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Landscape architecture for architects - teaching landscape architecture in the architecture and urbanism study programmes

Katarína Kristiánová, Eva Putrová & Katarína Gécová

Slovak University of Technology in Bratislava
Bratislava, Slovakia

ABSTRACT: Since landscape architecture has been separated from the fields of architecture and horticulture, and since education in landscape architecture is usually provided through independent study programmes, the question is: How much landscape architecture knowledge is needed for the education of architects and urban planners? In this article, the authors examine the options for teaching landscape architecture in the Bachelor and Master degree programmes of architecture and urbanism provided by the Faculty of Architecture at the Slovak University of Technology in Bratislava. In the context of time and credit allocation for the Landscape Architecture course in the curriculum of the Bachelor study programme, its content, expected outcomes, methods and forms of teaching are discussed. The authors suggest innovative ways to include important topics and ideas about landscape architecture into the existing curricula of study programmes for architects and urban planners, in order to develop their competence in comprehension of complex relations between buildings and their sites, landscapes and the environment.

Keywords: Landscape architecture education, teaching landscape architecture

INTRODUCTION

Landscape architects are specialised in designing and planning outdoor spaces and landscapes. However, outdoor spaces and landscapes are also created and formed by architects and urban planners. Architects and urban planners are licensed to design and plan exterior spaces - urban public spaces, whole neighbourhoods, cities or development at regional scale. Working with complex environmental issues and leading interdisciplinary teams, architects and urban planners, as experts on built environment, need to broaden their knowledge related to natural environment. This is especially applicable to the current era, when the harmful effects of human activity on the biophysical environment can result in climate change, pollution, environmental degradation and resource depletion.

However, in comparison with landscape architecture study programmes, the curricula of architecture and urbanism study programmes usually offer significantly less space for courses oriented towards natural environment theory and for landscape architecture courses. This limits the competence of architects and urban planners in comprehending complex relationships between buildings and their sites, landscapes and environment.

As Fetzer has pointed out, the multifaceted nature of landscapes and mankind’s interaction with them makes landscape architecture into a subject area of great scope [1]. Landscape architecture as a field of professional activity and an academic discipline is concerned with the shaping of landscapes of various scales [2].

Landscape architecture courses are important for the education of architects and urban planners, as landscape architecture is aimed at developing holistic knowledge and understanding of landscapes in time and space [2], and at helping architects and urban planners to understand the pressures and driving forces to which landscapes are subjected.

The authors have examined the options of teaching landscape architecture in the Bachelor and Master study programmes of architecture and urbanism provided by the Faculty of Architecture at Slovak University of Technology in Bratislava.

In the context of available time and credit allocation for landscape architecture courses in the curricula of the first cycle (Bachelor) and second cycle (Master) programmes, the authors have examined and evaluated their content, expected outcomes, methods and forms of teaching, with the aim of finding innovative ways to include important topics and ideas of landscape architecture into the education of architects and urban planners, within the limits set by curricula.

LANDSCAPE ARCHITECTURE IN THE BACHELOR STUDY PROGRAMME ARCHITECTURE AND URBANISM

In the curriculum of the four-year Bachelor study programme in architecture and urbanism, two compulsory courses - Architecture and Environment I (in the second year of study) and Landscape and Park Architecture (in the third year of study) and one elective course - Landscape Architecture Module (in the fourth year of study) focus on delivering knowledge related to natural environment and landscape architecture.

Compulsory Course: Architecture and Environment I

Architecture and Environment I is an introduction to the issues of understanding architecture and urbanism as a man-made environment and the relationship between people, architecture and environment. It consists of lectures (two hours weekly) and a seminar (one hour weekly), with three ECTS (European credit transfer and accumulation system) credits allocated. The first set of lectures is devoted to the fundamental topics, such as architecture, ecology, environment, man and his perception of the environment, and the environmental impacts on architectural forms. The next set of lectures is devoted to the role of energy in architecture, the use of alternative energies, alternative building materials and technologies, and the perspectives of *ecological* architecture. The final set of lectures focuses on the broader context of urban design of *ecological* settlements. The seminar consists of three assignments, the first entitled *Neighbours* focuses on evaluation of the relationship between individual buildings, the second theme is *Architecture of extremes* and the third assignment is *Architecture and alternative sources of energy*.

