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Research on Key Points and Management Strategies for the Pre-Approval of Municipal Construction Projects

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Abstract: This article focuses on the pre-approval process of municipal construction projects, elaborating on its covered stages, functional positioning, etc. This paper introduces the key points of planning permission, environmental impact assessment and other links, discusses the innovation of management mechanisms, such as collaborative approval and BIM application, and also involves risk early warning, social stability assessment and other contents. It emphasizes the importance of technical review expert database and other aspects, verifies the effectiveness of management strategies and puts forward suggestions.

Keywords: Municipal construction; Preliminary review application; Management mechanism

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1. Introduction

The pre-approval process for municipal construction projects is a crucial link in the full life cycle management of the projects. Its significance lies in controlling the construction quality from the source, avoiding compliance risks and optimizing resource allocation. The review process covers core contents such as planning permission, land nature change, and environmental impact assessment, and must strictly follow the requirements of the overall urban planning and ecological protection. The current management mechanism is confronted with challenges such as insufficient cross-departmental collaboration and the need to improve approval efficiency. It is urgent to optimize the process by integrating technological innovation with policy guidance. According to the "Notice on Promoting the Standardization, Normalization and Facilitation of the Approval of Engineering Construction Projects" and the "Regulations on the Supervision of the Implementation of Territorial Space Planning", strengthening the application of digital platforms, promoting parallel approval and deferred acceptance systems have become the key points of reform. At the same time, it is necessary to improve the risk early warning and public participation mechanism, and enhance the efficiency of approval with policy support. Lay a solid foundation for the high-quality implementation of municipal construction.

2. Theoretical basis for preliminary approval of municipal construction projects

2.1. Basic process analysis of municipal construction projects

The entire life cycle of municipal construction projects covers multiple stages. From the initiation of the project, the necessity and feasibility of the project should be determined based on the urban development plan and actual needs [1]. In the early decision-making stage, a series of legal bases must be followed, such as relevant urban and rural planning laws, etc., to ensure that the project conforms to the overall development strategy of the city. In terms of administrative procedures, it is necessary to go through the preparation and approval of the project proposal, which elaborates and reviews the general outline of the project, the necessity of construction, etc. Next comes the feasibility study report stage, which requires in-depth analysis of the project in terms of technology, economy, environment and other aspects, including the comparison and selection of different construction plans. At the same time, environmental impact assessment is also a crucial step. It is necessary to evaluate the possible impacts of the project on the surrounding environment and propose corresponding measures. These processes and requirements have laid a theoretical foundation and standardized framework for the pre-approval of municipal construction projects.

2.2. Functional positioning of the pre-approval system

The pre-approval system for municipal construction projects has an important functional positioning. It is a key link in ensuring the quality and efficiency of municipal construction [2]. During the project initiation stage, strict approval can ensure the necessity and feasibility of the project and prevent blind construction from causing waste of resources. Land use planning approval can rationally plan land resources, make municipal construction conform to the overall development layout of the city, and improve land utilization efficiency. Environmental assessment and approval prompt projects to fully consider environmental impacts, take effective measures to reduce pollution, and achieve sustainable development. These pre-approval procedures are interrelated and mutually restrictive, jointly laying a solid foundation for the smooth implementation and high-quality completion of municipal construction projects. They control the direction and quality of municipal construction from the source and play an irreplaceable role in enhancing the comprehensive carrying capacity of the city and the quality of life of residents.

3. The core links of project approval in the early stage

3.1. Key points for the implementation of planning review and approval

In the planning permission stage of the early review of municipal construction projects, the change of land nature is of crucial significance. It is necessary to ensure that the change strictly complies with the requirements of the overall urban planning and relevant land use planning, and conduct a comprehensive assessment by fully considering factors such as the urban development direction, functional zoning and spatial layout. By scientifically analyzing the urban development strategy and regional functional positioning, the necessity and feasibility of changing land use should be reasonably determined to avoid blind adjustments that may lead to resource waste or functional imbalance. In terms of the approval of land use indicators, it is necessary to precisely calculate key indicators such as the area of construction land, green space ratio, floor area ratio, and building density, to ensure that all indicators comply with relevant national and local standards and regulations, while also taking into account the efficiency of urban space utilization and sustainable development goals [3].

