

Analysis of Budget and Cost Control of New Green Building Projects

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Abstract: With the increment of public awareness toward ecological environment protection, green building has gradually become an integral part of construction development. Green building refers to a form of architecture that conforms to the current social development form and meets the requisites of energy conservation and environmental protection. The budget and cost control of green building construction project play very important roles in improving the quality of the construction and reducing the cost of the project. This paper mainly analyzes the problems and control measures in the new green building engineering budget and cost control.

Keywords: *new green building; project cost; budget; cost control*

Publication date: July 2018

Publication online: 30th July 2018

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0 Introduction

In recent years, with the improvement of environmental awareness among the public, the construction of green buildings has become the main development trend in the construction industry. Green buildings do not only fulfill living necessities and needs but also meet the modern environmental protection concept, making people's lives more comfortable, healthier, and improving quality of life. Green building construction also plays an important role in current

industrial buildings. As part of the construction of green buildings, focus must be placed on energy conservation. Therefore, research on budget and cost management in green building construction is imperative.

1 New green building budgeting and cost management features

In a new green building construction project, the budget control and cost management are very important; therefore, there must be extra attention paid on these areas [Table 1]. As the main guidelines of new green building construction, first, clarify the construction purpose and focus on energy conservation and environmental protection. Before the construction, choose a location with good transportation system and ensure the construction does not cause negative impact on the existing transportation system. At the same time, in the budgeting process, the budget must be of a guaranteed sum. Financial accountants must have integrity and ensure the accuracy of the various data using scientific methods^[1]. Finally, in the aspect of cost management, it should have the characteristics of quantification and refinement, to achieve the purpose of saving resources. Other than that, environmental awareness should be established in the construction company, market price dynamic analysis should be carried out, and building materials and equipment should be evaluated, to ensure effective budgeting and good cost control.

In the new green building construction project, we must fully respect the natural environment, and

Table 1. Characteristics of new green buildings

Management characteristics	Environmental protection	Reduce environmental impact	Energy saving	Greening
Specific analysis	New green buildings are centered on the reduction of environmental pollution and careful selection of materials and equipment	It is necessary to fully consider the impact of construction on traffic and residents' lives and take corresponding solutions such as dust reduction and noise reduction methods	New green buildings have to reduce material waste as much as possible during construction, and energy-saving equipment should be widely used in the design, such as energy-saving lamps	The materials used in the new green buildings must be green and pollution free, and construction waste must be properly handled to prevent damage to the ecological environment while focusing on the greening around the building

fully consider how the construction would affect the characteristics of the existing topography, water system, and plants. We should also combine the concept of low carbon and environmental protection, to create a low-carbon environment as much as possible within the allocated project cost^[2]. At the same time, site selection analysis should be done to select the most suitable green building site and layout, reduce the usage of materials as much as possible, develop a harmonious relationship between humans, buildings, and the natural environment, and prevent damage to the ecological environment.

In addition to the focus on the choice of buildings, the new green building construction project budgeting and cost management also need to ensure the building materials contribute to environmental protection. It avoids the waste of materials and reduces the emission of Freon. Therefore, in the design of new green buildings, it is necessary to apply the concept of energy conservation and environmental protection as the core, fully consider the eco-environmental protection of building materials and the integration with the environment and thus ensuring a sustainable and natural development of green buildings.

2 Budgeting for construction of new green building construction projects

2.1 Acquire a highly skilled budgeting team or improve the quality of employees

In a construction project, the budgeting work has strong technical, complex, and systematic nature. The budgeting team is an important element in the process of budgeting work. Therefore, the quality of the employees directly affects the efficiency of the budgeting work and outcome. However, the survey

shows that many of the current budgeting employees are not highly skilled [the number of people surveyed is 50, as shown in Table 2]. The new green building technology and materials are different from the conventional building technology. The budgeting team must not only have strong engineering budgeting capabilities but also well versed with the concept of building structure and related laws. Construction enterprises must strengthen the professional quality of employees and provide favorable conditions for the development of green project budgeting^[3].

2.2 Improve budget management

Project cost budgeting is an important aspect in the work of new green engineering construction and also an important element to improve the economic benefits of green building engineering. Therefore, it must be treated as the core element of the management and control of construction enterprises. In the management of the budget preparation work, we must take into consideration the practical problems of the building and choose the most suitable construction method. In addition, before the budgeting work commences, the construction design, architectural design, and geological survey, and other aspects of the inspection should have been completed. To strengthen the research of site construction survey, the report is a precondition for budgeting work to support the construction of new type of green building instead of conventional architecture, to request for more and better quality in the construction, so the employees need to strengthen the exploration study of the construction site and strengthen the on-site investigation, information integration, and budgeting work familiarization^[4]. In addition, the budgeting employees also need to understand the drawings in the architectural design and ensure the construction and management workforce to strictly comply. In a specific

Table 2. Quality survey of budgeting employees

	Above bachelor degree	Many years work experience	Master advanced information technology	Familiar with green building concept
Number of people	26	18	25	11
Percentage (%)	52	36	50	22

budget compilation work, the budget compilers must strengthen the perfection of the design drawings, as well as the perfection and supplement of the planar, sectional and three-dimensional drawings, etc., through the analysis of the drawing information, scientific compilation and budget, and the scientific nature of the project cost can be guaranteed.

