covering not just the aforementioned knowledge, but also the sensitivity to different environments, the cultural patterns of people or architectural languages, up to now have been missing.

EXPERIENCES OF THE INSTITUTE OF LAND USE AND URBAN DESIGN, FA-STU BRATISLAVA

As Prof. Kováč notes

> *…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* [4].

It is obvious that the Faculty of Architecture has over the past decades undergone several robust innovations in the education process.

In the topic of *global urban planning*, the first steps can be traced from the active participation of FA-STU students in international design competitions. Participation of students in these competitions also served as an assignment for studio design courses, which proved to be highly popular among teachers, as well as students. They offered the opportunity to extend the standard known conditions of Central Europe into design solutions that require a more sensitive approach, allowing people to resiliently inhabit the spaces of use, or combine urban design with solutions to support sustainable agriculture and others (Figure 1).

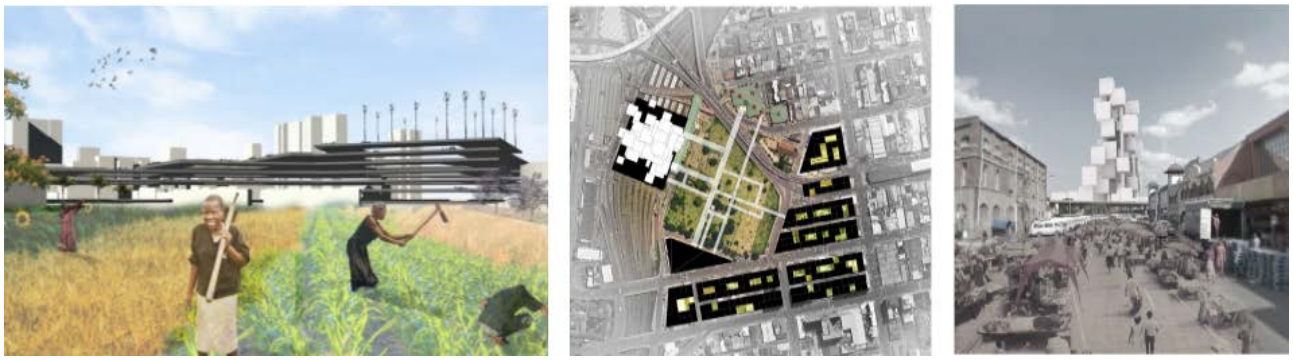

Figure 1: Examples of the studio design course assignment: UIA students' competition on Durban, South Africa, 2013. The students' proposals extended standard designs, where they proposed solutions that combined urban design with employment opportunities, food sustainability and ecological stability programmes.

Building on the foregoing, there naturally arises the necessity to establish a foundation that reflects the changes in the profession in terms of the education of an architect. The first part of this article thus deals with the authors' systematic experiences of two focused workshops and active participation of the FA-STU in an international conference. Below are the lessons learned and their effects on education at the Institute of Land Use and Urban Design, shaping the next steps of the teaching process for consecutive semesters.

Workshop 1 - Banská Štiavnica

As mentioned in an earlier publication, a highly popular and successful format of architectural education in the Faculty of Architecture is a workshop [5]. Workshops were chosen for experimenting with the themes of global urban planning. The first from the series took place in Banská Štiavnica in April 2016 and was attended by 20 of the FA-STU students from various years of study, from both Bachelor and Master study programmes, and five members of pedagogical staff.

The main task was to role-model various stakeholders in the development of projects in three different environments struggling with different problems:

- Kenya (slum Kibera in the capital, Nairobi): development of technical infrastructure and public spaces networks, basic hygienic and safe living conditions;
- Lunik 9 (slum in Košice, Slovakia): social and physical integration of marginalised ethnic groups;
- Plaza Lavapies, a square and adjacent public space in Madrid, Spain: crime, drug dealing and danger.

Throughout the workshops, students formed teams to work on the development of comprehensive proposals for these sites, which they delivered on their final day (see Figure 2). First, the students were asked to role-model different stakeholders that are in charge of solving problems of the individual sites, such as a mayor of the city; a local representative; a policeman; the inhabitants, visitors and neighbours; NGO (non-governmental organisation) workers, and others, in order to better understand the different factors that shape the design process for any architect/urban designer. Furthermore, students also learned that the final image of the city is influenced not by the single plan of an architect, but by different political, economic or social forces.

