

Analysis of Effective Control Measures for Civil Engineering Management and Project Cost

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Abstract: Today, with the development of economy, the construction industry has achieved remarkable results. Civil engineering is increasing in the city, which plays a certain role in promoting urban construction. Cost control is an important part of civil engineering. Cost control can control project cost and avoid waste of funds, so as to avoid the rupture of the capital chain and affect the progress of the project. It also enables civil engineering to proceed smoothly and improves engineering efficiency. Therefore, as the person in charge of civil engineering, he should assume the responsibility of project management, strictly control the cost of the project, and ensure that the cost of the project is reasonable.

1. Introduction

Under the background of knowledge economy, the role of civil engineering is increasing. Civil engineering is not only related to urban construction, but also to people's safety. Therefore, it is the duty of every engineer to ensure the quality of the project. Civil engineering management has great influence on engineering quality. If managers conscientiously fulfill their engineering management responsibilities, establish correct concepts, and effectively supervise the project, they can significantly improve the quality of the project. At the same time, cost control is also an indispensable part. Controlling project cost can create more benefits for enterprises on the one hand, on the other hand, it can strictly restrict procurement personnel and the construction personnel to improve the quality of cost work.

2. Current situation analysis of Civil Engineering Management

2.1 The construction process is not standardized

Civil engineering is relatively complex. In order to make civil construction continue, the construction personnel need to improve the construction process as a support, allocate various contents reasonably, and improve the construction efficiency. However, according to the current situation of civil engineering, many enterprises lack of attention to the construction process and comprehensive specification of the construction process, which makes the construction personnel unable to define the construction process, which not only reduces the construction efficiency, but also has a greater impact on the progress of the project^[1]. The construction process plays an important role in civil construction. If the managers do not take the civil engineering as the foundation and take the construction process into consideration comprehensively, there will probably be some loopholes in the construction process, which will lead to the phenomenon of rework and cause serious losses to the enterprises.

2.2 Insufficient management of construction site

Construction site is an important place for civil construction. The construction site not only contains a lot of materials and equipment, but also involves many human resources. If managers lack strict management of construction site, it is not only prone to safety accidents, but also reduces the quality of civil engineering, which is far from the expected effect. On the contrary, managers

can take effective measures to manage the project, on the one hand, to promote the smooth progress of the project, on the other hand, to speed up the construction progress, save construction costs, so that the benefits of the project have been significantly improved. But in actual operation, the construction site is relatively chaotic, not only some equipment is placed unreasonably, so that the use value of equipment is constantly reduced, but also increased the cost of equipment maintenance. In addition, project managers have not clearly divided the responsibilities of managers, often cross-working phenomenon, neglect of the management of a link, increase the hidden dangers of the project.

2.3 Lack of professional managers

Project management cannot be carried out without managers. If managers do not act, the project will be in a certain security risk, which is not conducive to the long-term development of construction enterprises^[2]. Because the construction personnel have certain mobility, some construction personnel lack professional training, technical level is not high, lack of safety awareness, this requires management personnel to strengthen supervision, explain to the construction personnel and related safety knowledge, improve safety literacy, so that the quality of civil construction can be guaranteed. However, managers lack attention to this content and comprehensive supervision of the construction personnel, which leads to the existence of non-standard construction phenomenon among the construction personnel and hinders the normal development of the project. In addition, some managers have bureaucracy, only attaching importance to personal interests, lack of consideration of team interests, which not only affects the corporate image, but also leads to the continuous decline of the competitiveness of construction enterprises.

3. Effective measures to strengthen civil engineering management

3.1 The project manager should strictly manage engineering safety.

Safety is one of the important contents of civil engineering. Therefore, in carrying out management work, it is necessary to control engineering safety problems and avoid personnel injury. Firstly, before construction, managers should fully understand the situation of civil engineering, clarify the responsibility of safety management, formulate a more perfect safety prevention plan, and distribute the plan to the constructors. The construction personnel can strictly operate according to the content of the scheme and control the quality of the project. Secondly, during the construction period, the project manager should sign a contract with the construction unit, clearly stipulate the safety issues, and divide the responsibilities of both sides. Once a sudden situation occurs, it can be carried out according to the contents of the contract, so as to avoid contradictions between the two sides, leading to the end of the project. Thirdly, the managers should strictly control the construction materials. Before entering the field, the managers should sample the materials by testing technology. If problems occur in the tested materials, they should test the same type of materials in an all-round way to ensure that the quality of the materials can meet the prescribed standards and improve the construction safety. Finally, project managers should organize the construction personnel to study regularly, train them in professional skills and safety knowledge so as to change their thinking and strictly require themselves, so as to fundamentally eliminate safety problems and make them have a high sense of responsibility^[3].

