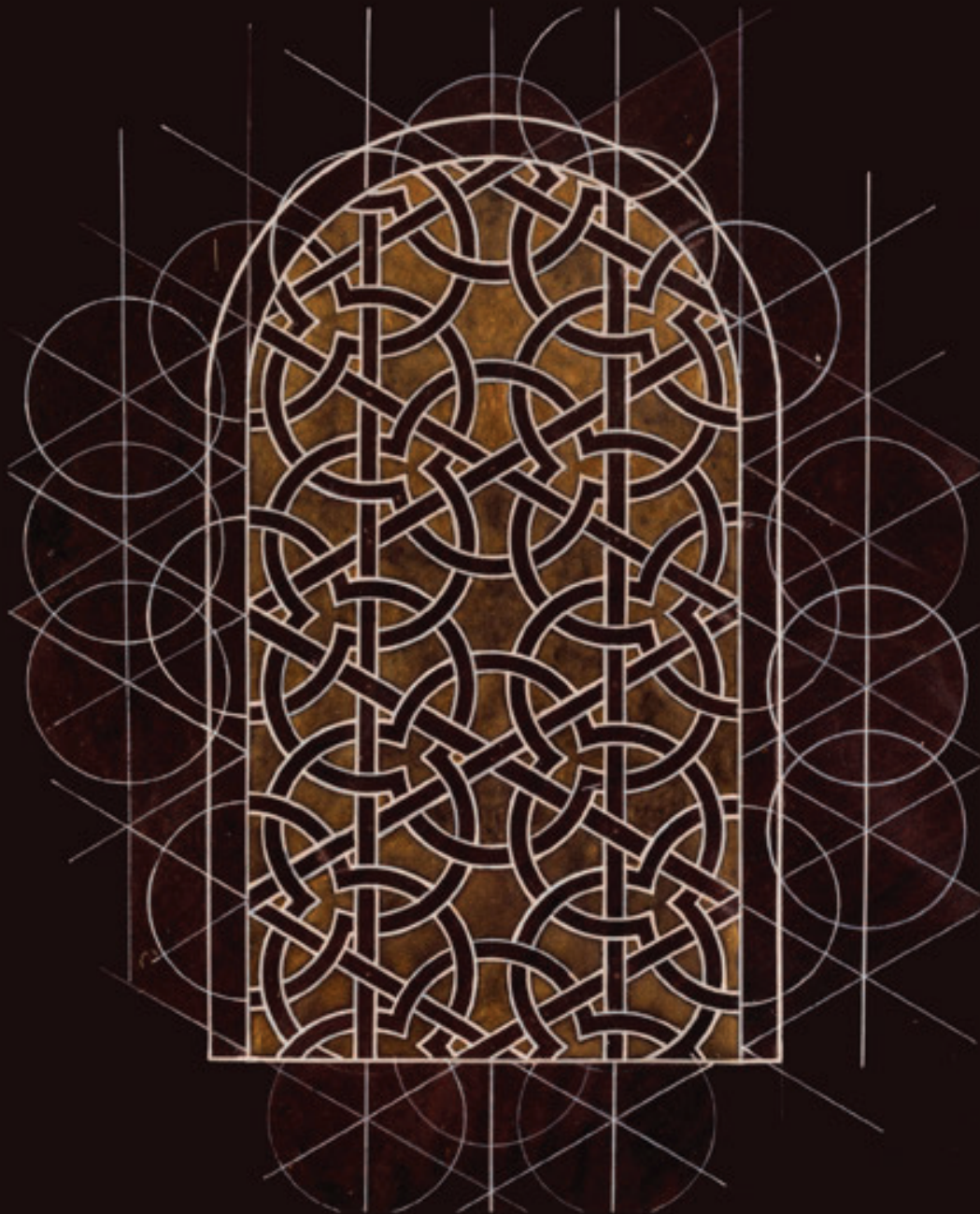


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Typical rural and urban houses from the 19th century Serbia



