

# Hotel Project's Cost Control from the Environment-Friendly Perspective

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**Abstract.** Based on the realistic situation of China, and the mature experience of Target cost management abroad, this paper discussed a reasonable path to integrate the target cost management into the construction project of an environment-friendly hotel. During the process to formulate a target cost depending on Stakeholder Theory, applied by using Value engineering (VE), making an environment-friendly level as a life cycle assessment index for formulating a target cost. Thus, an optimal control path is established for the construction of an environment-friendly hotel using target cost management.

**Keywords:** Target Cost; Value Engineering; Environment-friendly Hotel; Optimal path.

## 1. Introduction

Cost control is an important parts of the theory and method of cost management, it has gradually become the vital participants in the field of construction projects and a crucial way to make the core strategies of any construction projects comes true, which means a competitive advantage as a low-cost condition. However, according to incomplete statistics, the energy consumption in general civil engineering has accounted 60% to 70% of all energy consumption in a city of China. Meanwhile, as a responsible country, China should abide by the commitments of the Kyoto Protocol, thus to build civil construction in the perspective of environment-friendly. But, there's an urgent problem needs solved, that's to balance any reasonable costs in the perspective of green buildings and meet the aim of environment-friendly. This paper elaborated from a high-star hotel which needs to select few building materials that meet green standards, then discuss a hotel project's target cost optimal implementation path under the perspective of environment-friendly buildings, that means to base on the function-cost method, to mix the traditional cost control method and green building concept together, hope to upgrade the civil construction project's cost control level in modern China.

## 2. Summary of Cost Control Method

### 2.1 Application status analysis of passive control and active control

The method of project cost control in the traditional sense is single passive or active control, but that can't express well of the concept of green buildings. In order to find an optimal path of cost-control that based on environment-friendly, it is necessary to analysis the method of cost-control in both way above.

On one hand, the passive control hold a substance that design played a decisive role, which means the cost of civil project is a reaction of design. That would save managers' time in a large extent, reduced management costs for a certain extent, be helpful to architect's creative ideas and thus widely popular around architects. But in the process of designing a green building, due to the excessively pursuit of energy saving, or designer's instinct to achieve personal artistic ambitions, leading the building inconsistent with market positioning. Pursuing green buildings caused cost spurt, coupled with the time-late intervention of necessarily control measures in project process, cause the project's cost inputs and environmental outcomes not match. To some extent, that masks the true meaning of cost control, often do not meet the cost target needs.

Conversely, active control is driven by maximize profits which leading to a demand of controlling the cost [1]. Market positioning is determined by feasibility study, investment objectives, environmental objectives and targets. According to any projects which already completed or according to standard data, to establish a quota which requiring design corresponds to the cost of the project in line with requirements established before [2]. However, calculated to meet the cost targets

so that designers are chained by the limits of certain items in order to meet the criteria. Designing often at the cost of energy saving or environmental protection to ensure the limits of the construction costs, often resulting in lacking personality, cannot meet the demand for environment-friendly [3].

### 2.2 Summary of function-costing

Traditional methods of cost control has several disadvantages, which are not fully applicable to environmentally-friendly high-star hotel development in the background of the project. This paper based on the traditional cost control functions and introduce a path which cost method is about to implement environmental protection function through the lowest possible cost, to evaluate the values of function, identify objects that could be improved.

This method need to develop a functional requirements, which was occupy by the hotel's green building standards. Decision-making and design phases is the most influential stage for cost saving, and has the greatest impact on the cost [4]. In the preparatory phase through the analysis of micro-level project stakeholders' demands, considering the background, and the completed project-related data inside and outside the enterprise, function-cost analysis from the perspective of environmental protection, integrated decision-making and formulate functional configuration of the entire program list, put all above as the basis for any task in the design stage, to guide the design and cost control.

