

Methodology of Risk Management in Providing Sustainable Development of Settlements

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Abstract: In any activity, we deal with internal and external factors having a direct impact on its results and which are determined as ‘risks.’ Countries stand up to threats in economy, politics, environment, social risks, man-made disasters with the capacity to destabilize social and economic life. In Ukraine’s circumstances, these risks are compounded by geopolitical instability, the military conflict in the East of the country, a high level of corruption and a burden of the Soviet heritage of regulating the economy.

Construction and operation of real estate throughout its life cycle (from shaping investment intents, including design, construction, operation, repair, reconstruction, and up to demolition and reclamation of materials and waste) is a significant example for development and implementation of risk management models. Therefore, the elaboration of a methodology for risk management is of increasing significance for the policies and practices aiming to provide sustainable development of settlements by means of technical regulation in construction.

Keywords: construction, operation, emergency situations, risk management, technical regulation, methodology.

Introduction

One of the tasks of state regulation in construction is the realization of the constitutional right of citizens to a safe and healthy environment.

With the increasing population density of cities and the progressive complications of the urban environment, the risks of losses and losses of human, material and financial resources also increase. Centuries of construction activity and the experience of eliminating losses from emergencies have shown the need to control and reduce the risks associated with the creation and operation of real estate objects. The urgency of the security problem is due to the growing tendencies of the threat to life and health of people, losses and damage to areas caused by natural hazards, accidents and disasters. Emergency risks are constantly rising.

According to the analytical review of the state of man-made and natural safety in Ukraine for 2016, in 2016 the territory, population and economy of Ukraine were under the complex action of factors that negatively affected the vital activity of the country due to the emergence of man-made and natural emergencies, deterioration of the environment, death of people and economic losses. The overall state of man-made and natural safety of Ukraine in the reported year remained stable in terms of the correlation between different types of emergencies and their territorialization. The inadmissibility of further reducing the level of safety and reducing the duration of life objects due to the maintenance of buildings, structures, equipment and engineering networks that works at the limit of exhaustion of their resources and present a potential danger to the life and activities of people, requires the development of new approaches to risk management in providing sustainable development of territories.

Reducing risks in the areas of construction and operation of facilities and minimizing the possible consequences of failure of construction as a result of accidents, man-caused and natural disasters is one of the priority tasks of public administration. One of the most effective means of public risk management is technical regulation.

Technical regulation – legal regulation of relations in the field of determining and enforcing mandatory requirements for the characteristics of products or related processes and production methods, as well as verification of their deterrence, by assessing compliance and / or state market supervision and control of non-food products or other types state supervision (control).

In Ukraine, the system of technical regulation in the field of construction and operation of buildings needs to be developed and improved based on world experience.

The introduction of world practice in risk management in construction and management of facilities will require implementation of institutional changes. At the same time, the world experience has shown the ineffectiveness of the use of exclusively instruments of public risk management and the need for the development and dissemination of public administration institutions to this process.

Risk Management via Technical and Legal Regulation

The task of technical regulation as a form of public administration in construction is the realization of the right of citizens to a safe and healthy environment by adhering to the requirements of technical regulations throughout the life cycle of buildings and structures, while ensuring a favorable legal framework for business development, attracting and protecting investments, and as a consequence, ensure the stable development of the territories.

The development of public administration in the field of construction and management of facilities should be focused on security based on risk management. Introduction of the principles of risk management will contribute to reducing the level of social and material risk for a person from different kinds of dangers.

The introduction of modern effective mechanisms and risk management tools in the areas of construction and management of facilities under conditions of transformational changes in public administration in Ukraine is extremely important.

The system of technical regulation in construction in Ukraine is rapidly developing. The implementation of the current legislation is being implemented, the regulatory framework in the field of construction (construction norms and standards) is being updated, harmonization of national standards with international and European (EN and ISO) is carried out. The renovation of building standards is based on a risk-oriented approach to security. Implementation of the risk-oriented approach is aimed at increasing the level of safety of buildings and structures, that is, reducing the level of social and material risk (for possible consequences) for a person (it's life, health and life) from different kinds of dangers, including the possible destruction of the facility, risk of fire, chemical toxification of a person on facility and outside the facility, etc.

At the level of subordinate acts with the technical nature (building codes), introduced the general principles of ensuring the reliability and constructive safety of buildings and structures, which are differentiated into three classes (CC1 – insignificant consequences, CC2 – average impact, CC3 – significant consequences) based on possible consequences of the risk of their refusals. The indicated principles and classes of consequences (liability) are defined by the state building codes of the DBN B.1.2-14-2009 “General principles of reliability and constructive safety of buildings, structures, constructions and foundations,” developed in accordance with (ISO 2394 “General principles of reliability for structures”). Construction norms also take into account the methodology for estimating the damage from the consequences of man-made and natural-emergencies and the classification of man-made and natural emergencies by their levels.

Differentiation on the basis of the class of consequences is also introduced at the legislative level – the Law of Ukraine “On Regulation of Urban Development” for construction objects: buildings, structures of any purpose, their complexes and parts, linear objects of engineering and transport infrastructure.

The law regulates mandatory and declarative procedures from the planning of development of territories by the objects of city planning, in particular, the integrated location of the main objects of industry, transport, engineering and social infrastructure,

and the design of construction objects before the commissioning of completed construction objects and further their inspection, inspection, certification.

Special attention should be paid to the six indications (characteristics, criteria) of the class of consequences (liability), presented in the form of numerical ranges that meet the criteria of the levels of emergencies regarding the danger to the health and life of people; danger of a violation of the normal life of people who are outside the object; the amount of possible economic damage.

Characteristics of “the possibility of loss of objects of cultural heritage” are taken on the value of an object of cultural heritage (national or local significance) in accordance with the Law of Ukraine “On the Protection of the Cultural Heritage.”⁷

Characteristics of “the possibility of the termination of the functioning of the objects of engineering and transport infrastructure” is taken according to the levels (national, regional or local) of the belongings of such objects to the level of urban planning documentation in accordance with the Law of Ukraine “On regulation of urban development activities.”

Regardless of the above features, the class of consequences (liability) is set not less than CC3 for high-risk objects identified in accordance with the Law of Ukraine “On Hazardous Objects”⁸; for civil protection (civil defense) storage facilities regardless of location, capacity and security class; for high-rise residential and public buildings with a height of more than 100 m.

Conclusion

Ukraine has established legal and technical bases for further systemic formation of legal and technical normative bases in the field of construction, the basis of which is laid the principles of safety and reliability of buildings and structures throughout its life cycle.

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