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SCIENTIFIC SCHOOL OF MANAGEMENT OF RISKS TO THE REAL PROPERTY UNDER CONSTRUCTION AND IN USE: PURSUIT AND ACHIEVEMENTS

Abstract. The article is devoted to the actual issues of the introduction of European standards in the construction industry. One of the most important areas is the development of a system of engineer consultants that works efficiently abroad and can contribute to the development of the construction industry in Ukraine. At the current stage of economic development, the construction industry requires the creation of effective integrated management systems that can ensure its competitiveness not only within the framework of Ukraine but also in European markets. In conditions of transformation of the economic system to European standards of business, special attention is needed to create scientifically grounded prerequisites for the development of the construction industry. In this aspect, the development of a scientific risk management school in the construction and operation of real estate is of particular relevance. The article gives a theoretical definition of the concept "scientific school", conducted a retrospective analysis of the definition of the conceptual foundations of the development of scientific schools in Ukraine and abroad. On the basis of the analysis carried out, the main characteristics of scientific schools and the prospects for further development of research and development in the field of construction and operation of buildings and structures are indicated. The purpose of the article is to determine the further ways of developing the school of science, to provide effective practical solutions to the actual problems of risk management at the macro level and macro levels. The Scientific School of Risk Management in the construction and operation of real estate objects is an analysis of the processes of risk management of construction projects and the operation of real estate objects throughout the life cycle of the construction project (pre-investment stage, design, construction, commissioning, operation, repair, reconstruction, demolition and utilization of materials and waste). That is, approaches to the research work of the School of Risk Management in the construction and operation of real estate objects are complex and systemic, and the issues that it considers may be relevant to solving problems of various stages of the implementation of construction projects, which emphasizes the great

importance of the development of scientific areas school. In order to ensure the further development of a scientific risk management school in the construction and operation of real estate objects, priority tasks and future directions of further development have been identified.

Keywords: public administration, construction, risk management, scientific school, eurointegration.

НАУКОВА ШКОЛА УПРАВЛІННЯ РИЗИКАМИ В ГАЛУЗІ БУДІВНИЦТВА ТА ЕКСПЛУАТАЦІЇ ОБ'ЄКТІВ НЕРУХОМОСТІ: ПОШУКИ ТА ЗДОБУТКИ

Анотація. Розглядаються актуальні питання впровадження європейських стандартів у будівельній галузі. Одним з найважливіших напрямів є розроблення системи інженерів-консультантів, яка ефективно працює за кордоном та може сприяти розвитку будівельної галузі в Україні. На сучасному етапі економічного розвитку будівельна галузь вимагає створення ефективних інтегрованих систем управління, які можуть забезпечити її конкурентоспроможність не тільки в межах України, а й на європейських ринках. В умовах трансформації економічної системи до європейських стандартів бізнесу необхідно приділяти особливу увагу створенню науково обґрунтованих передумов для розвитку будівельної галузі. У цьому аспекті особливого значення набуває розвиток наукової школи з управління ризиками при будівництві та експлуатації нерухомості. Викладено теоретичне визначення поняття "наукова школа", проведено ретроспективний аналіз визначення концептуальних основ розвитку наукових шкіл в Україні та за кордоном. На основі проведеного аналізу визначені основні характеристики наукових шкіл та перспективи подальшого розвитку досліджень та розробок у галузі будівництва та експлуатації будівель та споруд, з подальшим забезпеченням ефективного практичного вирішення актуальних проблем управління ризиками на макро- та мікрорівні. Наукова школа управління ризиками при будівництві та експлуатації об'єктів нерухомості — це аналіз процесів управління ризиками будівельних проектів та експлуатації об'єктів нерухомості протягом життєвого циклу будівельного проекту (стадія попередінвестування, проектування, будівництво, введення в експлуатацію, експлуатація, ремонт, реконструкція, знесення та утилізація матеріалів та відходів). Тобто підходи до дослідницької роботи Школи ризик-менеджменту при будівництві та експлуатації об'єктів нерухомості є складними та системними, а питання, які вона вирішує, можуть бути актуальними для вирішення проблем різних етапів реалізації будівельних проектів, що підкреслює важливість розвитку наукових напрямів школи. Для забезпечення подальшого розвитку наукової школи управління ризиками при будівництві та експлуатації об'єктів нерухомості визначені пріоритетні завдання та майбутні напрями подальшого розвитку.