During the five-day workshop, students received lectures covering specific topics of sociology in urban design, economic aspects of urban design, collaborative planning with various stakeholders, safety and the crime prevention through environmental design (CPTED) approach, and others, that will help to build the knowledge necessary to deal with urban issues arising from different sites, in areas around the world.

Figure 2: Students working during Workshop 1 - in Slovakia, role-modelling the situation of construction and development preferences according to different stakeholders.

Student Design Competition for Kenya's Towns - an International Student Competition

From February to April 2016, the Faculty of Architecture STU with many other universities worldwide participated in an international students' competition organised by UN-Habitat and Kenya's Ministry of Transport, Infrastructure, Housing and Urban Development. It was called the Student Design Competition for Kenya's Towns. The task for the Faculty of Architecture was to ensure the diversity of the teams, since one of the requirements of joining the competition was to form international and multi-university student teams of 4-6 people, including at least one team member from Kenya and two other countries.

The groups had the opportunity to choose from nine cities/towns in Kenya: Mombasa, Malindi, Kitui, Machakos, Kiambu, Nyeri, Embu, Nakuru and Naivasha to work on. Each of these towns offered different themes to be solved by the competing students: mobility, environmental sustainability, infrastructure or lack of standard housing [6].

Since the teams with members from FA-STU already during Workshop 1 had the theoretical knowledge, especially in the topics addressing the problems of slums, they decided to compete in category *Nyeri* - rehabilitation of a slum. In order to help students, the pedagogical staff from the Institute of Land Use and Urban Planning provided several extra classes focused on the topics of these projects in order to help the students to catch up on missing knowledge, especially from the field of sociology and the economical part of designing sustainable cities. However, these extra lectures and tutoring was done *ad hoc*.

Altogether, there were five student teams with members from the authors' Faculty, out of a total of more than 700 registered participants. Students performed most of the work on the competition projects using on-line tools, such as Skype and Facebook. However, especially due to the differences in time zones, hesitations and the language barrier, these collaborations proved highly frustrating for most of the team members.

Eventually, the winner selected for the topic of the city of Nyeri and shortlisted for the whole competition was a team led by STU students, which proved that the theoretical knowledge gained during the workshop preparation and extra consultation throughout the semester were successful and reached their target (Figure 3).

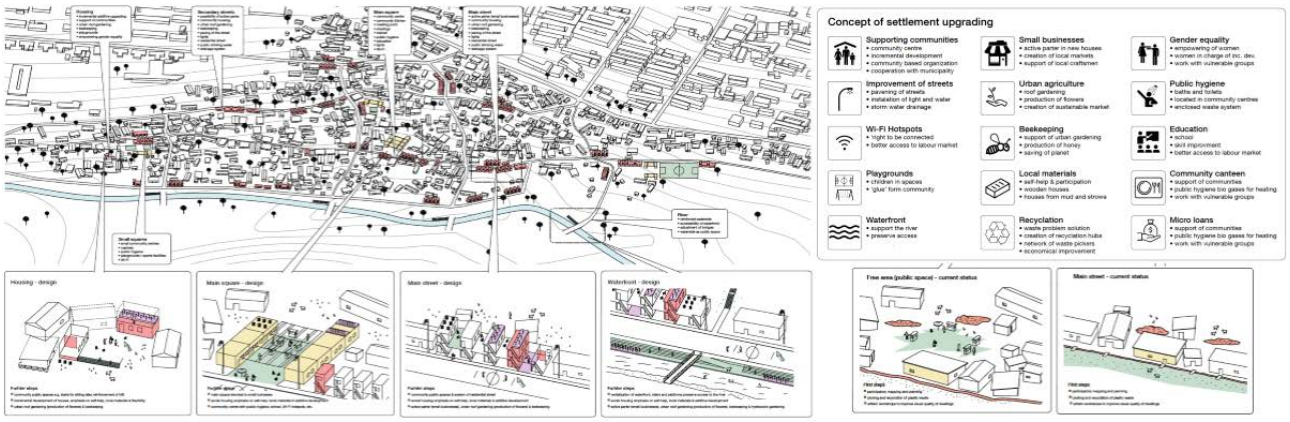

Figure 3: The project that won the UN-Habitat competition. It was elaborated further during Workshop 2.

