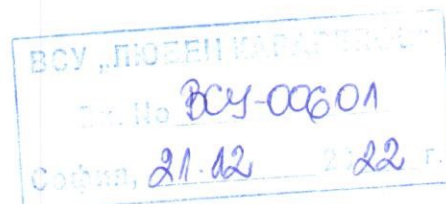




REVIEW



by Assoc. Prof. Dr. Arch. Tsveta  Zheкова

Professor at the Department of Architecture and Urban Planning, Faculty of
Architecture at Varna Free University "Chernorizets Hrabar" - Varna

SUBJECT: dissertation for the award of educational and scientific degree "Doctor"

- **scientific specialty:** "Architecture of buildings, facilities, structures and details"
- **professional field:** 5.7. Architecture, Construction and Geodesy
- **area:** Technical sciences
- **Author of the dissertation:** arch. Kliment  Radoev, PhD student at the Department of Urban Planning, Theory and History of Architecture, VFU "Lyuben Karavelov" – Sofia
- **Topic of the dissertation:** " Method for Studying of Vernacular Housing Structures and Technologies Worldwide
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- **Consultant:** Prof. D.Sc. arch. Borislav Borisov from VFU "Lyuben Karavelov" - Sofia

The review was developed in my capacity as:

- Member of the Scientific Jury, approved by Order N: RD-00011 / 17.01.2022. of the Rector of the Higher School of Civil Engineering "Lyuben Karavelov"
- Reviewer in the competition with a decision of the Scientific Jury from its first meeting, held on 19.11.2021.

1. Brief biographical data

Kliment Radoev's biography demonstrates his interest in technical sciences in secondary education. He graduated from the Sofia Mathematical High School "Paisii Hilendarski", majoring in Physics. Then he logically continued at the University of Architecture, Civil Engineering and Geodesy - Sofia and graduated as an architect. As a student he began to practice the profession in leading architectural studios in Bulgaria. After graduating, he continued to work in design and joined the teaching staff of UACEG-Sofia and NBU-Sofia. From 2017 his teaching career continues at the University of Nottingham - Ningbo, China to this day.

Impressive are the many awards and distinctions in national and international competitions, where he often wins prizes. They are proof of his rich design and academic experience. His work with students ranges from organizing exhibitions and workshops to leading over 60 graduates. Many

of them have been awarded prizes and have had a successful career. Performs its administrative duties precisely and participates in the research activities of the respective universities.

2. Fulfilment of the minimum national requirements according to the Law for the development of the academic staff

With the required minimum number of 50 points on 4 groups of indicators, the candidate Kliment Radoev presents research and design products that exceed the minimum national requirements.

The applied total output is distributed as follows:

Indicator A: Dissertation for the award of educational and scientific degree "Doctor" (defense) - **50 points (required - 50 points)**;

Indicator B: **not applicable**;

Indicator D: Scientific publications in non-peer-reviewed journals with scientific review - **80 points (required - 30 points)**:

- Radoev K. and Deng W., (2021) A Method of Creating Vernacular Houses' Pictograms Based on "Climate – Form" Impact and Relationship: Houses' Pictograms; Part 2, Submitted to Vernacular Architecture;
- Radoev K., (2020) Vernacular Structures Environmental Application, XX International Conference on
- Radoev K. and Deng W., (2020) A Method of Creating Vernacular Houses' Pictograms Based on "Climate – Form" Impact and Relationship: Houses' Pictograms; Part 1, UNNC Nottingham e-Print
- Radoev, K. (2019) Theoretical Methodology for Classification, Systematization and Sistematization of Architectural Structures, IX International Scientific Conference ArCive 2019, Varna, Bulgaria.
- Radoev K., (2019) Classification System and Integrated Research of Structures and Building Elements, XIX International Conference on Construction and Architecture, VFU "L. Karavelov", Sofia, October 17 - 19, 2019

Indicator E: **Not applicable**.

The total number of points obtained with the attached production is **130 points**, which exceeds the minimum national requirements (**80 points**) to the research, teaching and artistic activities of the candidate for the degree of "Doctor" in scientific specialty: "Architecture of buildings, structures, facilities and details", Professional field: 5.7. "Architecture, Construction and Geodesy", field: Technical Sciences.

3. Relevance of the dissertation

The research in the dissertation reflects current issues related to the application of the principles of sustainable architecture using different approaches based on vernacular architecture. Opportunities for environmentally friendly construction that meet modern requirements for energy efficiency, reduced carbon footprint and economic feasibility have been identified.

The objective necessity of studying the technical characteristics and properties of vernacular houses and their classification in the proposed taxonomic system has been established. The need to create a common system for collecting, processing and storing this data has been proven, given the disappearing nature of these houses. A specific methodology has been proposed for the purposes of such studies and subsequent analyzes.

