

Research on The Development Mechanism of Prefabricated Building Industry Chain

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Abstract. With the acceleration of urbanization in China, the shortcomings of traditional construction methods are becoming more and more obvious. Under the situation of increasingly tight natural resources, low-cost, low-pollution prefabricated buildings are more in line with the concept of sustainable development in my country. As a product of aggregation, the industrial chain can provide convenience for the development of prefabricated buildings, but the current research on the industrial chain of prefabricated buildings lacks the perspective of sustainable construction. This paper analyzes the research of domestic and foreign scholars by combining the prefabricated building with the industrial chain, and studies the governance mechanism of the prefabricated building industry chain from the perspective of sustainable development. Promote the healthy development of the prefabricated construction industry chain and drive the development of the national economy.

Keywords: Prefabricated building; Industrial chain; Development mechanism.

1. The background of China's development of prefabricated buildings

China's future development plan points out: "It is necessary to speed up the establishment of a green and low-carbon economic system, change the traditional building construction method, and promote the transformation and upgrading of the construction industry." The construction process of prefabricated buildings draws on the assembly-line production and manufacturing mode of parts and components in industry and manufacturing [1]. The greening feature just caters to the changing trend of the construction industry [2].

China's traditional construction industry has obvious advantages. The development of the prefabricated construction industry can release its own advantages, and promote the common development of upstream and downstream industries such as industrial construction and development, chemical assembly manufacturing, logistics and transportation, and construction, forming an industrial chain and promoting China's economic growth [3]. However, compared with traditional buildings, the construction process of prefabricated chemical buildings has the characteristics of a large number of participating subjects, a high degree of specialization, and difficulty in communication and coordination. It requires mutual cooperation and cooperation among all subjects in order to exert the overall effect [4]. Therefore, it is necessary to form a complete industrial chain of prefabricated chemical buildings in Jilin city, it is necessary to build an effective development mechanism.

2. The necessity of the development of the prefabricated construction industry chain

The degree of urbanization in my country is gradually deepening, and the construction industry has made great contributions to my country's social progress and economic development, but its negative impact cannot be underestimated [5]. A large amount of land, water and electricity resources are consumed and used, and the environment is also polluted and damaged by the development of cities. Under the situation of increasingly tight natural resources, the transformation of construction methods is imminent. Compared with traditional buildings, prefabricated buildings have lower energy consumption and less pollution, and the recycling of construction waste and waste is highly consistent with my country's sustainable concept. Therefore, we can build an industrial chain that integrates the

advantages of related industries and enterprises to promote the development of prefabricated buildings, thereby promoting the economic development of the region.

This paper makes some adjustments to the traditional prefabricated buildings through the research on the prefabricated building industry chain, so that it can conform to the concept of sustainable development in my country, so that the new prefabricated buildings in China can continue to develop [6]. From the perspective of sustainable construction, the development prospects of prefabricated buildings are broader and more in line with my country's existing development concepts. Therefore, the traditional prefabricated buildings are improved, and the development mechanism of the prefabricated building industry chain from the perspective of sustainable construction is studied [7].

The sustainable development of prefabricated buildings can greatly reduce the pollution problems caused by construction, protect the environment and reduce the waste of materials, which is in line with my country's national conditions and saves costs for enterprises. China's prefabricated buildings started late, and most areas are still in the initial stage [8]. Under the rapid development of the domestic construction industry, the technology and management of prefabricated buildings are in urgent need of improvement. If the prefabricated building industry is to develop sustainably, it is particularly important to build a prefabricated construction industry chain. By analyzing the concept, content, formation conditions and action mechanism of prefabricated buildings from the perspective of sustainable construction, the development mechanism of the prefabricated building industry chain is studied, and a sustainable prefabricated building industry chain is found.