For projects involving historical and cultural conservation areas or ecologically sensitive regions, special attention should be paid to the protection requirements of these special areas. They must strictly follow laws and regulations such as the “Urban and Rural Planning Law” and the “Regulations on the Protection of Historical and Cultural Cities, Towns and Villages”, and carry out special reviews. The review content includes assessing

the potential impact of the project on historical and cultural heritage, ecosystems and natural landscapes, and formulating targeted protection measures, such as restricting the construction scope and optimizing the design plan, to ensure that the project construction does not cause damage to cultural inheritance or ecological balance. Through standardized planning permission procedures and rigorous review mechanisms, a compliance foundation is laid for municipal construction projects, maintaining the sustainable development of the city's historical and cultural value and ecological environment.

3.2. Implementation norms for environmental impact assessment

Environmental impact assessment is a core step in the pre-approval process of municipal construction projects, ensuring that project implementation is in harmony with environmental protection. The preparation of environmental impact assessment documents should follow standardized requirements, comprehensively assess the potential impact of the project on environmental elements such as the atmosphere, water bodies, soil, noise and ecosystems, and ensure that the content is detailed and accurate based on scientific investigation and data analysis [4]. Advanced monitoring technologies and modeling methods should be adopted to accurately predict the environmental effects during the project construction and operation phases and identify key influencing factors. The public participation mechanism is an indispensable component of environmental impact assessment. Public opinions should be widely collected through various channels such as public hearings, questionnaires, and online public announcements to ensure the public's right to know and participate in the environmental impact of the project and enhance the transparency of decision-making. Environmental risk pre-assessment is equally crucial. It is necessary to systematically identify potential risk sources, such as pollutant emissions and ecological damage, analyze their occurrence probability and impact degree, and construct a risk assessment model. Based on the assessment results, targeted risk prevention and emergency measures should be formulated, such as optimizing construction techniques and setting up pollution control facilities, to ensure that environmental impacts are kept within an acceptable range. Through rigorous environmental impact assessment processes and scientific risk management, we provide environmental compliance guarantees for municipal construction projects, promoting a balance between ecological protection and urban development.

3.3. Special considerations in the preliminary approval of grassroots urban construction projects

3.3.1. Grassroots-level implementation of public participation

Grassroots projects are directly related to residents' daily lives, necessitating a shift from traditional public hearing and announcement methods to a more community-level, "on-the-ground" approach to communication. In collaboration with neighborhood committees, household visits and building-level meetings should be organized to focus on specific issues such as parking space planning and construction timing. A Summary of Residents' Opinions should be compiled and included as an attachment to the approval submission to prevent conflicts arising from public opposition at later stages. During the announcement phase, materials should be published simultaneously on community bulletin boards and WeChat groups, using plain language accompanied by illustrative diagrams. In communities with a higher proportion of residents aged 60 and above, dedicated personnel should be arranged to provide on-site explanations to ensure effective communication and feedback collection.

3.3.2. Hierarchical adaptation of departmental coordination

Grassroots units lack approval authority and must efficiently coordinate with district-level departments such as housing and urban-rural development, urban management, and environmental protection. A street-to-district approval liaison list should be established, specifying responsible offices, contacts, and material standards for

each approval step to avoid repeated revisions due to formatting issues. For matters requiring multi-department approval, the "whistle-blowing and reporting" mechanism should be utilized to initiate joint site inspections and form a Joint Approval Opinion Form, thereby reducing cross-departmental communication time and ensuring the smooth progress of projects such as community fitness paths and renovation of old facilities.

3.3.3. Streamlined adaptation of material preparation

Given the limited technical capacity at the grassroots level, approval materials should adhere to the principle of "less but finer". A checklist of materials categorized into "required" and "optional" items should be created, with exemptions granted for non-core materials in projects under 500 square meters. Streets should develop a Self-Checklist for Grassroots Approval Materials, focusing on verifying the authenticity of materials, alignment with overarching plans, and completeness of risk disclosures. This ensures that submission materials comply with regulations while reducing the burden on grassroots units and improving efficiency.

3.3.4. Livelihood-oriented risk prevention and control

Grassroots projects are prone to public sentiment risks related to construction disturbances and travel safety, necessitating pre-emptive risk assessment during the approval phase. A list of public opinion risks and corresponding response plans should be developed, with designated street contacts ensuring a 24-hour response mechanism. For projects involving historical buildings or ancient trees, cultural heritage departments must be engaged in advance for on-site verification and the issuance of an Avoidance and Protection Opinion to prevent approval rejection due to oversight of protected elements. This ensures both regulatory compliance and social stability.