Ключові слова: державне управління, будівництво, управління ризиками, наукова школа, євроінтеграція.

НАУЧНАЯ ШКОЛА УПРАВЛЕНИЯ РИСКАМИ В СФЕРЕ СТРОИТЕЛЬСТВА И ЭКСПЛУАТАЦИИ ОБЪЕКТОВ НЕДВИЖИМОСТИ: ПОИСКИ И ДОСТИЖЕНИЯ

Аннотация. Рассмотрены актуальные вопросы внедрения европейских стандартов в строительной отрасли. Одним из важнейших направлений является разработка системы инженеров-консультантов, которая эффективно работает за границей и может способствовать развитию строительной отрасли в Украине. На современном этапе экономического развития строительная отрасль требует создания эффективных интегрированных систем управления, которые могут обеспечить ее конкурентоспособность не только в рамках Украины, но и на европейских рынках. В условиях трансформации экономической системы к европейским стандартам бизнеса необходимо уделять особое внимание созданию научно обоснованных предпосылок для развития строительной отрасли. В этом аспекте особое значение имеет развитие научной школы по управлению рисками при строительстве и эксплуатации недвижимости. Изложено теоретическое определение понятия "научная школа", проведен ретроспективный анализ определения концептуальных основ развития научных школ в Украине и за рубежом. На основе проведенного анализа указаны основные характеристики научных школ и перспективы дальнейшего развития исследований и разработок в области строительства и эксплуатации зданий и сооружений с дальнейшим обеспечением эффективного практического решения актуальных проблем управления рисками на макро- и микроуровне. Научная школа управления рисками в сфере строительства и эксплуатации объектов недвижимости — это анализ процессов управления рисками строительных проектов и эксплуатации объектов недвижимости в течение жизненного цикла строительного проекта (стадия перединвестиционная, проектирование, строительство, ввод в эксплуатацию, эксплуатация, ремонт, реконструкция, снос и утилизация материалов и отходов). То есть подходы к исследовательской работе Школы риск-менеджмента в сфере строительства и эксплуатации объектов недвижимости являются сложными и системными, а вопросы, которые она решает, могут быть актуальными для решения проблем различных этапов реализации строительных проектов, подчеркивает важность развития научных направлений школы. Для обеспечения дальнейшего развития научной школы управления рисками при строительстве и эксплуатации объектов недвижимости определены приоритетные задачи и будущие направления дальнейшего развития.

Ключевые слова: государственное управление, строительство, управление рисками, научная школа, евроинтеграция.

Problem setting. An issue of risk management in conditions of an unstable financial and economic situation and the growth of mobility and operational efficiency of managerial decision-making in conditions of uncertainty is

one of relevant directions of modern research. One of the sectors of developing economy in conditions of a large number of risks is the construction industry. Background for the unstable development of the construction industry is its specific characteristics: a significant time gap between an investment and its reward, the timing of commissioning of the finished building products, high technological effectiveness of the industry, risk of injury for its workers, the need for establishing cooperation with the authorities and local governments, which often involves bureaucracy and corruption in administrative agencies. Consequently, an issue regarding development of ways of effective risk management in the construction and operation of real estate has its relevance and requires more detailed study. With the aim of solving the urgent problems of risk management in construction the Scientific School of Management of Risks to the Real Property under Construction and in Use was established and has been operating at the Interregional Academy of Personnel Management.

