

Research on the Whole Process Cost Management of stadium Construction Projects

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Abstract: With economic development of China, there is a faster growth rate of sports investment in fixed assets. Therefore, how to make a reasonable use of limited funds to complete construction of the stadium project becomes a new topic in the field of engineering cost management in China. In this paper, by comparing the engineering cost management modes between China and other countries, the whole process cost management methods and measures are put forward in order to construct suitably for China's actual situation of the whole process in the stadium construction project cost management system, meanwhile they are aimed at providing theoretical basis for construction project cost management.

Keywords: Engineering cost; Whole process; Stadium investments, Management system

1. Introduction

China is in and will be in the primary stage of socialism for a long time, under the condition of lack of construction fund, it is necessary making rational utilization of resources, completing the stadium project cost management, increasing the service efficiency of funds, improving the level of construction project cost management.

Therefore, how to improve the investment control of the stadium project becomes a very important subject, at the same time, to perfect the whole process of stadium construction project cost management is a vital idea and method to solve this problem. This paper aims at putting forward the concept and management system of the whole process of stadium construction project cost management, making suggestions on the engineering cost management mode reform in China, and providing practical guiding significance at various stages of stadium construction project cost management work. At the same time, the project cost management theory research and practical exploration has far-reaching practical significance for connecting with the international standards.

2. Literature Review

2.1. The project cost management of the United Kingdom

The engineering cost management of UK mainly uses quantity surveying mode, quantity surveyors participate in the project cost management of all kinds of construction projects. In the decision-making stage of project investment, quantity surveyors estimate initially the construction cost, determine the demand of capital, and demonstrate the feasibility of the project. In the process

of project implementation, quantity surveyors of the owner side establish the bill of quantities, and the contractor's quantity surveyors compile a budget according to the bill of quantities, the documents of design and other information provided by the owner.

2.2. China's engineering cost management

Even though China's cost management industry has the budget quota management system, the quota can't reflect the change of technology and market in time. And China's current economic system is socialist market economy, but China still continues to use the budget system of the planned economy, which is not consistent with the requirements of market economy. China puts forward to make the market play a decisive role; it needs us to fully use marketing factors in the construction market, especially in the cost management work of construction project. Although China has enacted a series of laws and regulations to regulate the construction market, if the cost management mode can't keep up with the requirement of market economy, we can't have the subjectivity of the market in cost management.

3. The whole process of stadium construction project cost management

3.1. The concept of whole process of stadium construction project cost management

The cost management in the whole process of stadium construction project, which begins with the early planning phase, is used for the cost management in the whole process of stadium construction project. The cost management in the whole process of stadium construction

project needs a cost management unit to be responsible for the work of cost management, which is not only in favor for the cost management, but also is good for the cost management unit to accumulate practical experience.

3.2. The division of construction project cost management stage in the whole process

The entire process can be divided into the following stages: decision-making investment, design, bidding, and implementation and completion settlement audit. The process and working contents of each stage are shown in Figure 1 and Figure 2

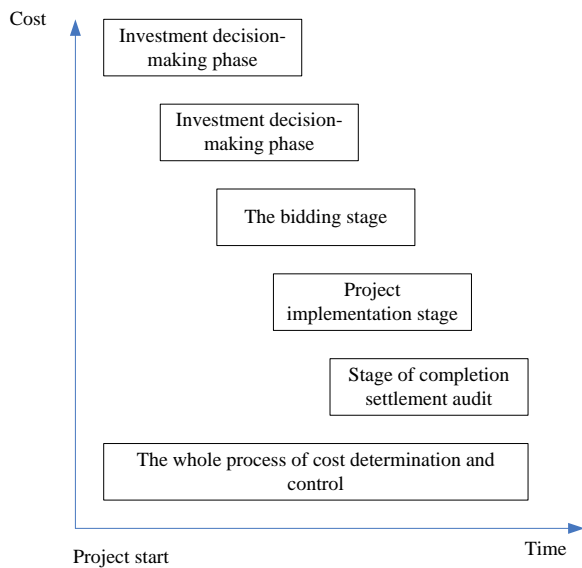


Figure 1. The construction project cost management stage

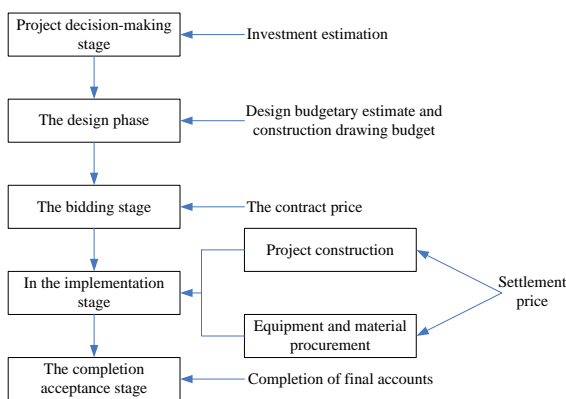


Figure 2. Work in different stages of the stadium construction project cost management work

3.3. The target of different stages in the whole process of construction project cost management

From construction concept to the final completion, a stadium construction project needs to experience a complete and complex process. In every stage of the process, the

cost management has its periodic control objective, each result of the cost management phases provide a basis for goal setting of the next stage, and constrain the target of the next stage, as shown in Figure 3.