4. Research on innovation of the review and approval management mechanism

4.1. Cross-departmental collaborative management mechanism

4.1.1. Integration of responsibilities of the approval department

In the innovation of the pre-approval management mechanism for municipal construction projects, it is crucial to establish a responsibility matrix model for collaborative approval among functional departments such as development and reform, housing and urban-rural development, and environmental protection. It is necessary to clarify the boundaries of responsibilities and collaboration mechanisms of each department to avoid delays in approval due to unclear responsibilities. The development and reform department is responsible for approving the feasibility study reports of projects, with a focus on reviewing whether the projects are in line with regional development plans and industrial policies to ensure strategic consistency. The housing and urban-rural development department focuses on reviewing the planning and design schemes, verifying their compliance with urban construction standards, spatial layout and technical specifications, and ensuring the quality of project implementation. The environmental protection department strictly controls the environmental impact assessment, evaluates the potential impact of the project on the ecological environment, formulates pollution prevention and control measures, and prevents adverse environmental consequences [5]. By establishing a responsibility matrix model, the approval tasks and connection processes of each department are clearly defined, and cross-departmental information sharing and collaborative decision-making are strengthened. Adopt digital management tools, integrate approval data, optimize process connections, and reduce repetitive review and communication costs. This mechanism not only enhances the efficiency of approval but also increases the transparency and standardization of decision-making, providing institutional guarantees for the efficient advancement of municipal construction projects and promoting the scientific and coordinated nature of the project's entire life cycle management.

4.1.2. Construction of a digital approval platform

In the innovation of the pre-approval management mechanism for municipal construction projects, it is particularly crucial to establish a responsibility matrix model for collaborative approval among functional departments such as development and reform, housing and urban-rural development, and environmental protection.

It is necessary to clarify the boundaries of responsibilities and collaboration mechanisms of each department to eliminate approval delays caused by overlapping or ambiguous responsibilities. The development and reform department is responsible for approving the feasibility study reports of projects, with a focus on reviewing whether the projects comply with regional development plans and industrial policies to ensure consistency with the city's strategic goals [6]. The housing and urban-rural development department focuses on reviewing the planning and design schemes to verify whether they meet the urban construction standards, spatial layout requirements and technical specifications, ensuring the high-quality implementation of the projects. The environmental protection department strictly controls the environmental impact assessment, systematically evaluates the potential impact of the project on the ecological environment, and proposes effective pollution prevention and control as well as ecological protection measures to prevent environmental risks.

Through the responsibility matrix model, the approval tasks and process connections of each department are clearly defined, optimizing the efficiency of cross-departmental collaboration. Relying on digital management tools, approval data is integrated to achieve real-time information sharing, reduce repetitive review and communication costs, and enhance the transparency and standardization of processes. This mechanism significantly enhances the efficiency of approval, strengthens the scientific nature of decision-making, provides a solid institutional guarantee for the efficient advancement of municipal construction projects, and promotes the coordination and sustainable development of the entire life cycle management of projects.

4.2. Full-process standardized design

4.2.1. List-based management of approval requirements

Establishing a standardized template system for review materials classified and graded is an important measure for the list-based management of approval requirements. In view of the complexity and diversity of the preliminary review of municipal construction projects, by scientifically and reasonably classifying and grading the review materials, the efficiency and quality of the review can be improved [7]. Firstly, projects are classified based on factors such as their scale, nature, and investment amount. Different levels of projects are subject to different review standards and procedures. Secondly, classify the materials for review according to their categories, such as planning permission type, environmental assessment type, engineering design type, etc., and clearly define the specific requirements and format norms for each type of material. In this way, the units applying for review can clearly understand the content and standards of the materials that need to be prepared, and the approval departments can also conduct reviews more conveniently, reducing approval delays caused by non-standard or missing materials, thereby optimizing the management mechanism for the early review of municipal construction projects.

4.2.2. Dynamic adjustment mechanism for time limit control

The approval progress control model based on the critical path method is an important part of the innovation of the approval management mechanism for municipal construction projects. This model effectively controls the approval progress by analyzing various activities in the project approval process, determining the critical path and key activities. During the model construction process, it is necessary to fully consider the characteristics of municipal construction projects and the complexity of the approval process, and reasonably determine the time parameters and logical relationships of each activity. At the same time, a dynamic adjustment mechanism should

be established. According to the actual progress of the project and changes in the external environment, the critical path and time parameters should be adjusted in a timely manner to ensure that the approval progress is always under control. By applying this model, the efficiency and quality of the approval management for municipal construction projects can be enhanced, the approval time and cost can be reduced, and a strong guarantee can be provided for the smooth implementation of the projects [8].

