

# Study on Countermeasures of Project Management Under Green Building

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**Abstract:** Traditional project management often ignores the existence of sustainable development. Facing the crisis of Energy and environment, project management makes a new exploration in the construction industry. In the future, there will be discussions about green building and project management based on the concept of sustainable development. Green building has new requirements not only in technology and construction, but also in management idea, evaluation system, managers and stakeholders, propose the theoretical aspects of project management.

**Keywords:** Project management; Green Building, sustainable development; Integrated database system

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## 1. Introduction

At present, most of the research on green building is from a certain stage of the building, such as decision-making stage, design stage, construction stage, Operation Stage, etc., more in the development of green technology and policy incentives to alleviate the problems of green building. And we neglect an important factor-project management-which plays a very restrictive role, we need to pay attention to it<sup>[1]</sup>.

The professional knowledge involved in green building projects is complex and changeable, and the organization and management structure is complicated. At present, our country's previous project management can not effectively solve the current project management work, which leads to many problems in the construction process management, resulting in a decline in management efficiency. This paper applies project management and sustainable development to green building to promote the development of green building.

## 2. Green Building and project management

### 2.1 Green buildings

Green building is a sustainable building to protect ecological environment and reduce energy waste. Green building is not only green technology, energy access as the main point, the construction of green building management is particularly important.

### 2.2 Project management

Management is defined as the process by which managers coordinate their functions in order to effectively achieve organizational goals, personal development, and social responsibility. Project management is targeted management with clear objectives through decision-making, planning, organization, coordination and control. The characteristics of modern project management are: the use of high-tech; the application of a wide range of fields; combined with various disciplines; scientific development. The construction project management is a kind of outstanding project management. Construction project management is a kind of comprehensive management with strong constraint, and its process is long and complicated.

### 2.3 Green building project management

Under sustainable development, we should regard project management as ecological and economic management. With a sustainability perspective throughout the project, the two go hand in hand. In the traditional construction project, the project manager measures the value of the project management by the economic benefit, often neglects the sustainable development<sup>[2]</sup>. Therefore, it is necessary to implement sustainable development in green building project management.

Green buildings on the "Green" guide our construction industry to comply with sustainable development, improve energy and environmental damage. Whether from the management, technology, policy, implementation to make fine-grained adjustments, is not focused on the interests of the moment, but for the long-term interests.

## 3. New requirements for green buildings

### 3.1 New requirements for management concepts

Green building project management should be more close to the concept of sustainable development of green environmental protec-

tion, adapt to nature, energy and environmental crisis to optimize measures. Green building for the consistency of management, rigorous and rigorous are making a leap forward. Green building requires that project management is not a single or hierarchical management, not only for a certain stage of management. Its requirements no longer tend to focus on the cost, schedule of a single focus, but in the whole life cycle of the building to continuously optimize the progressive cycle. To change the overall goal of project management, is no longer completely "Cost, schedule, quality" triangle as a measure of project management standards<sup>[3]</sup>. More humanistic factors should be considered on the basis of sustainable development.

### 3.2 New requirements for the construction of evaluation system

Along with the emergence of green buildings, evaluation and certification rating system also came. The current commonly used certification system is the LEED evaluation system in the United States<sup>[4]</sup>. But we must establish the green building appraisal system which conforms to our country condition. China straddles many temperature zones and needs a large number of people to calculate the corresponding building performance simulation values in different regions, the environmental and architectural experts are invited to discuss the environmental performance of the building. Promote the sharing of resources within the community. China's green buildings to single buildings or building groups as the evaluation object, the overall wide is not perfect, the related green technology, materials and other resources have not been planned into a unified standard<sup>[5]</sup>.

Sustainable Development from the system thinking, full participation, planning, integration. Therefore, green building requires a sound construction database from government agencies, owners, design units, contractors, construction units, material suppliers, building recycling, etc., has the unified standard, the path and the specification. The requirements of social responsibility, safety, health and environment of engineering projects have been raised rapidly under the condition of sustainable development. Society should make corresponding changes in time.