3. Construction content of prefabricated construction industry chain

The definition of the prefabricated construction industry chain from the perspective of sustainable construction does not fully conform to the current general situation of the prefabricated construction industry chain, and there are certain differences between the two [9]. The traditional prefabricated construction industry chain is a dynamic value-added industrial organization chain with synergistic effect formed with prefabricated buildings as the final product and the goal of maximizing profits. The upstream of the industrial chain is to provide investment, technical consultation, design and planning in the process of prefabricated construction to the midstream; the midstream of the industrial chain is responsible for the production of prefabricated construction projects based on the information and resources provided by the upstream, and the components required by the downstream are placed in the midstream. It is pre-produced in the factory and then shipped to the construction site for installation; the downstream of the industrial chain conducts sales and service links based on upstream resources and planning and midstream factory construction, the main contents include sales and property management, that is, operation and maintenance. The work after the period is also completed by the downstream industry chain [10].

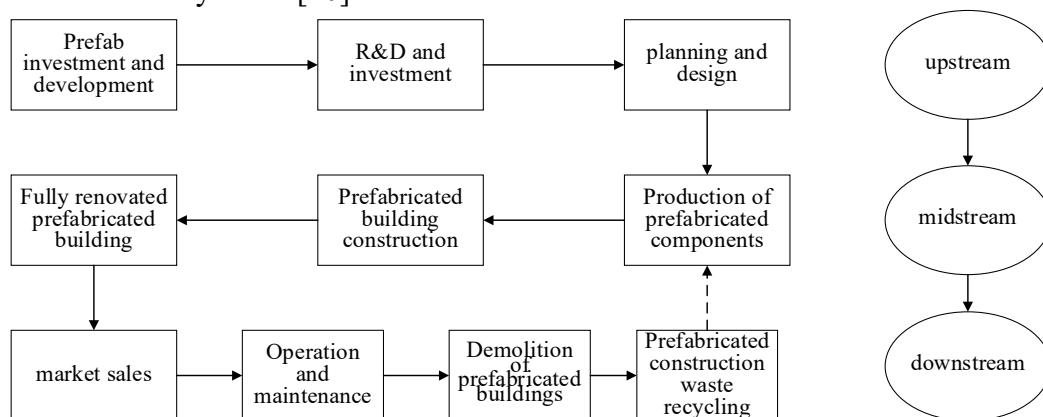


Figure 1. Schematic diagram of the construction of the prefabricated building industry chain

The prefabricated building industry chain consists of investment and development of prefabricated buildings, technology research and development and consultation, planning and design, production

of prefabricated components, prefabricated construction, decoration, marketing, operation and maintenance, demolition of prefabricated buildings, and recycling of construction waste and waste. Processing and other node components. Integrate the advantages of related industries and enterprises into the prefabricated construction industry chain, link the nodes of the industry chain, and interact and closely connect with each other to generate a strong synergy effect, so as to maximize environmental, social and economic benefits. The schematic diagram of the construction of the prefabricated construction industry chain is shown in Figure 1.

According to the different division of labor, the main enterprise of each node occupies a very important position in the industrial chain. Through continuous communication and running-in in each link, the prefabricated construction industry will gradually develop into a highly unified, collaborative and integrated industrial chain. In this process, each subject in the industrial chain has a clear task, performs its own duties, and plays an irrevocable role.

The prefabricated building industry chain is a dynamic value-added industry chain gradually formed after meeting certain conditions due to the division of labor and cooperation between different functional entities. Through the study of existing literature and the research on the formation conditions of the prefabricated building industry chain by other scholars, it is found that the formation conditions of the prefabricated building industry chain from the perspective of sustainable construction can be divided into three points: market demand for prefabricated buildings, production conditions satisfaction and willingness to collaborate.