5. Optimization of the whole-process management strategy

5.1. Risk prevention and control strategies

5.1.1. Legal risk identification framework

The three-level risk early warning index system for administrative licensing compliance review is of vital importance to municipal construction projects. It is necessary to clearly define the first-level indicators, covering core contents such as the qualifications of the project entity and the completeness of the application materials. The qualification of the main body is directly related to the legality of project implementation. Any absence or non-compliance with qualifications may lead to the stagnation of the project. The completeness of the materials submitted for review is a prerequisite for ensuring a smooth administrative licensing process and must be strictly verified. The second and third-level indicators have been further refined.

Under the first-level indicators, the subject qualifications can be decomposed into specific requirements such as the validity period of the business license of the enterprise and the industry qualification level. The completeness of the review materials involves the standardization of the special report, the accuracy of the data and the compliance of the format. The third-level indicators are more specific, such as the matching degree between the business scope of the business license and the project requirements, and the technical depth of the environmental impact assessment report, etc. By establishing a three-level indicator system, the system identifies legal risks in the early review process, covering a comprehensive assessment from macro compliance to micro details [9]. This system provides a scientific basis for risk prevention and control by quantifying risk points and establishing early warning thresholds, ensuring the legal and compliant advancement OFL projects and laying a solid foundation for the efficient implementation of municipal construction.

5.1.2. Public opinion response plan

The disposal process for social stability risk assessment of major municipal projects is crucial for ensuring the smooth implementation of the projects. During the risk assessment stage, it is necessary to comprehensively analyze the potential impacts of the project on the surrounding environment, residents' lives, transportation, and social economy, etc. Scientific methods such as social impact assessment models should be adopted for quantitative analysis to accurately identify risk points. Once potential risks are identified, targeted prevention and control measures should be formulated immediately, including optimizing construction plans and strengthening environmental protection. For issues that may trigger public opinion, a real-time monitoring and early warning mechanism should be established, and big data and public opinion analysis tools should be utilized to track public attitudes and media dynamics [10]. When public opinion occurs, a prompt response is necessary. Accurate and transparent information should be released in a timely manner through official channels to address public concerns, clarify false rumors, and prevent social unrest caused by information asymmetry. At the same time, actively carry out public communication, widely collect opinions through forms such as symposiums and questionnaires, incorporate reasonable demands into the project optimization plan, and enhance public participation and satisfaction. This mechanism ensures that the project takes into account both social stability and public interests during its advancement, effectively reduces public opinion risks, and provides a guarantee for the efficient

implementation of municipal construction projects and the harmonious development of the city.

5.2. Quality control strategy

5.2.1. Construction of the technical review expert database

To ensure the scientific and accurate nature of the preliminary review of municipal construction projects, it is of vital importance to establish a high-quality technical review expert database. It is necessary to take multiple approaches to clarify the selection criteria for experts, which should cover dimensions such as professional knowledge, practical experience, and professional ethics. In terms of professional knowledge, it is required that experts have in-depth attainments in related fields of municipal engineering, such as roads, bridges, water supply and drainage, etc. In terms of practical experience, one needs to have a certain number of years of actual project participation experience. At the same time, the professional ethics of experts should be emphasized to ensure that they can conduct reviews impartially and objectively. In the management of the expert database, a dynamic update mechanism should be established to regularly assess and evaluate experts, eliminate those who do not meet the standards, and replenish fresh blood. It is also necessary to improve the information management system of the expert database to facilitate the query, invocation and maintenance of expert information, thereby providing strong technical support for the pre-approval of municipal construction projects.

5.2.2. Full-process document traceability system

In municipal construction projects, establishing an approval process traceability management platform based on blockchain technology is important for the optimization of the entire process management strategy, quality control strategy, and the entire process document traceability system. The immutable feature of blockchain ensures that information at every stage of the approval process can be accurately and completely recorded. From the submission of project planning and design schemes to the feedback of approval opinions from various departments, all information is recorded in real time on the blockchain. This not only facilitates the project participants to check the approval progress and related documents at any time, but also provides reliable data support for quality control. Through detailed traceability of the approval process, potential problems can be identified in a timely manner, such as design modifications that do not comply with standards and unreasonable approval opinions, and corresponding measures can be taken to correct them, ensuring the smooth progress of municipal construction projects.