Workshop 2 - Kenya

An intensive four-day workshop took place in January 2017, and was attended by an FA-STU student on the winning team; there were three members of staff and 14 local students from Jomo Kenyatta University of Agriculture and Technology (JKUAT). The students were both undergraduate and graduate level. Some of them also had experience as working architects and designers in practice.

The assignment for the workshop was the elaboration of the details of the project that won the UN-Habitat competition, so as to move this project a step further to its actual realisation in practice. Of help in this process were the on-site excursion and short surveys with local stakeholders: the NGO, as well as the inhabitants.

The workshop itself included lectures on theory and teamwork focused on on-site visit preparation (Day 1) to carry out surveys; an on-site visit (Day 2) (see Figure 4); and then, finishing off the work at the attractive premises of the United Nations Headquarters (Day 3 and 4). This programme aimed mainly to provide attractive and diverse experiences that would motivate and inspire students to work effectively under time pressure. Another aim was to provide opportunities for the team members from different (cultural, national) backgrounds to have time to spend together to get to know each other informally, and thus enhance co-operation on the project.

With the work proceeding, several things came up as important issues to be solved. First of all, the on-site visit and surveys among local stakeholders showed that the winning proposal eventually was not suitable for the site, and did not really meet the conditions of the actual site and requirements of its inhabitants. The winning project proposed a new re-development of the area based on the flat topography, but on-site it was found that topography in the area was very steep, in some situations causing landslides. Therefore, the team concluded that the further work on the winning project was not effective, and therefore, the students were asked to together propose new ideas.

Through a brain-storming, intuitive design idea process, the students came up with ideas in three realms - social, economic and physical - that altogether formed one comprehensive plan for future development and rehabilitation of Nyeri sites. For the rest of the workshop, students thus worked on new site-specific ideas, trying to develop them individually and as one complex strategy. At the end of the workshop, the results were presented to the representatives of UN-Habitat, who appreciated the quick response and the students' new design ideas to help the area more.

Further, several communication problems arose between the students and these slowed down their co-operation. However, it turned out that these communication issues were linked to the architects' and designers' common language - the drawings and graphic illustrations.

Figure 4: Members of the team during the on-site visit to Nyeri, Kenya and the brainstorming of new ideas for the Nyeri site.

LESSONS LEARNED

In order to understand the lessons learned from the authors' experience, it was looked at in detail from three perspectives: that of the students' perspective, the teachers' experience, and of what can be improved in the teaching/learning process.

As for the students, the main problems experienced arose from managing the work and the co-operation when collaborating in international teams. Future preparation must include that of helping students plan to overcome the language barrier, and the hesitation, as well as cultural differences, and any other pressures or issues to do with the work. Students apparently lack education in managing teams, as well as project elaboration processes.

Another issue is that of keeping up with the *theory*. Themes covering *global urban planning* are usually not integrated in standard curricula, since many of these (e.g. social disparities, slums) may not be visible in the context of Slovakia.

Therefore, these gaps in knowledge must be addressed, for example through particular courses or extracurricular activities. For the learning process and the selection of tasks in studio design, the on-site visit with the aim of understanding the environment is necessary in order for the students to propose a good and suitable design for the context. Even though the winning project in the student competition was quite generic, at the end of the day, it was not suitable for the site and also not supported by local inhabitants.

As noted by Khan, the architects, when working in developing countries, very likely promote the designs showing off the newest trends to manifest the development, however, this is not often what the local conditions really need [7].

This finding has its consequences for future teaching; that is, to focus the education process onto training students to better incorporate local, on-site conditions and specificities, as well as the requirements of the local people. As stated by Hacer Mutlu Danaci [8]: one of the most important problems in architectural education is that students do not have the ability to transfer theoretical knowledge into practice. Furthermore, a necessary part of any lecture on theory is the *lived experience*, especially on the scale of urban design.