Ana Radivojević, Ljiljana Djukanović

## *The need for new approaches to the study of traditional architecture in the process of architectural education*

## *La necesidad de nuevos enfoques para estudiar la arquitectura tradicional en el proceso de formación arquitectónica*

## *A necessidade de novas abordagens ao estudo da arquitetura tradicional no processo de ensino da arquitetura*

Abstract | Resumen | Resumo

When modernizing the curricula at the Faculty of Architecture of the University of Belgrade, some fields of study have been somewhat neglected, including the teaching of traditional architecture, which is currently studied only at a basic level. Many students complete their education without adequate knowledge in this field, and this has affected the current situation of architectural practice in Serbia. Two optional courses were initiated to try to fill this gap, with different approaches to the study of traditional architecture. One course focuses on the study of traditional building techniques and materials related to the historical building context. The other course explores the correlation between traditional and sustainable architecture, following the idea that the latter is closely connected to traditional architecture. These teaching experiences, their problems and their outcome will be presented in this paper.

Al modernizar los planes de estudio de la Facultad de Arquitectura de la Universidad de Belgrado, algunos ámbitos de estudio quedaron bastante desatendidos. Éste es el caso de la enseñanza de la arquitectura tradicional, que actualmente sólo se estudia en el nivel básico. Muchos estudiantes terminan su formación sin tener el conocimiento apropiado de este campo y, en consecuencia, esto afecta a la situación actual del ejercicio de la arquitectura en Serbia. Para tratar de llenar este vacío, se iniciaron dos cursos optativos con diferentes enfoques en el estudio de la arquitectura tradicional. Uno de los cursos se centra en el estudio de las técnicas y los materiales de construcción tradicional en lo referente al contexto histórico de los edificios. El otro explora la correlación entre la arquitectura tradicional y la sostenible, conforme a la idea de que esta última está estrechamente relacionada con la arquitectura tradicional. Se presentan en este documento estas experiencias educativas y sus problemas y resultados.

Ao modernizar os currículos da Faculdade de Arquitectura da Universidade de Belgrado, alguns domínios foram de certa forma negligenciados. É o caso do ensino da arquitetura tradicional, atualmente estudada apenas a nível básico. Muitos estudantes completam os seus estudos sem conhecimentos adequados neste domínio, e, conseqüentemente, isto afecta a situação actual da prática arquitectónica na Sérvia. Tentando preencher esta lacuna, foram iniciados dois cursos opcionais, mostrando diferentes abordagens ao estudo da arquitectura tradicional. Um curso foca-se no estudo de técnicas e materiais de construção tradicionais relativos ao contexto histórico de construção. O outro explora a correlação entre arquitectura tradicional e sustentável, seguindo a ideia de que esta última está intimamente ligada à arquitectura tradicional. Estas experiências de ensino, assim como os seus problemas e resultados, serão apresentados no presente documento.

< Typical rural and urban houses from the 19<sup>th</sup> century in Serbia

### Introduction: Attitudes towards vernacular heritage in architectural education in Serbia

If we start from the premise that architectural knowledge and skills, and the manner in which they evolve, are based on traditional architecture, then it is clear that any architectural practice is to some extent based on a knowledge of traditional and vernacular architecture. For this reason, studying the tradition of construction, and especially folk architecture, should be an indispensable part of the syllabus of every school of architecture.

When it comes to architectural studies in Serbia, teaching those subjects was an integral part of the program of the first high education institution of the country, founded in the mid-19<sup>th</sup> century. Over time, various faculties were created within the future university. The Faculty of Engineering was established in 1863 and the Faculty of Architecture was turned into a separate institution within the University of Belgrade at the beginning of the 20<sup>th</sup> century (Mako and Lazović 2016).

The first professors at the Faculty of Engineering were prominent Serbian architects educated abroad who had shown interest in studying the history of architecture and in researching historical Serbian architecture. This resulted in the development of related disciplines and subjects, especially those devoted to Byzantine architecture, the main pillar of Serbian medieval architecture. Furthermore, in the first half of the 20<sup>th</sup> century, interest in the national architectural heritage led to the emergence of a particular Serbian-Byzantine style. In these circumstances, a new subject, called "Folk Architecture", was established in the interwar period. This subject remained in the program of the Faculty of Architecture after the Second World War, but, in the numerous teaching reforms that followed, there was a gradual but significant reduction of its importance within the curriculum (Roter-Blagojević and Nikolić 2019). Today, traditional architecture is studied in the 5<sup>th</sup> semester of undergraduate studies, within the subject "Architectural Heritage in Serbia", with only two hours of lectures.