Compulsory Course: Landscape and Park Architecture

Landscape and Park Architecture is aimed at acquiring theoretical and methodological basis of landscape architectural design of urban and rural landscapes as a starting point for creative landscape architectural design work. The course consists of lectures (two hours weekly) and a seminar (one hour weekly), with three ECTS credits allocated. The 12 lectures of the course introduce landscape architecture as a profession, the basic principles of planning and design of rural and urban landscapes, in various dimensions of garden and landscape design. The character of human influence on landscapes, the geo-system and ecosystem approach in studying landscapes, landscape typology of natural and cultural landscapes are explained, overview of the historical periods of garden and landscape design is given, and aspects of landscape preservation and protection are discussed. Specific attention is paid to the issues of urban green infrastructure planning and urban green space design. Design of parks as a specific category of urban greenery, design of functional areas of urban greenery - inner courtyards, schoolyards, children's playgrounds, specific areas and linear elements of urban green infrastructure - greenways, streets, waterfronts and isolated vegetation elements of urban green infrastructure are discussed, and the instruments of creative work of landscape architect are explained.

The seminar work consists of four assignments. In the first graphical essay, students are expected to express their views and opinions about the relationship between built and natural environment. In the second assignment, *Architecture and greenery* students solve the relationship between architecture and vegetation elements through the simple design of a garden or exterior space, using their works designed in architectural studios in the previous years of study - usually family houses. They become familiar with the basic spatial requirements of vegetation elements, especially, trees (height, volume), with their use in composing space and their role in architectural design. An example is shown in Figure 1.

Figure 1: Seminar assignment *Architecture and greenery* (student Miroslava Argalášová, tutor Eva Putrová).

In the third assignment, *Park*, through the functional and compositional analysis of the selected examples of contemporary or historical parks, students learn that in the design of outdoor spaces, general principles of architectural design and at the same time specific principles of landscape architectural design are applied. Examples of functional and compositional analysis of a park are given in Figure 2 and Figure 3.

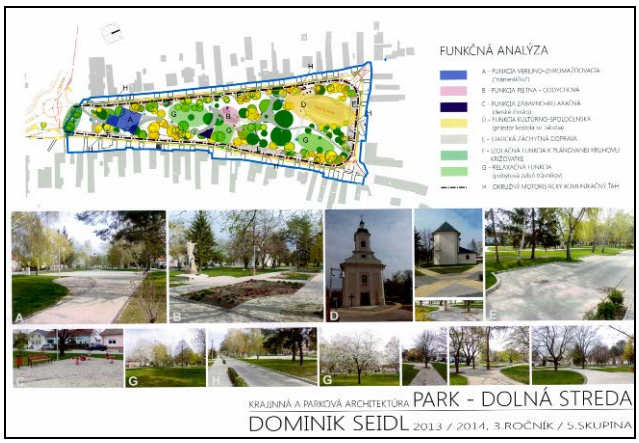

Figure 2: Seminar assignment *Park* - functional analysis of the park in Dolná Streda (student Dominik Seidl, tutor Eva Putrová).

Figure 3: Seminar assignment *Park* - composition analysis of the park in Dolná Streda (student Dominik Seidl, tutor Eva Putrová).

In this assignment, a case study method is used. This method is considered to be an excellent way to get students involved in landscape architecture, as noticed by Francis [3]. According to Francis, landscape architecture is predominantly taught by example, and case studies are a useful way for students to gain insight into past projects in order to design new ones successfully [3].

In the fourth assignment, students develop their own design of an outdoor space, usually public urban green space of a housing estate. They visit and analyse the site, identify its problems and, then, they create their own proposals. Students elaborate ground plans, sections, perspective views and selected details (examples are shown in Figure 4). In this assignment, core creative competencies of landscape design are trained. This assignment simulates small design studio project.