Of great importance too is the building up of staff capacity. The guest-lectures and intra-disciplinary collaborations are necessary in order to cover such a great range of themes. Part of solving the problems of how to stay up-dated - especially when these topics are not part of the everyday experience of the teacher - is to focus part of the research activities in this direction.

The key to a successful relationship and working with partners, is the continuity and long duration of the common activities. In this manner, intensive preparation for the programme and elimination of the negative circumstances is required. Furthermore, long-term co-operation allows researchers and teachers to develop common projects that can be of benefit to both sides.

STEPS FOLLOWED

Based on the previously discussed experiences and the lessons learned, the steps that followed led to the incorporation of topics on global urban planning into the standard curricula and teaching in the Institute of Land Use and Urban Planning at the Faculty of Architecture in Bratislava, as shown in Figure 5.

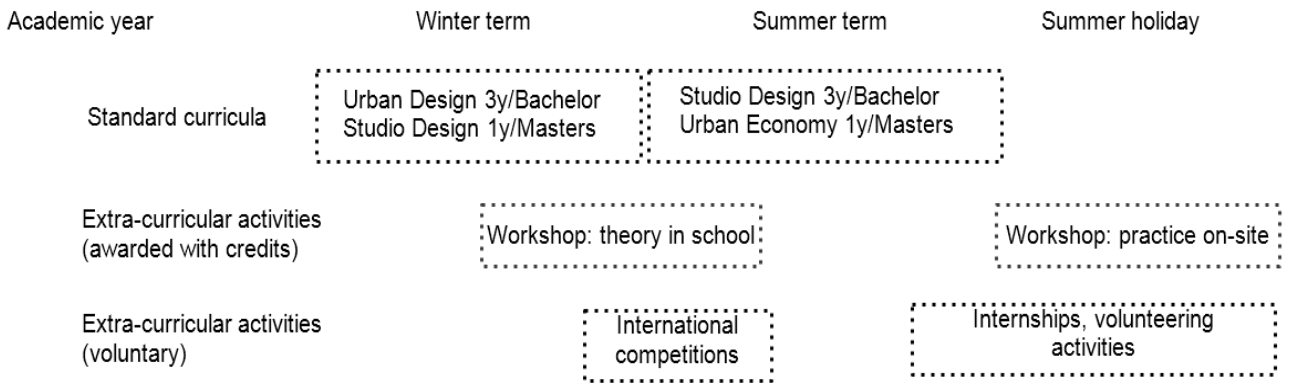

Figure 5: A scheme depicting the system to incorporate *global urban design* and *planning* themes into the standard education process in the Institute of Land Use and Urban Planning at the Faculty of Architecture, Bratislava.

First of all, the experience taught that new topics must be included in both the Bachelor and Masters level of studies, since not all of the students undergo both levels at the authors' Faculty, and undergraduate and graduate students have different perceptions on the topic due to their various levels of knowledge.

The gaining of this knowledge will be through incorporating these topics into the standard, mandatory curriculum. This can be done in both seminars and lectures (focused on theory), as well as confirming the gained knowledge via *practice* in semester design studio courses (Figure 6).

Then, the students who are interested are allowed to deepen their knowledge. As was the authors' positive experience: the suitable format seems to be a two-part workshop and summer school on urban design. The first of the workshops takes place during the semester, and is focused on the background theory and knowledge gained, that is further reflected in design on a specific site (i.e. on-site) in Workshop 2 during the holiday season. This type of pattern has the potential to avoid students having a disrupted academic year and, at the same time, to use up effectively the summer holiday period.

Finally, educational institutions may be willing to support extracurricular activities, such as the supporting of students in attending an international students' competition or facilitating internships in international design studios.