Analysis of recent researches and publications which initiated solving this problem. Problems of providing effective public management of risks to the real property under construction and in use were studied in the works of many foreign and national scientists. In particular, the financial mechanisms of risk management in implementation of construction projects with due account taken to the specifics of housing were identified in the works of A. Rybak, I. Azarova [1]. Amid need for transforming the risk management system and adopting international standards, the industry requires highly skilled specialists with new approaches to management, which has been considered in the works of E. Romanenko, I. Chaplai [2]. The communicative component of risk management in construction projects is defined in the work of I. Chaplina [3]. Mills A. proposed creating a risk management system taking into account specifics of the construction industry [4]. Y. Yashchenko, and S. Neizvestnyi dedicated several scientific papers to the issues of implementing design activity goals and developing ways to achieve them under the conditions of risks [5]. An issue of state regulation of risk management in construction projects was smoothed out in the monograph of A. Diegtiar, O. Diegtiar, O. Kaliuga, O. Nepomnyashchyy, R. Sobol [6]. Ways of risk identification are presented in the work of M. Cohen [7]. The priorities of the state regulation of communication schemes of risk management in business projects were a subject of works written by V. Kazakov, A. Rashkovska, V. Rebkalo, E. Romanenko, I. Chaplai [8]. Y. Teslia, O. Danchenko considered the synergistic effect of the complex of actions regarding the risk management of construction projects [9]. A great contribution to the development of the issue of risk management in construction projects and operation of real estate was made by the previously mentioned Scientific School.

Selection of the parts of general problem unsolved before which are the subject of the Article. However, professional management and independent control in construction, the development of effective training methods to obtain highly qualified personnel and continuous research work in the

field of support of construction development remain topical issues. Urgent problems of construction and addressing them is a priority for the Scientific School of Management of Risks to the Real Property under Construction and in Use. Thus, the purpose of the article is to identify further ways of development of the Scientific School, provide effective practical solutions to urgent problems of risk management at the micro and macro level.

To meet the purpose, there is a number of tasks outlined as follows:

• to give a theoretical definition of the term "Scientific School";

• to describe current research directions of the Scientific School;

• to consider the results of the Scientific School research work;

• to determine functions implemented by the Scientific School;

• to define perspective directions of further development of the Scientific School.

Presentation of the main research material with full substantiation of obtained results. One of the areas of systematization of integrated scientific research is performance of research by a group of experts in the related subject area within association into a single Scientific School [10].

The history of formation of scientific schools reaches the XIX century. At this time research work carried out in scientific laboratories that just began to operate became widespread. The practice of scientific research was actively introduced in the academic environment. A great potential was identified in the framework of scientific societies and communities that published research results in scientific periodicals — scientific journals, which began to appear in the nineteenth century.

Development of the scientific community was connected with the existing demands of social and economic development. Further development of production was closely associated with its provision with the latest technologies that could allow for intensive development. Further progress of science was shaped using a form of integrated work of not one scientist but a group of them, which contributed to making the research results more systematic, complete and consistent. The effectiveness of this joint work was determined by the effectiveness of its implementation.

At the same time, scientific leaders appeared one by one in the system of group studies, namely specialists of the corresponding profile with high results in the development of a particular theme, which was evidenced by extensive experience and a deepening in the development of the proposed issue. Creative teams were formed around the scientific leaders, they brought together not only scientists engaged in this subject, but also students of the scientific school who continued, multiplied and developed the achievements of their predecessors in exploring a range of issues. In these conditions not only the group complex work appeared on the foreground, but also the personality of a scientific leader, around whom a scientific school was formed. Scientific leaders of the new formation were not just explorers then, they were talented teachers who passed on their knowledge and experience to future professionals who multiplied their achievements, continued development of scientific research and broadened the range of

research, covering new aspects of the scientific school. So, a talented scientist and a leader became the basis of the scientific school, this person defined the scientific school development program, as well as developed the methodology of research and training of its followers.