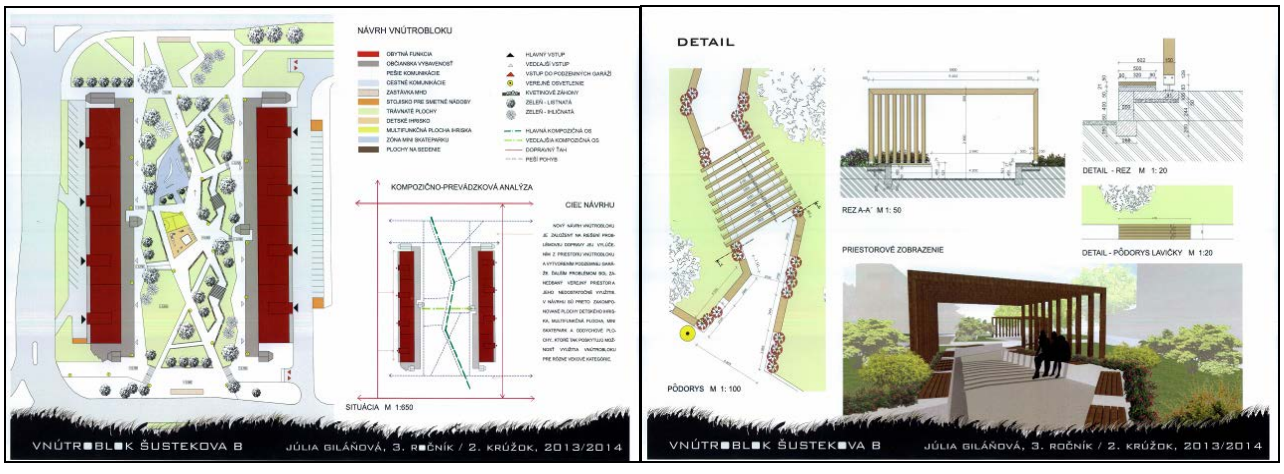

Figure 4: Seminar assignment *Design of outdoor space* - public urban green space in housing estate Petržalka, ground plan and selected detail (student Júlia Giláňová, tutor Eva Putrová).

LANDSCAPE ARCHITECTURE IN THE MASTER STUDY PROGRAMMES OF ARCHITECTURE AND URBANISM

Two compulsory courses in the curricula of Master study programmes focus on delivering knowledge related to the environment: Architecture and Environment II (in the Master programme in architecture) and public spaces (in the Master programme urbanism). There are also three elective courses, which are offered to students in both Master study programmes: Environmental Entity of Architecture, Settlement Ecology and Sustainable Development, and Ecological Concept of Architectural Design.

Compulsory Courses: Architecture and Environment I, Public Spaces

The Architecture and Environment II course (as a continuation of the Architecture and Environment I course from the Bachelor level) focuses mainly on specific aspects of energy efficiency of buildings. It consists of lectures (two hours weekly) and seminar (one hour weekly), with three ECTS credits allocated. In the seminar, students assess their own design of building in terms of light, noise and energy consumption. In the Public Spaces course, with three ECTS credits, students acquire the knowledge in issues of creation, conceptual aspects of design, engineering and planning of urban public spaces. Lectures (two hours weekly) focus on conceptual, typological and implementation issues of exterior public space design. Attention is paid to surfaces, street furniture, greenery, art works, and to special issues of security, accessibility and socio-psychological aspects of public spaces. In the seminar (one hour weekly), students analyse a selected specific issue related to public space design or a selected public space case study.

Elective Courses: Environmental Entity of Architecture, Settlement Ecology and Sustainable Development, Ecological Concept of Architectural Design

The elective courses consist of lectures (one hour weekly) and a seminar (one hour weekly), with allocation of three ECTS credits. The course Environmental Entity of Architecture presents architecture and architectural design as an environmental phenomenon and focuses on the behaviour of civilisation and culture in global context, conflicts between human-made environment, culture and nature. In the Settlement Ecology and Sustainable Development course, students become acquainted with the principles of sustainable development of settlements and their indicators. In the Ecological Concept of Architectural Design course, the main attention is paid to the use of alternative and renewable energies in design, and the use of sun as architecture forming element. Students verify their solutions using a heliodon and construct a solar envelope.