2.3 Focus on the dynamic management of budgeting work

The budget management is not a fixed variable that is completely based on the construction content. The budgeting outcome will change according to the price and the construction situation of the project. Therefore, the budget management is not unchanging, but the dynamic development of the management has to be maintained. If the solidified management mode is fully adopted in the budget management work, it will have a negative impact on the development of the budget management work, leading to increased risk in the management of construction enterprises and the development of construction enterprises' cost work is halted. Therefore, the construction enterprises must make a good analysis of the budget compilation according to the actual situation of the building and the changes in the market, and formulate scientific management methods, to maximize the efficiency of the project budget cost.

3 Cost control analysis of new green building engineering construction

3.1 Strengthening the development of cost control mechanism

Looking at the current cost control measures of the construction enterprises in our country, they mainly use the management model for the vertical management mode. This management mode makes the whole operation process more complex, in terms of the control of data transfer and information, and at the same time, there is no guarantee in the operation precision and timeliness, resulting in data and information control error, causing

a detrimental effect on the new type of green building construction budgeting and cost control. In view of this situation, the enterprises must strengthen the perfection of the management mode, change the traditional vertical management mode into a flat management mode so that the control information can be timely and accurately conveyed. To ensure the system is more scientifically driven, extra attention has to pay on effective control and management of the cost, which should also be the focus of enterprises' internal control content. Other than that, there should also be improvement in the economic development of the enterprises and beneficial relationships, to strengthen the cost control of construction enterprises work, through each link of engineering construction cost control strategy. Especially for the new type of green building construction, there are many interesting management methods and links, which need to be refined for the tasks, and the detailed methods should be implemented to each employee to ensure the perfection of the control mechanism.

3.2 There are many influencing factors in the engineering construction

Any problem arising from any influencing factor will cause huge business loss to the construction enterprises, among which the major impact is the control of the construction period cost. The construction period cost will not only have a significant impact on the construction quality but also lead to the increase of construction cost. If the construction schedule control leads to an extension past the planned timeline, the consumption of workforce, material, and financial resources will inevitably increase. This results in a vast increment of cost that does not consequent in better quality or benefits. In the construction planning process, the control of construction cost must be greatly supervised, and the introduction of scientific and suitable construction equipment and technology lays a foundation to adhere the timeline for a project cost control. The control of construction cost in new green buildings is not only necessary to control and manage new technologies and materials but also many uncertain factors have to be taken into account as well,

to effectively reduce the impact caused by the extended construction period and reduce the economic loss of enterprises. These effects emphasize the importance of the construction period cost control.

3.3 Manage the investment links well

First, take various measures to improve the scientific decision-making program. In the process of investment decision-making, relevant departments need to formulate scientific working standards and plan according to the specific project construction work, to ensure the comprehensiveness of the plans and choose the optimized plans from them to strengthen the improvement of cost management. Next, carry out estimation works reasonably. Construction enterprises must define specific investment plans strictly according to the estimation. For example, reasonable estimation is made according to land use, development, and equipment installation. This is to ensure the scientific management and control work is carried out smoothly, improves the quality and efficiency of investment management, and the requirements of green buildings are met. Finally, the scientific nature of estimation should be guaranteed. In a specific estimation work, the scientific feasibility investment report should be prepared and the data should be clarified. After the approval by relevant departments, the information should be taken as an important cost management basis to improve the efficiency of investment management. In addition, the accuracy of data information needs to be ensured during the evaluation, and special management departments and management systems should be set up according to specific situations.

3.4 Strengthening the emphasis on contract management

There are many contracts involved in the development of construction projects, that is, why contract management is also an important segment of construction enterprises. However, many construction companies do not recognize the importance of contract management, neglecting the improvement of contract management, resulting in enterprises facing huge economic losses. This causes huge risks to the development of construction enterprises. In the contract

management of an enterprise, it is necessary to presume and be ready to undertake any financial loss arising from any accidents and construction risks before and during the construction, and the claim must be made according to the requirements of the contract. At the same time, during the construction, the construction unit also needs to analyze their responsibility and obligations in construction and management according to the specific requirements of the tender and provisions of the construction contract, and determine the rationality of each management clause. Other than focusing on the analysis and research of the contract content, the cost control workforce should also be familiarized with the contract management procedures to ensure that the cost control measures are enforced at all construction stages, and the accuracy and timeliness of the control measures are ensured. Training of cost control personnel in green building construction contract management and establishing a scientific management system will help enhance the awareness and ability of the employees in green building construction contract management.

4 Conclusion

Project budgeting and cost control are important elements in a construction project management. Especially for the new green buildings, under the advocacy of the energy-saving concept, the project budgeting and cost control should be done efficiently and effectively. Therefore, it is necessary to strengthen the research on the characteristics of green building engineering and recognize the problems in the cost budgeting and cost control of green building projects. On the other hand, it is also vital to strengthen the budgeting and cost control methods and systems and improve the economy, social, and ecological benefits of green buildings.

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