Intersecting and complementing each other, scientific schools formed new research teams and ensured the success of work of new scientific leaders, who determined the relevance of innovative techniques of research work for society and were engaged in solving new topical problems of production, economy, social development so on.

Therefore, having analyzed the development retrospective of the concept of "scientific school", its functions can be determined. Firstly, it is the work of a team of scientists on conducting research on topical issues of economic development. Secondly, it is the training and education of practitioners and scholars who will continue the work of the school and address new challenges set to the science by the society.

It is possible to allocate the peculiarities of functioning for scientific schools as follows [11]:

• teamwork;

• organized research: planning, organization, monitoring execution of work;

• presence of a leader of the scientific school;

• a single research program;

• the availability of research methodology;

• common scientific views of the participants;

• informality of the creative team.

Among the functions of the Scientific School it is possible to allocate as follows [12]:

• carrying out research work on topical issues on development of society, economy, production, public administration etc.;

• producing knowledge and innovative products — intellectual property;

• training new generation of experts on topical development issues;

• spreading results of research work to improve the efficiency of social development.

The Scientific School of Management of Risks to the Real Property under Construction and in Use corresponds to the implementation of all abovementioned functions.

The Scientific School of Management of Risks to the Real Property under Construction and in Use was established in June 2017 by the decision of the Academic Council of the Interregional Academy of Personnel Management in accordance with the Regulations of the Scientific schools of the Academy, approved by the Rector's Order of October 20, 2016 № 162-0. The Scientific School is headed by Oleksandr Mykhaylovych Nepomnyashchyy, Doctor of Sciences in Public Administration, Professor of the Public Administration Department of the Interregional Academy of Personnel Management.

In the framework of the Scientific School a comprehensive research topic "Methodological and practical bases of forming public management policies of risks in industrial relations and social processes to the real property under construction and in use" [13].

The work of the Scientific School of Management of Risks to the Real Property under Construction and in Use is focused on finding effective ways

of minimizing and preventing risks in the course of construction projects at all stages of the life cycle based on international practice and practical risk management, in particular on the basis of scientific analysis of the conceptual framework for the use of FIDIC standard forms — the International Federation of Consulting Engineers, and other international construction contracts.

Achievements of the school have created conditions and identified the scientific substantiation of practical tasks of establishing an effective mechanism of public risk management of construction projects and risk management during operation of facilities through establishment of independent monitoring and control that meets the international standards and best practices of engineering institutes in the world. One of the proposals of the Scientific school regarding minimization of risks of construction projects is the establishment of a position of a consulting engineer that has exclusive designed job description, the rights and obligations of such specialists. On the basis of these studies a new profession of "consulting engineer (construction)" was included in the National Occupational Classification DK 003:2010, the Dictionary of Occupational Titles (Issue 64 "Construction, assembly and repair work") defines qualification characteristics of the profession, which became the start of a new, more efficient state policy in the sphere of risk management in construction projects.

In the framework of Scientific School of Management of Risks to the Real Property under Construction and in Use the following works in approbation have been published:

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In total, representatives of the Scientific School of Management of Risks to the Real Property under Construction and in Use published more than 180 monographs, articles, made presentations and published abstracts at international and national scientific conferences only throughout 2017.

These works are dedicated to problem aspects of risk management in construction projects in the conditions of transformational processes in economy of Ukraine, aimed at ensuring the integration vector of development of the national economy. The transition of construction to European standards and system of risk management in construction projects will ensure the competitiveness of domestic companies on the European markets. However, the introduction of European regulations and standards should take into account the nature of the domestic construction industry, and scientists and skilled specialists of the construction industry should ensure the implementation of the European approaches to construction taking into account the specifics of the domestic market of construction

services. This process must be accompanied by the development of innovative models of risk management in construction projects based on in-depth scientific analysis and be proved empirically. Because errors in the risk management system lead to large financial losses and can cause the crisis in the framework of activities both in a single enterprise and in the construction industry as a whole.