### 3.3 New requirements for managers

Test managers in the whole life cycle of the building of green building planning, to continue to learn advanced technology, enhance professional technical ability, but also have no fear of difficulties, enterprising spirit. In the continuous practice, summed up for the green building management of the theoretical framework.

The ability of the project manager, as well as poor management model will have a greater impact on green construction projects<sup>[6]</sup>. At the same time, the green building consultant needed in green building is also a special kind of manager. But there is no equivalence between green building consultants and project managers. Green building consultants and project managers have different responsibilities and must not be confused. The project manager should pay attention to the development of green building and organize staff to attend relevant training in time to prevent the adverse impact on the project. And green building consultants

### 3.4 New requirements for stakeholders

Stakeholders are no longer focusing solely on people, looking at the balance of nature of nature as a whole in the context of environmental sustainability.

## 4. Study on the countermeasures of project management to green building.

Green Building is a plan based on sustainable development. Project management is also supposed to respond to sustainability. The construction follows the sustainable development of green buildings to meet the project requirements and the special nature of Sustainable Development Goals. The following four aspects to discuss the green building under the project management recommendations.

### 4.1 Industry, university and research institutes

Enterprises, research institutes and universities must be closely linked, so that the present and the future, students should be exposed to the latest developments in social development, do not stick to the rigid old requirements, dare to innovate. Invite the actual project managers involved in the teaching of project management experience for the majority of teachers and students. When there are some problems in the project management, we can discuss and solve them through the university and the scientific research institution.

### 4.2 Project manager

In fact, the success of the project has a lot to do with the role of the project manager. According to previous research, few studies mention the role of project managers in the green building rating and certification process. We believe that in the future, we will pay more attention to the role of project managers in green buildings. The project manager has a tighter grip on the project. The project manager has more skills and knowledge and can apply his accumulated experience to the project management. Because of the one-off nature of the project, the project manager is required to have a clear plan for the project, especially in terms of identifying obstacles and helping to implement green building projects. The project manager carries on the sustainable management to the green construction project, selects the reasonable grading

system to make the management plan in advance.

Project manager to strengthen the management of stakeholders and risk management. Green building is in the early stage of development, the risk encountered in the exploration can not be estimated, from the project decision-making stage of the project risk control.

### 4.3 Government control

The participation of the government in market regulation should set off the market atmosphere. To develop practical incentive policies, encourage developers, material suppliers, construction units, design units, consulting units and other construction processes upstream and downstream enterprises actively explore the sustainable development of green buildings.

Taking the 2019 Edition Green Building Evaluation Standard as an example, the green building evaluation system of our country is compiled from top to bottom<sup>[7]</sup>. The content is not closely connected with the actual construction project, so the relevant departments should inspect the real development of the local construction market many times and refine the evaluation standard of the construction, in order to improve the evaluation standard to be practical and effective.

### 4.4 The theory of Project Management

According to the relevant research points out: the project multi-dimensional combination, the environment sustainable development question is our country project management present and the future popular research direction. Most of the research on project management in our country is embodied in the application of project management mode in some aspects. There is relatively little research on the mode of project management. Although a few scholars have started to explore the project management model for complex and changeable buildings, such as Meng Fanyu, Guo Jianying proposed 4V-C-D model<sup>[8]</sup>. Few have attempted to develop theories or frameworks for sustainable projects.

Aiming at the project management system of green building, a unified standard database-system integration database is established. To promote the integrity of the project management system, it is necessary to collect green building resources, such as life cycle data of green building materials, information data of enterprises in the construction industry chain, standards of evaluation and certification, laws and regulations of the industry, relevant policies issued by the government or regions, etc.

## 5. Conclusion

Green building is the result of the construction industry embracing the concept of sustainable development, and project management is an indispensable system framework in the construction industry. After a clear understanding of the requirements of green building for project management, suggestions are made from cultivating talents in universities, to project managers in green buildings, to government regulatory measures, and finally to theoretical frameworks.

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