## 3. Model Framework

### 3.1 Cost optimal implementation path under the perspective of environment-friendly

In the process of designing a civil project, function value is the core for the principle of value engineering theory, guided by the limited design, ensure that the design of the hotel are "value for money". Combining active and passive control, ensure maximum value of the project in terms of environmental protection, energy saving and theme of eco-friendly. Using this model to identify and eliminate the initial design which did not meet the requirements of economy and environmental protection, from the perspective of economic and environmental features to achieve reasonable function and cost reduction. After the optimization of design, the implement process should be restricted under the target cost. Based on the combination of passive and active method for cost control mentioned above, cost optimal implementation path under the perspective of environment-friendly as shown in Figure 1.

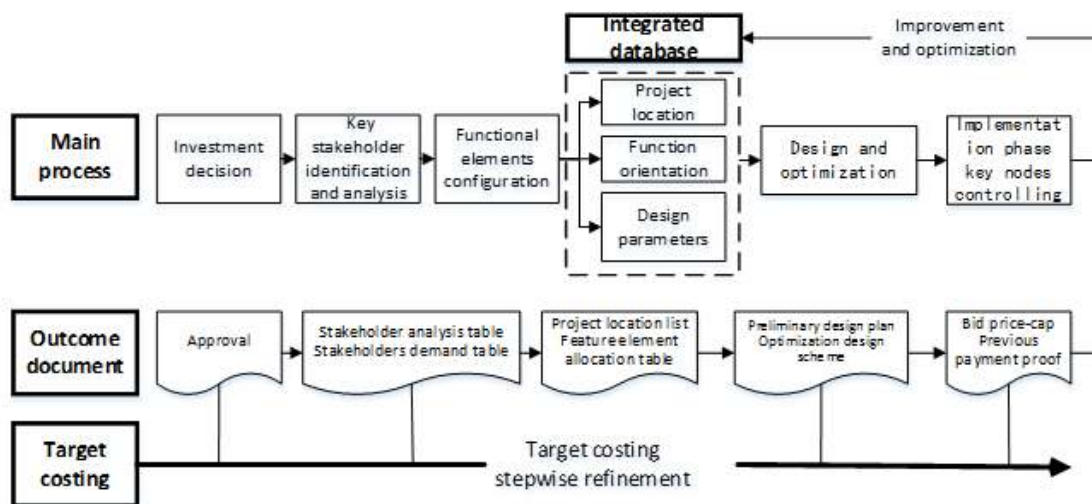


Fig. 1 High-star hotel project cost control optimal realization model

### 3.2 Optimal cost control path analysis

A project planning is expected to be guided by a certain goal. The civil project's main goal is to provide an appropriate level service, perfect sensory experience and memories for customers. The projects' decision making and planning process as shown in Figure 2.