The Scientific School of Management of Risks to the Real Property under Construction and in Use carries out an analysis of the risk management processes of construction projects and operation of real estate units throughout their life cycle (pre-investment stage, design, construction, commissioning, operation, repair, renovation, demolition and disposal of materials and wastes). That is, approaches to scientific research of the School are complex and systemic, and the issues under consideration may be relevant for the solving of tasks of the various stages of construction projects, which underlines the great practical importance of development of scientific directions of the School.

The Scientific School consists of talented scientists, practitioners, representatives of state bodies and local authorities, postgraduate and doctoral students involved in the development of the mainstreaming of risk management in the construction industry.

The participants of the Scientific School of Management of Risks to the Real Property under Construction and in Use have been carrying out scientific and technological cooperation with the following institutions:

- Interstate Consultants Engineers Guild (ICEG);
- UNCITRAL, The UN Commission;
- FIDIC;
- FEANI;
- MDB;
- ICC.

Among the most urgent problems, considered by representatives of the School within the framework of comprehensive research work are as follows [13]:

- implementation of self-regulation of town planning activities in Ukraine;
- study of solutions to the problems of the Chernobyl Nuclear Power Plant Zone of Alienation;
- work to improve legislation in the field of risk management in construction to bring it into line with European regulations and standards;
- scientific rationale for reforming town planning legislation through the deregulation of the construction activities;
- elaboration of a methodology for the study and improvement of legislation in the field of construction with the aim to ensure effective cooperation with international financial institutions to reach investment attractiveness of the construction complex;
- formation of the housing market infrastructure;
- improvement of the state policy in the part of providing urban amenities and public service;
- participation in the USAID Municipal Energy Reform Project in Ukraine;
- implementation of international educational projects on ecology and environmental protection, national and regional programmes for the reform and development of construction, housing and communal services, provision of

urban amenities, waste management, and so on.

In the framework of the Scientific School of Management of Risks to the Real Property under Construction and in Use management there are twenty-nine doctoral and doctor of philosophy's theses prepared and defended.

The rapid development of the Scientific School of Management of Risks to the Real Property under Construction and in Use proves the relevance of the research work chosen for conduct. In the conditions of transformation processes in the state economy and putting it on the track of European integration changes, the process of ensuring competitiveness of Ukrainian enterprises on the European markets is getting a particular relevance. Development of practical recommendations of the Scientific School of Management of Risks to the Real Property under Construction and in Use is proven not only by a high qualification of the professionals but also by a broad international collaboration with leading international public institutions, foreign exchange funds and government and municipal authorities, whose experience is studied and adapted to the realities of the Ukrainian construction market.

Among the promising focus areas of the Scientific School of Management of Risks to the Real Property under Construction and in Use there are the following:

• development of the international cooperation for the exchange of progressive experience in risk management of construction projects;

• more active involvement of young scientists to research work within the theme of the School;

• ensuring interaction with business to improve the effectiveness of risk management processes in construction enterprises;

• ensuring cooperation with public authorities for the implementation of risk management standards in construction and to create conditions for further development of the construction industry.

Conclusions. A retrospective analysis of the development of the concept of scientific school was carried out in the study. The article defines that a scientific school is a hierarchical organizational structure of the creative team of associates who are engaged in research development within the related topic. The key characteristics of scientific schools were highlighted. The work of the Scientific School of Management of Risks to the Real Property under Construction and in Use was presented, which is engaged in the issues of the construction industry development. Its functions and the main results were specified. In particular, the results of the research work of the School for 2017 were published in more than 180 issues, and total scientific background of its representatives is more than 330 monographs, articles, works in approbation, which proves the relevance and importance of the chosen theme. To ensure further development of the Scientific School of Management of Risks to the Real Property under Construction and in Use the priorities and prospective directions of further development were set .

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