Consequently, many students today complete their studies without adequate knowledge in the field of traditional architecture, which is reflected in the current state of architectural practice in Serbia. It is noticeable that in general there is no developed awareness of the true values and qualities of traditional architecture, which is often perceived as poor and suitable only for demolition. In many cases traditional buildings undergo intensive reconstruction using new materials, which results in a loss of their original characteristics, as well as technical problems. In this way, the basic qualities of such buildings, those that today would be considered sustainable, are often lost. One of the excuses commonly given to defend this type of approach is the desire to make the houses more durable and to adjust their level of comfort to modern living standards (Radivojević *et al.* 2014). This attitude, along with the growing problem of depopulation in rural areas, especially in the poorer parts of Serbia, increasingly leads to the disappearance of the already endangered heritage of traditional architecture (Ljubenov and Roter-Blagojević 2016).

### Bridging the problem

This distorted attitude towards traditional architecture could be changed by raising awareness of this architectural heritage among future architects. In current circumstances and within the existing structure of the study program, a first step toward a solution could be optional courses dealing specifically with traditional architecture. With this idea in mind, two optional courses were created in the first semester of the Master studies in Architecture at the Faculty of Architecture, dealing in different ways with the legacy of traditional architecture. Both courses are the same type of optional subject, targeting the same group of students, and thus covering a significant part of the student population. One is focused on the study of traditional building techniques and materials within the context of the historical building and aims to deepen the students' knowledge of the research and documentation of existing buildings, while the other course emphasises the link between traditional and sustainable architecture, presenting traditional architecture as a model for achieving sustainability in contemporary practice.

Conceptual scheme of the courses



### "Evolution of building principles in residential architecture in Serbia" elective course

This elective course was formed a few years ago and covers the development of building techniques within Serbia from the 19<sup>th</sup> century to the present day. The modules were designed to fully consider the evolutionary development of construction methods in the local area.

The specific quality of construction in rural parts of Serbia during the 19<sup>th</sup> century is apparent in the diverse application of materials and construction techniques, depending on the region in which that architecture originated. Meanwhile, in urban areas, there was a gradual adoption of a massive masonry structure with brick as the basic construction material that was gradually transferred to the rural environment too. After the Second World War there were significant developments in the area of construction. This is also the time when traditional building techniques started to disappear.

The course is designed to begin with ex-cathedra lectures that give the student a comprehensive overview of the historical development of construction applied in residential architecture in Serbia. Based on the knowledge acquired and on his or her personal interests, the student selects an object of study, which can be from the field of traditional or post-war construction, as long as it is interesting from the point of view of the construction, materials and building details applied.

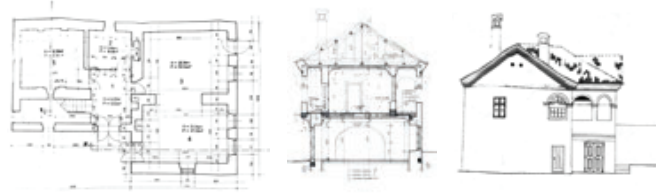


Study of a Simić's residence in Kruševac from the first half of 19<sup>th</sup> century (Aleksandra Vujić)



Study of a village house dating 1850 in Jabučje (Isidora Ekmečić)

The first task is an oral presentation on the research topic, while the exam paper is an essay where the student analyzes the entire building in detail. The idea is that the student explores the building through existing technical documents and related literature, but also through field work. This especially refers to traditional architecture, where there is usually no technical documentation, so inspecting the building on site is the basic source of information on the applied construction methods and materials. Other schools of architecture have also used fieldwork as an extremely efficient way of working with students when it comes to studying architectural heritage (Ulusoy and Yıldız Kuyrukçu 2012). The final essay presents a detailed analysis of the building with adequate illustrations of the construction techniques that were applied and a review of the historical and socio-political context in which the building was created.



Study of Museum Hajduk Veljko in Negotin, built the 19th century (Natalija Stanojević)

“Green building: Lessons from the past” elective course

The aim of this elective course was to familiarize the students with the basic principles of sustainable architecture and to establish the historical framework of this kind of construction. Starting from the premise that certain concepts and strategies of green building (choice of materials and construction methods in the context of caring for resources, energy consumption and environmental pollution) have been incorporated in the past into the design and construction process, students establish a link between historical/traditional principles of construction and the contemporary tools of green architecture. This approach of studying historical and traditional architecture through the prism of one of the modern approaches to design and construction should help to promote a more careful attitude towards architectural heritage, as well as a greater degree of respect and esteem for it.