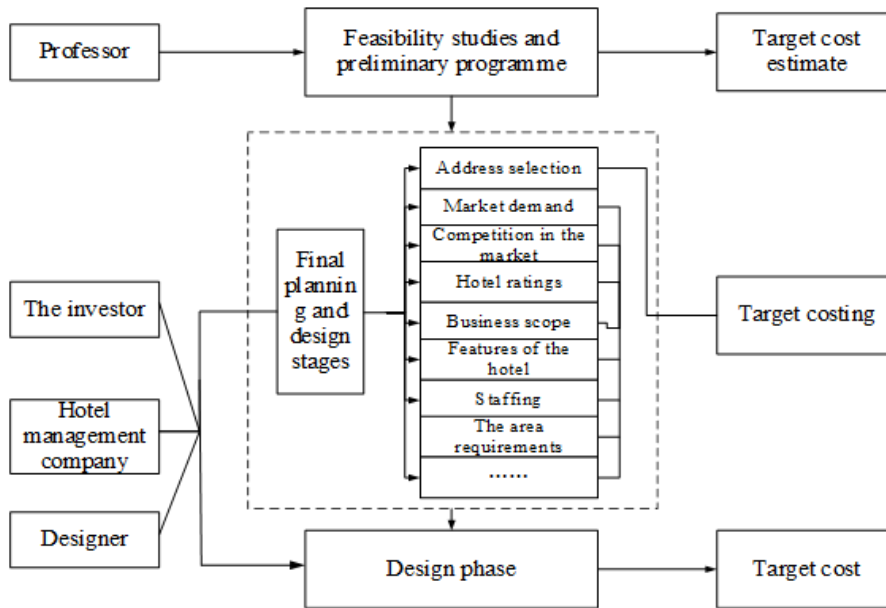


Fig. 2 Orientation and decisions processes of Hotel project

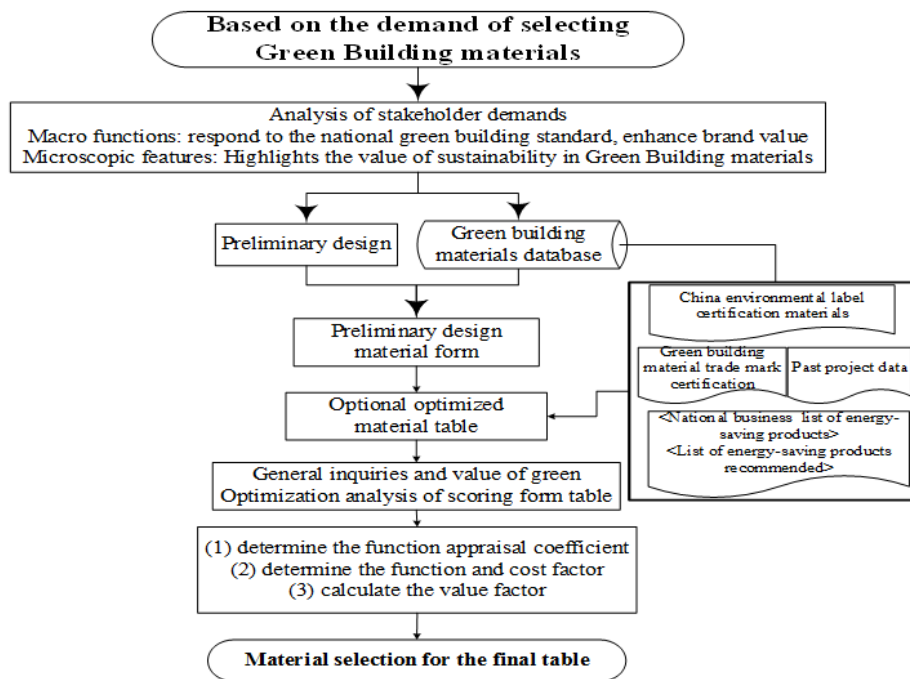


Fig. 3 Model of high-star hotels preferred path of green building materials

Application of green building materials is an inevitable choice for civil construction to dealing with the waste of resources and resource scarcity, the traditional building material does not meet the requirements of sustainable development, the construction industry towards a green and low-carbon development path is an inevitable trend. This paper based on high-star hotel, green building material selection for an example, emphasized that the process of applying the path model mentioned above should be pay especially attention to the following two points.

First, this paper discussion an optimization choice of building materials for the outdoor green plants and interior wall coating, and the principles is to maximize value for full life cycle project. Choose some high star hotels project which has already been used to play an optimization benchmark roles, thus through the green-building-materials database to obtain the outdoor green plants and interior wall coating optimization results for high-star hotels project eventually, and to guide engineering practice, optimization path see Figure 3.

Second, the cost target for a high-star hotel projects should be selected based on stakeholder analysis and hotel basic functions. This paper based on textual analysis to determine the main 3 stakeholders, listing as high-star hotel investment, hotel Management Company and customers. Using Demand analysis method and national green building standards, as well as research information based on macro-market data, to decide the feature configurations of the hotel and make reasonable choices of building materials for each functional unit.

#### **4. Conclusion**

This Paper discussed an optimal path of hotel project cost control in the view of environmental friendly. Optimization for green building materials, means to abandon the traditional way of building materials selection. While, based on the realistic situation of modern China and mature experience of target cost management abroad, to formulate a target cost model depending on Stakeholder Theory, in addition with Value engineering (VE), to make environment-friendly level as a life cycle assessment index in the way of formulating a target cost. Thus, an optimal cost management path has been established for the hotel project with the premise of environment-friendly.

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