EVALUATION OF TEACHING LANDSCAPE ARCHITECTURE IN THE ARCHITECTURE AND URBANISM STUDY PROGRAMMES

The examination of the courses related to landscape architecture and of the courses focusing on the relationship between architecture and environment in the curricula of Architecture and Urbanism study programmes in the Faculty of Architecture at Slovak University of Technology in Bratislava has shown that the courses' predominant focus is either on philosophical, sociological or psychological aspects of the relationships between architecture and environment (Architecture and Environment I, Environmental Entity of Architecture, Settlement Ecology and Sustainable Development) or on the use of alternative energy sources, alternative building materials and technologies, energy efficiency of buildings in terms of light, noise and energy consumption (Architecture and Environment II, Ecological Concept of Architectural Design). Students are predominantly given the knowledge on built environment, building materials or technologies, knowledge on man-related, socio-cultural and psychological aspects of built environment design. For example, in the course oriented towards the design of outdoor, exterior spaces (public spaces), prevailing attention is paid to the elements of built up structures; for example, street furniture, accessibility and socio-psychological aspects of public space design. The courses in general deliver knowledge predominantly on built environment. Students of architecture and urbanism get only a small amount of information about the conditions of abiotic and biotic environment, which influence architectural design, and which are, backwards, influenced by architectural design.

From the courses focusing on the relationship between architecture and the environment, only the Landscape and Park Architecture course principally focuses on delivering the knowledge related to design with natural abiotic and biotic living elements. However, within the limited time, credit allocation and teaching mode (lectures, seminar), it provides only basic introductory theoretical knowledge on natural environment, geology, soil, climate, hydrology, and biotic ecosystems, landscape architecture and landscape planning.

The examination of the courses related to landscape architecture and the courses focusing on the relationship between architecture and environment has shown the absence of the design studio teaching mode. The design studio is the core teaching mode of the planning professions, which includes landscape architecture [4] and this absence has been detected as the main shortcoming in teaching landscape architecture in the curricula of the architecture and urbanism study programmes in the Faculty of Architecture at Slovak University of Technology in Bratislava.

> *Design studios are a form of collaborative learning characterised by intensive exchange with group members and peers. Studios serve as a testing ground for all types of knowledge gained in theory and lecture course* [1].

In the studio, students learn to *think architecturally*, they experience *learning by doing*, *knowing by action* and *reflection in action* [5][6]. They learn these processes while performing a design task under the supervision or guidance of an experienced instructor who is also an accomplished practitioner [5][6]. The design studio teaching mode is crucial for architects and urban planners to develop their competence in comprehension of the complex relationship between buildings and their sites, landscapes and environment. To introduce the design studio teaching mode into the teaching of landscape architecture in the study programmes of architecture and urbanism in the Faculty of Architecture at Slovak University of Technology in Bratislava, several measures have been adopted.

INNOVATIONS OF TEACHING LANDSCAPE ARCHITECTURE IN THE ARCHITECTURE AND URBANISM STUDY PROGRAMMES

The Landscape Architecture Module, as a new course offering a design studio teaching mode, has been introduced into the curriculum of the Bachelor study programme architecture and urbanism in the academic year 2016/17 as an elective course. It consists of: Design Studio of Landscape Architecture Module (eight hours weekly with 13 ECTS credits), Studio Seminar of Landscape Architecture Module (two hours weekly with two ECTS credits), and Selected Chapters of Landscape Architecture Module (two hours weekly with two ECTS credits).

In the Design Studio of Landscape Architecture Module students will acquire knowledge, skills and abilities in designing landscapes and processing landscape-architectural concepts in various territorial contexts - from the scale of region to the scale of city, zone, site, up to the design of landscape-architectural detail. Through the design process students will learn to understand the comprehensive approach required to solving the functional, spatial, technical and compositional arrangements of the area. During the design of landscape-architectural detail students will acquire skills to understand the relationships between landscape concept, public space and architecture.

The Studio Seminar is supplementary to the Design Studio. It is aimed at deepening the knowledge on landscape architecture design issues and topics related to the themes of studio works - in the methodological, theoretical, typological and practical part. The focus and format of the seminar and assignments of the seminar works are individually set to reflect the themes of design studio works. In the lecture based Selected Chapters of Landscape Architecture Module students will acquire additional theoretical knowledge about principles, methods and tools of landscape design and planning, landscape protection, revitalisation and restoration, with the emphasis on functions of vegetation and ecosystem services. Students will gain knowledge about the possibilities of cooperation between architects, urban planners and landscape architects in various dimensions of urban, architectural and landscape design.