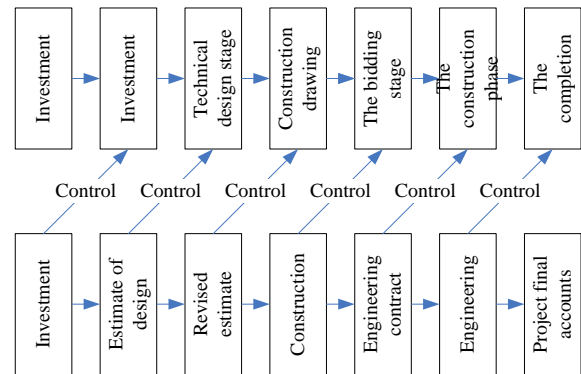


Figure 3. Goal setting in different stages of the construction project cost management

4. The cost management system in the whole process of the stadium construction project

In the entire process of stadium construction project, only the owner is directly involved in the whole process of the stadium construction project, and shall be responsible for the entire project. Therefore, the work of stadium construction project cost management in the whole process should be focus on the owner, and the relevant units completely support to establish a management system.

4.1. The establishment of the cost management organizational structure in the whole process of stadium construction project

The owner should be supervising the consultants during the investment decision-making stage of the project. In addition, the owner and the Management consultancy institution jointly choose the investment consultancy, to supervise and control the project costs. If they decide to choose the management consultancy represented them from the start of the project, they can be replaced. If they decide to choose the supervision consultancy representing them from the start of the project, they can be replaced by the supervision consultancy , which will organically connect different stages of the project together.

4.2. The whole process of stadium construction project cost management in different stages of the management system

After establishing a complete and effective cost management organization, it is not only targeted for control the cost management in the whole process of stadium construction projects at various stages, but also pays more attention to the key management phases.

(1) Investment decision-making stage of stadium cost management system

In the stadium project investment decision-making stage, the research on market research analysis, technical scheme and conditions, project feasibility, at the same time to assess the economic benefit of project and solve the project economic rationality. Owner can get it though the following three aspects: firstly, scheme comparison, in the decision stage through to the factors affected the project cost for research and argumentation, comparison of several schemes, choosing optimal; secondly, precision investment estimation, under the condition of the preparation of engineering estimate reasonable, considering the effects of the stage of implementation of cost factors and the market situation and price change, make the investment estimation precision; Thirdly, economic evaluation, analysis and demonstration of stadium construction in the decision-making phase of various economic factors, recommend the best decision-making project.

(2) The system of cost management in design phase

During the design phase, the design department gets a cost according to the design results together with the design drawings, which has a decisive role in the project cost. Therefore, only by making the cost control well in the design phase can control the investment under the quota, and evaluate the design plan technically and economically.

And the cost management work of the owner should pay enough attention to the following aspects: firstly, make a good selection of design firm by competition in order that the design firm will use the most reasonable design scheme to participate in bidding and the design competition; secondly, reform the calculation method of design cost, in the current design emphasizing too much on technical requirements of design work without considering the economic responsibility of design firm which results the phenomenon of "excessive design", and makes a lot of waste of engineering investment; Thirdly, use the quota design to the design work, during the process of design stage, through the unity and opposites of technology and economy of the quota design can not only ensure the design quality, but also can control the cost; Fourthly, make design review. After the completion of the design documents of the design units, the owner should take a critical review of design work and documents, mainly review on the design engineering cost estimates, the design budget, and the construction budget only to ensure the effective completion of cost management in the design phase.

(3) The cost management system in bidding stage

In the bidding stage of project, the contractor stress on the pursuit of completing the move of the bidding and sign construction contract without a negotiating price, which results that the contractor has the opportunity of claiming and eventually leads a higher project invest-

ment. Therefore, the contractor should focus on doing the following works: Firstly, to adopt the public method to guarantee the openness, fairness and justice of the bidding work so as to control the engineering cost; secondly, choice bill of quantities as valuation methods, in bidding, it should be combined with the actual situation of the region, and bid according to the principle of "unified volume, guided price, competitive fees,"; thirdly, Owners should determine appropriate quota methods, because in the stadium construction engineering it's easy to appear some design changes and some unforeseen situation, so after the completion of the project the quantity may have some change and the project cost also can be adjusted. Therefore, with the appropriate method of quota, it can provide more basis for the project audit work; Fourthly, determining the appropriate form of contract in the bidding work, one should not only consider the pricing problem of engineering, but also should have a comprehensive of the project design, the result of bidding and bidding work, then combine with the requirements of the contract to get a reasonable bidding price.