The program consists of three basic modules: 1. Principles, strategies and methods of sustainable architecture; 2. Lessons from the past: examples of the use of green materials and construction concepts in buildings from the past; 3. Reinterpretation of traditional concepts and building materials in contemporary examples of green architecture. The basic contents of each module are presented ex-cathedra through a discussion and definition of the so-called key words, and each student chooses a topic for independent research and then presents the results of their research during the semester in the form of seminars. At the end of the semester they write an essay in which they analyze specific examples of buildings, mostly from Serbia and its wider region, guided by the principles outlined during the semester.

Although independently established, the basic contents of the course largely corresponded to those of the significant European Versus project (Correia *et al.* 2015). The methodology of this research project is therefore frequently and gratefully used in student works as a tool for recognizing and interpreting different elements of sustainability in the examples analyzed.

Analysis of the cultural landscape of traditional villages of Stara Planina (Jelena Stanisavljević)





## Conclusion

In this challenging era, educating architects is inevitably a complex and multidisciplinary task (UIA 2017). The common approach to architectural education, which generally employs a rigid framework for the study program, does not provide an answer to all the needs of modern society and the needs of this profession. However, a more flexible approach to teaching geared towards solving problems during the course of the project and with a higher proportion of elective content, allows the student to greatly enhance his education by integrating his or her personal affinities. In this way, important areas of architectural education, such as the study of traditional architecture, can find their place in the education system. Introducing topics and subjects that view traditional architecture through a different prism and in combination with other relevant topics can be a first step toward achieving this, as outlined in this paper.

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Manuel Fortea Luna, Celia Loarte La Orden

## *The delicate intervention in the structure of historic buildings: the case of San Millán de los Balbases, Burgos*

### *La delicada intervención en la estructura de los edificios históricos: El caso de San Millán de los Balbases, Burgos*

### *A delicada intervenção na estrutura dos edifícios históricos: O caso de San Millán de los Balbases, Burgos*

## Abstract | Resumen | Resumo

Traditional and historic construction techniques are not currently in the curriculum of architects and engineers in universities. As a consequence, academic education does not ensure that these professionals are equipped to intervene on buildings constructed with these techniques. The church of San Millán de los Balbases, in the province of Burgos, is an example of the harmful consequences of this educational shortfall. This is one of many historic buildings in which a structure alien to its original design, in this case reinforced concrete, was used in an attempt to repair a construction originally based on principles that are incompatible with it, with disastrous consequences. This case serves to point out the need to recover the teaching of this type of constructive techniques in current educational programs.

En la formación académica actual, tanto de arquitectos como de ingenieros, las técnicas constructivas tradicionales e históricas no forman parte del programa de estudios. Consecuentemente, dicha formación académica no garantiza que dichos profesionales estén capacitados para actuar sobre edificios construidos con esas técnicas. La iglesia de San Millán de los Balbases, en la provincia de Burgos, es un ejemplo de las consecuencias nocivas de este déficit formativo. Se trata de uno de los muchos edificios históricos en los que se utilizó una estructura ajena a su concepción primigenia, en este caso el hormigón armado, para tratar de reparar una construcción concebida con principios incompatibles con ella, con nefastas consecuencias. Este caso sirve para señalar la necesidad de recuperar la enseñanza de este tipo de técnicas constructivas en los programas educativos actuales.

O plano curricular para a formação de arquitetos e de engenheiros carece de unidades curriculares em técnicas construtivas tradicionais e históricas. Consequentemente, estes profissionais não estão capacitados para intervir em edifícios construídos com estas técnicas. A igreja de San Millán de los Balbases, na província de Burgos, é um exemplo de las consequências nocivas desta lacuna formativa, pois trata-se de um dos muitos edifícios históricos no que foi usado uma estrutura alheia à sua concepção primigénia, o betão armado, para tratar de reparar uma construção concebida com princípios incompatíveis com a mesma, produzindo com isto danos irreparáveis. Este caso serve para demonstrar a necessidade de recuperar o ensino e formação deste tipo de técnicas construtivas nos programas curriculares actuais.



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