However, because the Landscape Architecture Module is an elective course, not all students gain the landscape design studio experience. In order to deliver the landscape design studio experience to all students, landscape architectural consultations are included in the urban design studios, which are compulsory for all students. Landscape architectural consultations are also included in the Bachelor work studios, which focus on public spaces and in the diploma work studios of the urbanism study programme. As noted by Kováč and Vitková, additional educational events are considered highly important according anonymous questionnaires and opinions of students expressed via the electronic academic information system [7].

The strong demand to include landscape architecture and planning approaches into education and research is also created by the requirements of many research and educational projects, which often use the methods of research by design, as for example, in the project OIKONET, which includes collaborative learning processes [8] or more recently in the DANUrb project, with the goal of creating a spatio-cultural network, a *Danube Cultural Promenade* connecting communities along the river Danube and creating a common tourism destination brand.

CONCLUSIONS

Landscape architecture occupies a unique, but also difficult position between the humanities, engineering, fine arts and natural sciences, using knowledge and methods from all those disciplines [1]. As pointed out by Gazvoda:

> *Landscape architecture must keep the advantage it has gained because of its wide use of the knowledge of landscape which no other related disciplines have. Detailed landscape design, creation of new spaces - new landscapes, and use of characteristic, alive landscape material as well as nature protection, landscape ecology and regional landscape planning require both a creative and a scientific approach. The essential ability that landscape architects have, i.e. the capability of switching between concrete details and even global landscape interactions - enables them to achieve different and often better results than might be developed by architects, artists, urban planners, biologists, ecologists and other colleagues when dealing with similar landscape problems* [9].

These words substantiate the claim to extend landscape architecture education in the study programmes of architecture and urbanism, to balance and harmonise the requirements of diversified knowledge needed for the profession of architects and urban planners.

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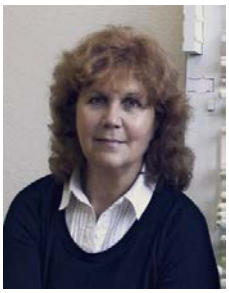
BIOGRAPHIES

Katarína Kristiánová holds a Master degree in architecture and urban planning from Slovak University of Technology in Bratislava, Faculty of Architecture, a Master degree in urban management from Erasmus University Rotterdam, Institute for Housing and Urban Development Studies and a PhD in landscaping from Slovak University of Technology in Bratislava, Faculty of Civil Engineering. She works as an architect in an architectural studio with Juraj Illes and in the Faculty of Architecture at Slovak University of Technology in Bratislava, as a researcher. In 2013, she was a guest scholar at the Getty Conservation Institute in Los Angeles, California. Her research focuses on the management of urban green space, green infrastructure, public urban space, cultural landscape and history of landscape architecture. She is a member of the Slovak Architects Association - Slovak Section of IFLA and the Slovak Association for Garden Design and Landscaping, she is also a member of ECLAS and LE:NOTRE.

Eva Putrová received her Master degree in architecture and urban planning from Slovak University of Technology in Bratislava, Faculty of Architecture in 1977. She obtained her PhD degree in architecture from the same university in 1985. She started her professional career as a lecturer at the Faculty of Architecture Slovak University of Technology in Bratislava in 1977, in the Department of Industrial and Agricultural Buildings. Between 1991 and 2003 she was a member of the Department of Landscape and Park Architecture, and of the Institute of Urbanism from 2003 to 2008. From 2008 to 2015 she was a member of the Institute of Landscape and Garden Architecture and since 2016, she has been an assistant professor of the Institute of Urban Design. Her research focuses on landscape architecture, history of landscape architecture and urban parks. In this field, she has published many conference and journal papers.



Katarína Gécová holds a Master degree in horticulture and landscape architecture from the Agricultural University in Brno, Czech Republic and a PhD in urban planning from Slovak University of Technology in Bratislava, Faculty of Architecture. Since 1993, she has been teaching in the Faculty of Architecture at Slovak University of Technology in Bratislava. Between 2008 and 2015, she was a member of the Institute of Landscape and Garden Architecture and since 2016, she has been an assistant professor at the Institute of Urban Design. She teaches in design studios and seminars. Her interests in research and in education are dendrology, plant design, plant establishment and maintenance, and the use of plants in urban green space and landscape. She is member of the Slovak Architects Association - Slovak Section of IFLA and the Slovak Association for Garden Design and Landscaping. She is also a member of ECLAS and LE:NOTRE.