

Study on the Driving Factors of Organizational Resilience of Assembled Building Construction Enterprises

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Abstract: Based on the perspective of building construction enterprises, this paper analyzes the advantages faced by them in developing the assembly construction industry, arguing that the advantages that exist include brand advantages, policy advantages, and industry chain integration advantages, and that among the participating parties in each link of assembly construction, not only do they need to obtain information from other collaborating parties, but also provide information to other collaborating parties, and a large and complex information flow is formed within the supply chain. Finally, it proposes corresponding countermeasures to the organizational resilience of building construction enterprises in developing assembled buildings, developing assembled buildings in the form of equity participation, seriously doing market research, and strengthening the tracking and research of government policies.

1. Introduction

1.1. Background of the Selected Topic

"The 19th National Congress pointed out that we should comprehensively promote green ecological development, improve the level of "Made in China and Built in China", and promote the green and sustainable development of the construction industry with green building and assembled building as the important carrier, and the organizational toughness of assembled building construction enterprises. Become the trend of the construction industry. However, China's development in this area has not yet been synchronized, and there is a lack of capacity in various technologies, a certain gap in the demand for talents, and imperfect supervision and management mechanisms, which makes it easy to lay more quality hazards in the construction process^[1]. In terms of quality management, it brings certain challenges, mainly the following: according to the current development situation, the overall development of prefabricated components production enterprises is not optimistic, there is a blind expansion of production scale, vicious competition fierce problems, resulting in low prices of prefabricated components away, bringing quality and safety risks^[1], the main difference between assembled building projects and traditional construction projects compared to the prefabricated production of components and building Assembly

construction^[2], as the basic components of the assembled building, the advantages and disadvantages of prefabricated components will have a serious impact on the project schedule, safety, quality and other aspects.

Traditional construction enterprises need to effectively change their concepts, take the new construction industrialization as the guide, complete the transformation and upgrading and strategic design as soon as possible, fully benchmark with the industry leaders, accelerate the introduction and training of professional talents, and complete the necessary technical accumulation and resource preparation^[3].

For construction enterprises, there are uncontrollable factors in the quality of prefabricated components, and in order to avoid risks as much as possible, the prefabricated component suppliers should be managed. Secondly, the assembled construction method adds a large number of complex operations such as mechanical lifting, aerial construction, node connection, etc. The connection is more precise and the technical requirements are more strictly, which has higher requirements for the business quality ability of field workers.

1.2. Significance of the Selected Topic

The development of assembled construction method in foreign countries has been in a more mature stage. In China, because it has been developed well in recent years, the quality management ability of most construction enterprises has not been improved accordingly, and there is a lack of construction quality management standard specification system, and there are problems in the quality management process of the work site. The main strategy to strengthen the management of assembly construction projects puts forward a new management concept and regulatory system, emphasizing its dynamic all-round management in construction projects and for the enhancement of construction solutions^[4]. The quality management ability of construction enterprises directly affects the quality of construction products, and the improvement of quality management ability can lead to the improvement of construction product quality, so this paper uses this research to build the toughness management of assembled buildings, in order to be able to guide construction enterprises to evaluate and improve their own quality management ability, and then determine the overall quality.

After fully studying the evaluation elements of assembly building construction enterprises under the perspective of sustainable development, the evaluation indexes were integrated with the actual engineering construction experience and expert opinions in the field of assembly building^[5]. In recent years, the national level and more than 30 provinces and cities have proposed various policies for the development of assembled buildings. With the continuous improvement of various policies, standards and technical systems, assembled buildings will enter a period of rapid development in China. Relative to traditional buildings, assembled buildings have the advantages of high construction efficiency, fast construction speed, good quality of finished products and high safety performance, overcoming the shortcomings of traditional construction methods such as long construction period, low production efficiency and slow construction speed. Therefore, the organization and management of assembly building construction enterprises is getting more and more attention from the industry, and it has become a new direction for the transformation and upgrading of enterprises and the development of new construction industry.

2. The Current Situation of the Development of Assembled Building Construction Enterprises

2.1. The Development Status of Traditional Construction Enterprises

There are obvious differences in concept, mode, technology and management between the new

construction industrialization and the traditional construction industry. There are defects in the technical research of assembled building construction in node connection, installation deviation, finished product maintenance, enclosure sealing, seismic resistance, etc., resulting in the rejection of assembled building construction by some owners and even construction enterprises [6].

