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REVIEW

Foreign scientific consultant for a dissertation

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"Architectural renovation of industrial buildings using the example of large cities in Kazakhstan»

for the degree of Doctor of Philosophy (PhD)
by speciality 6D042000 - Architecture

1. Compliance of the topic of the dissertation (as of the date of its approval) with the directions of scientific development and/or government programs.

The topic of the doctoral dissertation is very important, consistent with the current directions of scientific development and government programs in Kazakhstan (including the Development Plan 2025, 2050). It also corresponds to the directions of transformation of existing city structures, in particular post-industrial facilities, in order to adapt them to the conditions of the 21st century in accordance with the assumptions of sustainable development.

2. The importance of the research performed for science.

The conducted research presents very high scientific value. The research expands scientific knowledge about the possibilities of adaptation and architectural renovation of post-industrial buildings, as well as knowledge about creative transformations of such facilities in the context of the development of the environment in modern cities. The research brings significant contribution to the science development.

3. Compliance with the principle of independence.

The doctoral thesis is original. The results of the research have been published, among others, in papers at scientific conferences, in articles in scientific journals (7) and in journals in the Scopus database (2).

4. Compliance with the principle of internal unity of the dissertation.

The doctoral thesis is a coherent author's study. The layout of the work is very logical and corresponds to the topic of the work. In her work, the doctoral student uses a rich set of source materials and a large number of global literature, which proves her extensive knowledge of issues related to the renovation and adaptation of post-industrial buildings in the context of the development of urban space.

5. Assessment of the conformity of the object, subject, purpose, scientific novelty and practical value of the completed dissertation.

The structure of the doctoral thesis is correct and model-like. The topic is consistent with the content of the work, the purpose of the work, hypotheses and conclusions are correctly formulated. The research methods used in the work are adequate to the topic of the work (including analytical, comparative, experimental modeling, graphic methods, etc.). I rate the substantive value of the work as well as the research results very highly.

6. Validity of the main conclusions.

Based on the conducted research, conclusions important for the science and development of cities in Kazakhstan were formulated. Wide possibilities of using research results in practice significantly increase the overall value of research.

7. Basic provisions submitted for defense.
The aspects of the doctoral thesis presented for defense concern, among others: the principles of the impact of architectural changes in renovation on the environment and urban space; principles of effectiveness of renovation of post-industrial buildings in the urbanization process of cities; comparative research on foreign and Kazakh experiences of renovation of post-industrial buildings and adaptation to modern needs; principles, methods and strategies of renovation and adaptation; assessment of the renovation of industrial buildings in the city of Almaty; graphic diagrams of the theoretical model of architectural adaptation in the cities of Kazakhstan in the context of the concept of their spatial development.

8. Compliance with the principle of reliability. (Principle of practical value)
The conclusions from the conducted research have great practical value. The results can be used in the preparation of renovation strategies, in the preparation of specific architectural solutions for the renovation of industrial facilities in the cities of Kazakhstan and in their adaptation to new functions. They can be helpful in formulating documents, standards or scientific criteria and possibilities of renovation of selected facilities in Kazakhstan.

9. Assessment of the quality of writing and design (volume, form of presentation).
The doctoral thesis consists of an introduction, 3 chapters, conclusion, bibliography and 3 appendices; has 180 pages. An integral part of the work are appendices and graphic diagrams of the developed theoretical experimental model of architectural and functional adaptation of industrial buildings in the cities of Kazakhstan. I rate the quality of the text and graphics very highly.

10. Personal characteristics of a doctoral student in the process of performing dissertation research
The research and analyzes while working on the dissertation were conducted by the doctoral student in Kazakhstan and in foreign universities (including Bialystok University in Poland – EU. During the research, rich source material was collected, including: in the form of inventory materials of post-industrial facilities, photographic and video material, which was the subject of multi-criteria analyzes in the next stages. The doctoral student demonstrated diligence and scientific maturity in formulating research hypotheses, conducting scientific research, using appropriate research methods and formulating research conclusions. This is clearly evidenced by the research results, including the developed taxonomy and theoretical model of the adaptation of industrial buildings.

Conclusion
Identification of the submitted work as a completed scientific qualification work, opinion on the compliance of the dissertation with the requirements of the Rules for Awarding Degrees of the Republic of Kazakhstan and on awarding the doctoral student the degree of Doctor of Philosophy (PhD).

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