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LIFE CYCLE MANAGEMENT OF CONSTRUCTION FACILITIES

PUBLIC-PRIVATE PARTNERSHIP AS A TOOL FOR CREATING URBAN INFRASTRUCTURE

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The article discusses the use of public-private and municipal-private partnership mechanisms, as well as the conclusion of concession agreements for the modernization of social infrastructure facilities, including public spaces. Examples of successful management of the park by a private individual and the recently concluded concession agreement between the administration of the Voronezh City District and an investor for the reconstruction of the park are given.

Keywords: concession, public-private partnership, public spaces, social infrastructure

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MATHEMATICAL MODELING OF THE LIFE CYCLE OF BUILDING ENGINEERING SYSTEMS

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Probabilistic life cycle impact analysis, for example, estimating repair costs, downtime, or damage over the life of an object, can ensure optimal lifecycle management of critical facilities under conditions of uncertainty. This allows you to make effective decisions to minimize the cost of restoring the integrity of the building's engineering systems. The article examines the effect of factors on the engineering systems of a building in aggregate. Stochastic Markov process with discrete states and time is used for forecasting.

This makes it possible to estimate the probability of the system being in any performance state after each disturbing event. The concept of the damage coefficient is proposed to increase the accuracy of calculations and reduce the peak efficiency of equipment operation.

Keywords: Markov model, life cycle, engineering systems, heat supply.

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ORGANIZATION OF CONSTRUCTION PRODUCTION TAKING INTO ACCOUNT RISK MANAGEMENT DURING THE LIFE CYCLE OF REAL ESTATE OBJECTS

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This article analyzes the provisions on the methods by which it is possible to assess the risk of investment and construction projects, depending on the stage of the project life cycle. The characteristics of each stage of the life cycle of a real estate project are presented. An algorithm for risk assessment is proposed. The interrelation of risk and the quality of information on the basis of which the risk in investment and construction activities is assessed is revealed.

Keywords: life cycle of the facility, investment project, organization and management of construction, project stages, investment risks, reliability, efficiency

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TECHNOLOGY AND ORGANIZATION OF CONSTRUCTION

RESEARCH OF MODERN CHANGES IN THE ESTIMATED REGULATORY FRAMEWORK, METHODS FOR DETERMINING THE COST OF CONSTRUCTION AND INSTALLATION WORK IN THE EXECUTION OF MUNICIPAL CONTRACTS

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This article is devoted to the consideration of the essence, features, and cost of fulfilling a municipal construction contract, which is the main document for construction and installation works financed from existing municipal budgets. The presented algorithm of methods for determining the estimated cost shows a real smooth transition to the resource index method used, which makes it possible to more accurately calculate the estimated cost of construction in order to verify with the actual data of the work and eliminate disagreements between the participants.

Keywords: construction, municipal contract, construction and installation works, estimated cost, methods of estimating the cost of the CMP

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METHODS OF ASSESSMENT AND MANAGEMENT OF FINANCIAL RISKS IN ORDER TO MAKE EFFECTIVE DECISIONS IN THE PROCESS OF ACTIVITY OF CONSTRUCTION ORGANIZATIONS

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This article draws attention to financial risks and their impact on the activities of construction organizations. It is important to emphasize that it is necessary and necessary to engage in risk assessment, since these events can damage the enterprise itself. In order to choose a strategic action plan and make the right, effective management decisions, it is customary to base on existing financial risk management techniques discussed in this paper.

Keywords: financial risk, organization, risk management methods, risk assessment.

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URBAN PLANNING, PLANNING OF RURAL SETTLEMENTS

USE OF GEOINFORMATION SYSTEMS IN URBAN PLANNING ANALYSIS OF TERRITORIES BY THE EXAMPLE OF DESIGNING AN ETHNOGRAPHIC RESEARCH CENTER

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This article presents the results of urban planning analysis using geoinformation systems. The experience of designing modern research centers in Russia and foreign countries is considered. The potential of the territory for the design of an ethnographic research center is studied using the example of Kazan, Tatarstan. A GIS analysis of the territory under consideration has been carried out. The current situation of educational, social infrastructure and recreational areas at the urban level has been determined. A search was made for a design site, points of attraction, social and transport infrastructure were studied.

Keywords: geographic information systems, urban development analysis, research center.

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THE METHODOLOGY OF A COMPREHENSIVE ANALYSIS OF THE URBAN DEVELOPMENT POTENTIAL OF THE INDUSTRIAL HERITAGE AREAS OF THE "GRAY BELT" OF THE KOMINTERNOVSKY DISTRICT OF VORONEZH

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In this article, the main trends of the redevelopment of the "gray belt" are considered, the prerequisites for the effective use of former industrial and degrading territories are identified, the analysis of the "gray belt" on the territory of the Kominternovsky district of Voronezh is performed, a SWOT analysis of the redevelopment of former industrial territories is carried out.

Keywords: redevelopment, gray belt, urban environment, effective transformation, SWOT analysis of the territory, transformation, sustainable development, infrastructure.

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SYSTEM ANALYSIS, MANAGEMENT AND INFORMATION PROCESSING (IN CONSTRUCTION AND ARCHITECTURE)

IMPROVING THE ACCURACY OF SHORT-TERM LOAD FORECASTING USING ENSEMBLE MODELS AND WEATHER DATA

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Accurate short-term forecasting of electrical load plays a crucial role in efficient energy management and ensuring the stability of power grids. This paper presents an advanced ensemble approach that improves the accuracy of short-term load forecasting by integrating random forest (RF) and histogram-based gradient regression (HGBR). The ensemble method combines the strengths of each algorithm, allowing you to capture complex patterns and interactions in the data. To give practical significance, the model was tested on real data from the energy system of the University of Brescia, Italy, collected using a specialized monitoring system. Additionally, the model included external weather components, in particular, ambient temperature, which significantly improved the accuracy of forecasting. The experimental results show that the proposed ensemble model is significantly superior to individual methods in a number of indicators, achieving higher accuracy and reliability in predicting electrical load. The inclusion of ambient temperature as an external variable demonstrated a significant increase in productivity, which underscores the importance of taking weather factors into account in load forecasting tasks.

Keywords: prediction of electrical load, network stability, ensemble method, machine learning.

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