5.3. Efficiency improvement strategies

5.3.1. Innovation in the parallel approval model

In the early approval process of municipal construction projects, the development of an intelligent approval system architecture design that integrates multiple certificates is the key to the innovation of the parallel approval mode. The system should integrate the approval processes and standards of different departments to achieve information sharing and collaborative work. Through intelligent technologies, key information in the materials submitted for review can be automatically identified and extracted to enhance the efficiency of approval. Meanwhile, the system can set up an early warning mechanism to monitor the approval progress in real time and promptly identify and solve problems. In addition, a unified approval database should be established to store and manage the relevant information of all submitted projects, providing support for subsequent statistical analysis and decision-making. Such an intelligent approval system will effectively break down departmental barriers, simplify approval procedures, and enhance the management level and efficiency of the pre-approval process for municipal construction projects.

5.3.2. Optimization of the deferred acceptance system

Formulating detailed implementation rules for the supplementary commitment system of non-critical materials is an important measure to optimize the deferred acceptance system. First, it is necessary to clarify the scope of non-critical materials, which can be determined by assessing the importance and urgency of the materials submitted for review in the early stage of municipal construction projects. For these non-critical materials, a detailed supplementary commitment template should be formulated, including the time limit for supplementary submission, the responsible party, and the corresponding liability for breach of contract, etc. At the same time, an effective supervision mechanism should be established to ensure that commitments are truly fulfilled. During the implementation process, it is necessary to strengthen the guidance to the project units to ensure they fully understand the procedures and requirements of the supplementary commitment system. In addition, the implementation effect of the post-commitment system should be regularly evaluated and summarized. Relevant detailed rules should be continuously adjusted and improved based on the actual situation to enhance the efficiency and quality of the pre-approval process for municipal construction projects.

6. Conclusion

The pre-approval work for municipal construction projects is of vital importance, involving multiple key points and effective management strategies. Through the study of typical cases, the practical effectiveness of the constructed management strategy system has been verified, including shortening the approval cycle and reducing compliance risks, which provides a strong guarantee for the smooth progress of the project. On this basis, policy suggestions for establishing a credit evaluation system for the pre-approval of municipal construction projects are put forward, which is conducive to further standardizing the approval process and enhancing the sense of responsibility of relevant entities. Meanwhile, looking forward to the application and development direction of artificial intelligence-assisted decision-making in approval management, this may bring higher efficiency and accuracy to the pre-approval work of municipal construction projects, and promote the better development of the municipal construction industry.

Disclosure statement

The author declares no conflict of interest.

References

[1] Pei Y, 2023, Research on Municipal Construction and Management in Handan During the War of Liberation (1945–1949), thesis, Hebei Normal University.

[2] Wang D, 2022, Research on the Municipal Construction of the British Concession Along the Yangtze River in Modern Times and Its Associated Impacts (1861–1929), thesis, Huazhong University of Science and Technology.

[3] Li Y, 2021, Research on Municipal Construction in Jiangxi Province During Xiong Shihui's Supervision Period (1931–1941), thesis, Jiangxi Normal University.

[4] Liu M, 2023, Research on Customer Service Management Strategies for Retail Business of Bank A, thesis, Southwestern University of Finance and Economics.

[5] Hu Z, 2022, Research on Network Information Security Management Strategies of Smart Grid, thesis, University of Chinese Academy of Sciences.

[6] Liu J, 2018, Research on Municipal Construction and Municipal Management. Ancient and Modern Legends:

Cultural Review, 8(5): 1.

[7] Chen H, 2019, Dilemmas and Improvement Measures of Municipal Construction Management in the New Era. Happy Life Guide, 2019(49): 87.

[8] Li K, 2021, Problems and Solutions in Municipal Construction Management. Management and Technology of Small and Medium-sized Enterprises, 2021(12): 25–26.

[9] Jiang X, Fang X, Wei X, 2021, A Brief Analysis of the Dilemma and Improvement Measures of Municipal Construction Management in the New Era. China Real Estate Industry, 2021(35): 148–149.

[10] Liu C, 2023, A Brief Discussion on Strengthening Municipal Archives Management in Municipal Construction. Lan Tai Wai Wai, 2023(29): 55–57.