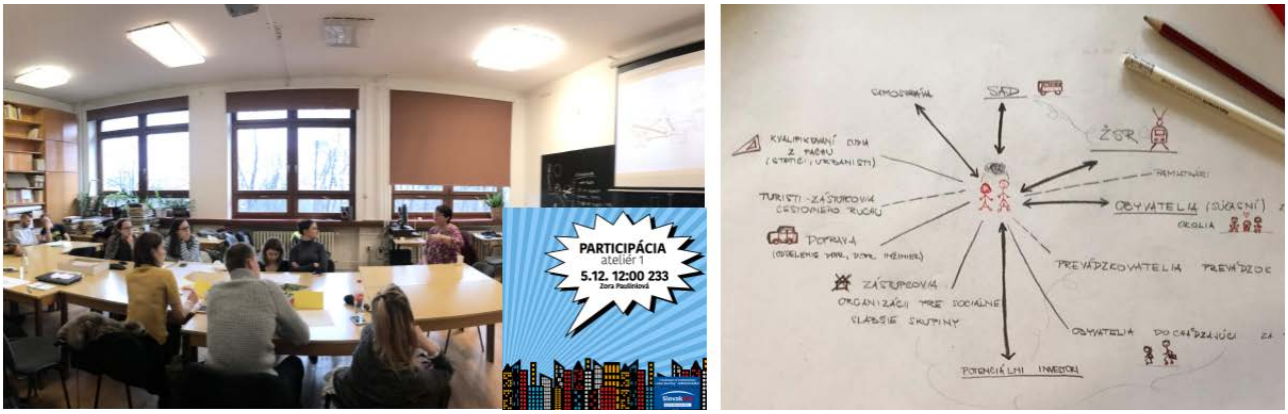

Figure 6: Incorporation of global urban design lectures into the studio design - guest lectures are connected to the small workshop and activities that are related to individual studio design projects, in order to ensure that the students better grasp the knowledge. An example of a lecture focused on incorporating various stakeholders into the design process at its different stages, which students tested on their individual studio design projects.

CONCLUSIONS

It was found during this study that the themes around urban planning within a global context are for any architect these days a *must*. The themes are necessary not only for future architects willing to work in different parts of the world, but also topics of global urban planning push students to research, think and generate ideas on different subjects, and thus develop their creativity and professionalism.

A lot can be learned in *theoretical* ways. Themes covering global urban planning are usually not integrated in standard curricula, since many of these (e.g. social, ecological and economical sustainability of settlement, informal settlements and slums, affordable housing or participatory planning) may not be visible in the context of Slovakia. Therefore, these gaps in knowledge must be addressed; for example, through particular courses and/or extracurricular activities.

Further, for the students who have very limited experiences, it is still almost impossible to design adequate and robust designs with a potential of their feasibility based on just *theoretical knowledge*. Especially, when designing in different environments, the on-site visits are a must for proposing a design with the potential to have positive impacts on the lives of everyday people, especially on the scale of urban design and town-planning.

ACKNOWLEDGMENTS

This work was supported by the Slovak Agency for International Development Co-operation (Grant Number SAMRS 2016/RV/1/1).

REFERENCES

1. UN-Habitat, Urbanization and Development: Emerging Futures. World Cities Report. In: World Cities Report. 2016: United Nations Human Settlements Programme (2016.)
2. UIA, Charter for Architectural Education. (2004/05): UIA General Assembly, Tokyo (2011).
3. Špacek, R., Vitková, L. and Šíp, L., Architectural education at Slovak University of Technology in Bratislava. *Global J. of Engng. Educ.*, 18, **1**, 6-15 (2016).
4. Kováč, B. and Vitková, L., Urban design teaching in Slovakia. *World Trans. on Engng. and Technol. Educ.*, 13, **3**, 217-224 (2015).
5. Smatanová, K. and Dubovcová, A., Workshop as a tool in architectural education. *World Trans. on Engng. and Technol. Educ.*, 14, **1**, 123-128 (2016).
6. UN-Habitat, International Design Collaboration for Kenya. 30 (2016).
7. Khan, H.-U., Architectural education: learning from developing countries. *J. of Architectural Educ.*, 40, **2**, 31-32 (1987).
8. Danaci, H.M., Creativity and knowledge in architectural education. *Procedia - Social and Behavioral Sciences*, 174, 1309-1312 (2015).