In terms of human concept with the advent of the global era of intelligence and the acceleration of China's industrialization and urbanization process, from the source designers, construction personnel to the production workers of the component factories, etc., need to change their concepts from the traditional construction mode as soon as possible and strengthen the learning and training of new knowledge and skills of building industrialization.

2.2. The Development Status of Assembled Building Construction Enterprises

Assembly-type construction also started early in China, as early as 1950 China carried out the process of industrialization of construction and industrialization of component production. From the development history, the development of assembled construction in China can be roughly divided into three stages: primary, trough, and prosperity [7]. There are phenomena such as waste in the use of construction energy and materials by existing assembly building construction enterprises, while the shortage of labor resources can also weaken the productivity of enterprises. Through management system innovation and technological innovation, scientific planning of the use of non-renewable resources, promoting the updating and iteration of advanced assembly production technology, and reducing the reliance on labor, the long-term competitive advantage of assembly building construction enterprises can be enhanced, and assembly building construction enterprises can gain a long-term foothold in the market. The large-scale use of assembled building structure systems in government-led construction of affordable housing gradually promotes the formation of economies of scale in assembled construction [8].

At present, most of the assembly building construction enterprises in China still follow the traditional management mode, construction methods and development concepts, which are extremely inconsistent with the sustainable development goals required by national planning and are not conducive to the development of the enterprises themselves. Therefore, a scientific and fair evaluation of assembly building construction enterprises from the perspective of sustainable development can be used as a basis for selecting construction enterprises, and then targeting to improve the core competitiveness of assembly building construction enterprises. The problem of selecting construction enterprises for assembled buildings boils down to the selection of construction contractors, which has been studied in depth at home and abroad.

3. Analysis of Organizational Toughness Strategy of Assembled Building Construction Enterprises

In the traditional construction field, the construction period of building projects is long and the efficiency is low, in addition, the construction materials are piled up at the construction site, which causes huge loss of cost. During the continuous development of the construction industry, the assembled construction gradually appears.

The high cost of assembled buildings is due to policy, operatives, materials and other factors, therefore, the actual production phase of prefabricated components can seriously affect the cost, control the problems derived from it, so as to reduce costs and at the same time make it a normative element of the component production structure, and promote the continuous progress and development of assembled buildings in the country [9]. However, due to the lack of perfect development of assembled buildings, there are still many problems in its engineering construction process. Improving the supply chain risk management capability is a systematic project, and in

order to create a resilient supply chain that can cope with unexpected events, the correlations and structures among the factors affecting the supply chain resilience must be dissected in a holistic manner ^[10]. The rapid development of the assembled construction supply chain cannot be achieved without the cooperation and coordination among the supply chain participants ^[11].

Therefore, the thesis analyzes the management of assembled building construction enterprises in three detailed aspects: the management concept of assembled building construction enterprises, the information-based supervision and examination system, and the management level of assembled building construction enterprises, respectively.

3.1. Innovative Management Concept of Assembly Building Construction Enterprise

During the construction process of assembly building projects, we should try to abandon the traditional management concept and innovate our thinking according to the current development and needs of the construction industry. In terms of improving resilience, the general contractor should quickly redeploy logistics solutions after a break in the supply chain to ensure that the delivery method and delivery speed of the supply chain logistics chain meet the supply demand ^[12].

First of all, the project management department and relevant personnel should fully understand the importance of project management, go deep into the project process and be familiar with the overall management process. The problems encountered in construction should be analyzed and solution measures should be put forward in a timely and serious manner, and the responsibility system for each link should be implemented. Second, do a good job of supervision and management of the construction site, timely stop and correct the irregularities of the construction site, improve the quality of project management.