(4) The cost management system of the stadium projects construction process

During the process of construction, the contractor has to repay for the construction which has finished on time, as well as the consideration of other factors, such as: the soaring prices of main materials, unforeseen difficulties in the construction project, the soaring cost which is due to the requirements on the construction project quality of proprietors etc, and settle reasonable price on engineering. Efficient preparation of funds planned in the implementation phase of construction project

Before a project starts, the project implementation should be prepared well. Drawing up the plan on funds according to the time limit and the engineering budget of the stadium project. Meanwhile, we should consider the engineering properties, the scale features, making sophisticated plan of purchase and use of the resources such as labor, materials, machinery and equipment production. We should determine the construction cycle of every kind of construction on the basis of the real project status and chose a reasonable construction scheme, as well as improve the working efficiency, ensure the engineering quality, shorten the project construction period, and reduce the construction cost.

The dynamic control of the project implementation: In the implementation of the stadium project there will be some unexpected situations, which lead to changes in the project. Collect data in time on the construction site, find the progress and deviation of cost by applying the earned value method, take appropriate corrective measures in order to solve the deviation existed timely. Through the study of the dynamic control of the project. It can scientifically predict the unfinished projects and identify potential problems early. Discover problems earlier, solve

problems as soon as possible, and ensure that the cost control of the project goes on effectively.

To establish the enquiry system of company: Material cost is an important part of project investment, contractors will use some designated materials by party or some materials of a limited price for in order to ensure the material quality and strengthen the control of cost. Contractors should grasp timely the prices of the market materials and crafts. Enterprises should pay attention to information announced of prices by relevant authorities in time, build the information system of price, ensure the efficiency and patency of the information system ,then, analysis the material price trend of different zones combining the condition of market economy and market status of the inflation or deflation for grasping the cost information .The project cost should be entrusted by the owner of the supervision enterprises which are settled by their own price information system, so as to serve more effectively to the owner.

To do a good job of purchasing material and equipment: Firstly, we should supply the materials needed according to the requirements of the project construction to avoid affecting the project quality and time limit due to the material supply problems. Secondly, we need to guarantee the supply of equipment, and get to know the supply channel the market price and quality of equipment information through market research, then choose the cost-effective equipment from a reputable enterprise. Meanwhile, arrange appropriately the equipment entering time. Pay attention to deal with the contractor claim: In the process of engineering construction, the contractor usually compensate the contractor according to the practical situation .For the claim of project time limit and cost caused by force majeure; the contractor should confirm that. But sometimes it's due to the improper construction process arrangement, and the problems like rework cause the prime work delays, thus the construction time is affected. In the cases above, we shouldn't permit contractor's claim for compensation, if necessary, we can counter claim contractor. At the same time, the contractor should strengthen their own management, standardize the work process, and try to avoid or reduce the claim.

Ensure the quality of acceptance of clearing work: The quality of clearing work in the stage of project acceptance has great influence on engineering cost management, especially for some outsourcing projects, its importance is particularly significant. Under the current bill of quantities valuation mode application, accounting of quantities has a direct effect on the cost control. In the accounting of quantities, it not only requires that accounting staffs have a higher professional quality and sense of responsibility, but also requires that they fully understand and comprehend the design intent of engineering and design documents, conduct a comprehensive inspection for the whole project, ,examine quantities item by item,

list the bill of quantities according to the actual, complete the project acceptance record and report

(5) Evaluation after the project

By the evaluation after the project, it not only can make an evaluation of decision and deviation of the project investment finding out and analyzing the reasons of why deviation appears, but also evaluate the work of consulting units such as supervision units, as part of their future work reference. Chinese current engineering field doesn't form a perfect assessment management system after project, and in this respect it should be improved in the future.

5. Conclusions

With the rapid growth of the scale of investment in fixed assets in China, the project investment control contradictions brought by the old project cost management model increasingly prominent. In addition, the competition and the pressure with which China's construction industry faces in the domestic and international are growing, which lead China must be in contact with international practices.

In this paper, the cost management modes of whole process in stadium construction project are discussed putting forward the management system and drawing the following conclusions:

- (1) The connection between various phases of cost management in the stadium construction project of China is not close;
- (2) In stadium construction project, the owner should entrust a professional third-party institution to manage the project cost;
- (3) Cost management should be penetrated into the whole process of stadium construction project;
- (4) Put forward organization and management measures in the whole process cost management system.

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