The study demonstrates a philosophical approach to the research topic by considering a significant number of examples (over 90) and derives many patterns applicable in modern construction. The proposed research methodology, with its strictly defined mechanisms and templates, makes the development not only relevant but also very important for science as a whole. The creation of an "Online Encyclopedia of Vernacular Houses" around the world is undoubtedly an ambitious goal that will enrich scientific knowledge in many areas.

4. General analytical characteristics of the dissertation

In the structure of the developed dissertation the main researches are systematized in the following main chapters:

Chapter I: "Theoretical basis of the study"

Chapter II: "Examples developed and studied"

Chapter III: "Theoretical Analysis"

Appendix 1 - Maps

Appendix 2 - Glossary

The first chapter of the dissertation reviews the main features of vernacular houses and their significance for modern life. The topic, goals, tasks, object and scope of the research are clearly defined. In the introductory part, the author presents a philosophical reading of architecture "as a product of a natural evolutionary process." The topic of the dissertation is methodology and classification of vernacular houses around the world. Arch. Radoev emphasizes the structure-determining factors for classification (such as construction and technological process), which do not always coincide with regional borders. The aim of the development - to create a unified system for the study of vernacular houses and the creation of an open database, has to do with architecture and in other areas such as history, archeology, philosophy. The tasks of the research clearly follow the stated goal and are fully fulfilled - analysis of studied examples according to a matrix template determined by the author and their categorization in taxonomic order. The object and scope of the study are defined, and it is noteworthy that there are few Bulgarian examples that are likely to be the subject of future research. Undoubtedly, the author's contribution is the creation of a dictionary

of the most frequently used concepts, which clearly delineate the boundaries and associations of their meaning.

Chapter Two presents all the studied examples and most of them are developed in detail using the chosen methodology. A specific mechanism with a strictly formulated sequence of collecting and processing the collected information is derived through a template proposed by the author. The synthesis and subsequent classification of this information is done with a template, again proposed by the author. This proves the applicability of the presented methodology and the possibilities for creating a database of vernacular houses around the world.

In the third chapter of the dissertation, the doctoral student makes a theoretical analysis of the studied examples by defining three hypotheses (zero, first and second), which he proves. He derives a system for classifying vernacular houses through them, which is accompanied by the definition of specific significant criteria and hierarchical structure. This approach is applicable in the study of both vernacular houses and other types of buildings, tracing their origin, evolution and sustainability over time.

The final part of the dissertation presents a synthesized summary and findings by referring to new philosophical paradigms such as whether the building should be considered as an object or subject, whether it is a product of natural evolution and man is only an instrument in this process.

The contributions of the development are defined with an emphasis on the created methodology, the taxonomy system and the initial database for an online encyclopedia. The applications that should start an international system for collecting information about vernacular houses and a map of their distribution are described.

5. General evaluation of the dissertation and its results

On the basis of the in-depth research conducted by the doctoral student, convincing results have been achieved, which confirm his main research thesis on the need to create a methodology for collecting, processing and storing data on vernacular houses. Existing examples from different countries have been studied and systematized in detail, which demonstrates the candidate's analytical skills.

An indisputable advantage of the work is the map of the origin and distribution of different types of vernacular houses, which will have a significant scientific and applied contribution.

The volume of development is also remarkable. The text together with the figures and tables is 305 pages, including: 123 figures, 11 tables and 39 tables in matrix form with presented data. 308 literature sources, 128 Web sources and 81 figures figures were cited.

From the applied materials of the dissertation the conclusion about the significant personal author's contribution to the overall scientific development is formed, as well as about the possibilities for real application of the obtained scientific-applied results in the field of residential architecture.

6. Notes and recommendations for the dissertation

Some recommendations for future developments can be made to the dissertation, which would enrich its merits as a research work:

- to enrich the developed examples with houses from Bulgaria;
- despite the demonstrated good graphic culture in the author's schemes, the lack of translations on some maps and schemes is impressive, the reduced resolution of some of them, which makes them difficult to read;
- It is good to study the possibilities of modern geographic information systems (GIS) to present the collected data in graphical form (as map material).

After getting acquainted with the dissertation, the following questions arise, which the author can also comment on:

- Does he think that the definition of "vernacular houses" fully corresponds to his understanding? Is it appropriate to call them "ancient" according to him?);
- Is there in his design practice a site in which he has applied ideas or construction techniques from the studied examples?

7. Conclusion

In conclusion, I believe that the presented dissertation meets the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria, the Regulations for its implementation and the requirements of the university. It is essential to state that the developed work indicates a number of important guidelines for future development of the field in both scientific and applied science. This gives me a reason to give my positive vote "FOR" and propose arch. Kliment Radoev to be awarded the scientific-educational degree "Doctor" in the scientific specialty: "Architecture of buildings, structures, facilities and details", Professional field: 5.7. "Architecture, Construction and Geodesy", field: Technical Sciences.

Reviewer:


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(Assoc. Prof. Dr. Arch. Tsveta Zhekova)

Varna, 01.02.2022r.