4. Development mechanism of prefabricated construction industry chain

Compared with the simple relationship between traditional construction enterprises, the prefabricated construction industry chain involves many enterprises, more complex types, more links, and more complex production activities. A large number of resources lead to the formation of a large amount of information during the operation of the industrial chain, and the time span. Therefore, it is particularly important to manage the industrial chain so that it can run efficiently and smoothly. In addition, the development of my country's industrial chain is not perfect and is still in its infancy, so the regulatory mechanism cannot be ignored. So, in order for the industrial chain to run smoothly, it is necessary to form a reasonable and efficient upstream and downstream cooperation system to promote the development of the industrial chain.

There are many companies involved in the prefabricated construction industry chain, and the links are complex, and an efficient communication and coordination mechanism can make the industry chain project go smoothly, and it can be completed and put into use as soon as possible to maximize benefits. Therefore, we need to build a communication and coordination mechanism that facilitates the cooperation between enterprises and enhance the trust between cooperative enterprises. When it comes to transaction relations, trust is the most basic. opportunities to solve problems through negotiation and avoid increasing time costs; establish a professional negotiation mechanism, and companies that trust each other can solve problems through direct dialogue. If the trust between the two companies is not enough, you can Three-party intervention to solve the problem. When the problem cannot be solved in the usual way, it can be solved through negotiation as soon as possible. While maintaining a good cooperative relationship, it can also create a harmonious cooperation atmosphere within the industry chain, and will not delay the project for too long.

The use of information integration systems in prefabricated buildings in my country already has a certain research and practice foundation, and it can also add information at any time during project construction, and the integrity and openness of information make the communication between upstream and downstream of the industrial chain extremely convenient. It enables cooperative enterprises to keep abreast of each other's dynamics and avoid unnecessary troubles. The integrated information system makes it easier for enterprises to identify and select information. After the entire industry chain starts running, it can keep track of the project dynamics, and it is not necessary to delay the project and increase the cost due to the lack of information.

The reuse of construction waste can be carried out according to the management strategy of construction waste. First, the generation of construction waste or waste can be reduced, which is the most prioritized strategy because it has the greatest impact on reducing construction waste and waste. The measures are: control during the construction planning and design stage, minimize the generation of garbage, and strengthen the management of the site during the construction process. Second, it can be recycled, but this method has the premise that such waste is often a recyclable material. Materials that cannot be recycled can be recycled and turned into feedstock for other products or used for other purposes. If none of the above methods can deal with the waste, then it can be properly landfilled or stacked after certain treatment to avoid pollution to water, soil, air, etc.

5. Conclusion

Through the research on the development mechanism of the prefabricated construction industry chain, this paper analyzes and discusses the development mechanism of the prefabricated construction industry chain. Through the analysis of the industrial chain development mechanism, the method of industrial chain development is clarified. The following conclusions can be drawn from the research in this paper:

(1) Construction of the industrial chain. The upstream of the industrial chain is to provide investment, technical consultation, design and planning in the process of prefabricated construction to the midstream; the midstream of the industrial chain is responsible for the production of prefabricated construction projects based on the information and resources provided by the upstream, and the components required by the downstream are placed in the midstream. It is pre-produced in the factory and then shipped to the construction site for installation; the downstream of the industrial chain conducts sales and service links based on upstream resources and planning and midstream factory construction, the main contents include sales and property management, that is, operation and maintenance. The work after the period is also completed by the downstream industry chain.

(2) The main body coordination mechanism of the industrial chain. Through reasonable and efficient communication and coordination, conflicts can be quickly resolved, the project continues to operate, and resources are shared through the establishment of an information platform.

(3) Industrial chain supervision mechanism. Through the supervision of the construction subject itself, the supervision of the government relying on the legal level, and the supervision of the public based on their own experience, the information platform is used to timely feedback to the industry chain project, solving problems and increasing experience at the same time, long-term accumulation of experience can be Promote the development of the industrial chain.

(4) Sustainable construction mechanism. In the design of sustainable construction, the natural environment factors are taken into account, the use of new building materials is given priority in the selection of materials for architectural design, and the generation of construction waste is minimized during the project construction process. materials for recycling.

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