3.2. Improve the Management Awareness of Management Personnel

As a new concept and a new way in the field of construction, its development in all aspects is at a primary level, therefore, relatively speaking, assembled construction projects are more complex and require strong management consciousness of project managers. Few studies have been conducted specifically on collaborative supply chain management of assembled buildings, and the mechanism of collaborative supply chain management of assembled buildings is not perfect, resulting in low efficiency of collaborative supply chain management ^[13]. However, in the current development stage, the management consciousness of each project management personnel in assembly building engineering is weak, and in its construction management process, the focus of project management and the methods of management for assembly building engineering do not conform to its development mode and actual needs, and its management method still adopts the engineering management method of traditional construction, which leads to the poor effect of assembly building in the specific construction process.

3.3. Realization of Information-based Supervision System

In today's rapid development of information and networking, efficient management of assembly-type construction projects in construction enterprises is inseparable from the management mode and system of information. Through this system, professionals are set up to supervise and examine the entire project cycle, including the entire construction process, material procurement, personnel deployment, project settlement, and financial income and expenditure, using modern management techniques and means. By timely discovering the problems and loopholes in each link, putting forward opinions and improvement directions, and formulating reasonable performance assessment, the professional quality, management level and technical ability of managers and

construction personnel are improved to optimize the management of assembly building projects.

3.4. Improve the Management Level of Assembly Building Construction Enterprises

In engineering project management, due to its own systemic nature and the complexity and diversity of the construction environment, it is usually affected by various different factors, therefore, a perfect project management system needs to be developed to ensure the fluidity of the project construction process. Managers should establish targeted management objectives and management plans based on advanced assembly management concepts and supervision systems, strengthen communication and exchange among construction departments and units in the management process, continuously improve management contents and plans, and then enhance the overall level.

4. Analysis of Precautions for Assembled Building Construction Enterprises

With the rapid development of China's economy, the development space of building construction projects has become more and more extensive, and at the same time, as people's living standards improve, people's requirements for construction quality and technology are also getting higher and higher. With its standardized design and centralized production method, assembled construction is favored by people from all walks of life and gradually develops into a new type of construction method.

4.1. Control the Assembly Construction of Corner Panels

In the process of assembled building construction, the assembly of corner plates has a large difficulty factor and is prone to breakage. Therefore, in the construction processing of specific corner plates, strict attention should be paid to the phenomenon of folding back inward on both sides to prevent breakage as much as possible, which will affect the construction progress and waste resources. Unlike traditional buildings, the components of assembled buildings are produced by the factory and transported directly to the construction site for use, saving the time for making components on site and shortening the construction cycle^[14]. After completing the construction, it is also necessary to pay attention to its subsequent maintenance treatment, focusing on controlling its angle so as not to affect obvious quality problems. Finally, attention should also be paid to the relevant connection parts around the corner panels to ensure their compactness and strengthen the integrity of the overall structure.

4.2. Pay Attention to the Construction of Exterior Wall Panel Insulation Layer

In the construction of the exterior wall panel insulation layer, the construction quality should be strictly controlled to prevent the phenomenon of fracture or shedding. Therefore, it is necessary to strengthen the unity and coordination between the external decorative surface, the insulation layer and the structural layer, and enhance the compactness and tightness between the corresponding external wall panel insulation layer, which helps to improve its stability, and then improve the construction level of the assembly building as a whole.

4.3. Ensure the Fullness of Grouting

After completing the prefabricated components, attention should be paid to the corresponding grouting construction. If there is not enough fullness in grouting, it has a greater impact on the

corresponding structural integrity and is very prone to the threat of quality defects. There are various reasons for the lack of fullness of grouting, for example, the lack of good hole cleaning in the production of prefabricated elements in the early stage, which leads to too many internal impurities and affects the overall fullness.

5. Conclusion

This paper discusses the main strategies to strengthen the organizational management of assembly building construction enterprises, and proposes a new management concept and regulatory system. With the various policies put forward by cities and towns on environmental protection requirements in the process of urban construction, assembly building construction technology has become a new trend in the industrialized development of the construction industry. As an emerging construction method, the organizational toughness of assembly building construction enterprises has many advantages that are incomparable to traditional construction, but there are also defects and shortcomings in the development of assembly building construction. Therefore, in the stage of rapid development of the emerging construction industrialization, traditional construction enterprises should change the concept of industry development and ideas, increase the investment of human, financial and material to study and promote the development of assembled buildings, to provide modern people with comfortable and safe, green and environmentally friendly intelligent living space, and promote the continuous development of the construction industry.

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