3.2 The project manager should manage the progress of the project strictly.

Many civil engineering construction time is long, spend a lot of manpower and material resources, in the construction, if the builder lazy, did not complete the task of the day, will delay the construction period, resulting in serious impact on the progress of the project. Therefore, managers should do a good job in the management of project progress and take effective measures to solve it. First, in the design stage, managers should coordinate the personnel so that designers and builders can effectively communicate with each other, exchange opinions, put forward constructive ideas for

the project, and closely integrate them with civil engineering to formulate a perfect construction schedule, so that both can be achieved. Let the project manager understand the overall situation of the project, but also to promote the implementation of the construction schedule, so that the construction schedule can be implemented. Secondly, in the construction stage, managers must recognize their responsibilities and supervise the project according to the construction schedule. On the one hand, they can effectively control the construction progress and avoid interference by external factors, on the other hand, they can refine some important processes to achieve the desired results. Finally, it is easy to change during construction. Managers need to coordinate all aspects, adjust the construction plan and schedule to make it more in line with civil engineering, so as to shorten the construction cycle^[4].

3.3 The project manager should strictly control the project cost.

Influenced by the characteristics of civil engineering, its engineering cost is relatively high. In order to achieve greater benefits for enterprises, it is necessary to scientifically manage the engineering cost. Specifically speaking, on the basis of ensuring the quality of the project, managers should effectively control the cost of materials and equipment, and try to select materials with higher prices, which can not only save material costs, but also make engineering costs. Continuously decreasing. Secondly, managers should purchase materials and equipment from a long-term perspective and constantly adjust the purchase criteria. For example, when selecting equipment, managers should first consider the duration of equipment use and the cost of later maintenance. Some equipment, although the cost is low at the time of early purchase, needs more funds for later maintenance. Therefore, it is very necessary for managers to consider comprehensively. In addition, construction technology is also an indispensable part of the construction stage. Managers should consider the construction technology and introduce new technology regularly, which can not only improve the construction efficiency, but also shorten the construction period, thus reducing the construction cost.

4. Effective Measures to Strengthen the Control of Civil Engineering Cost

4.1 Cost Control in Design Phase

Design stage is the initial stage of civil engineering, and also an important stage to ensure the smooth construction. Therefore, in this stage, the construction personnel must do a good job in cost control, train staff in an all-round way^[5], so that they have a good sense of cost and avoid the phenomenon of exceeding the project budget. In the traditional work, managers often neglect the content of cost and pay no attention to cost control. In the new era, managers should constantly adjust their ideas and concepts, and take cost control as an important content to achieve the purpose of effective control. In the design stage, managers should first do a good job of the preliminary work, understand the surrounding buildings, master their main characteristics, and then formulate corresponding reports, so as to facilitate the construction personnel to master the construction site, so as to achieve good results in cost control.

4.2 Cost Control in Construction Stage

The construction stage is the most critical period of the whole project. Controlling the cost control in the construction stage can make the project benefit increase significantly. Specifically divided into: First, the bidding process. Before the construction of civil engineering, it is necessary for enterprises to carry out bidding and select suitable construction units. In this process, enterprise personnel must adhere to the principle of fairness, select more reliable units according to the requirements of bidding, and ensure the normal completion of the project. Some units are driven by interests and operate in a dark box, which requires bid evaluators to carry out comprehensive supervision, improve their own business level, avoid the phenomenon of low quotation caused by human factors, and affect the bidding market order. In addition, during the bidding period, all units should be treated equally, so as to avoid collusion among some units and to do something harmful

to the quality of the project. Second, the design stage. In general, in the early stage of design, some changes are prone to occur, which will have a serious impact on cost settlement. At the same time, construction projects will also be affected and some changes will take place. This requires a good control of the design stage to ensure that the cost is reasonable^[6]. Third, the construction stage. The role of the construction site is self-evident. Therefore, the project manager should clearly stipulate the entry and exit personnel, avoid non-engineers entering the site, and in construction operation, the construction personnel should operate according to the content of safety regulations, wear safety hats and so on, so that the cost of project cost can be continuously reduced. In addition, materials are also an important part of construction cost control. Therefore, managers should grasp the material market situation in real time, grasp the market dynamics, and make appropriate adjustments according to the market situation, so as to reduce the project risk. For example, when choosing concrete materials, try to choose a relatively small amount of ash, which can not only ensure that the concrete mix ratio is more reasonable, but also improve the application effect of concrete.

4.3 Cost Control in Completion Stage

After completing the cost control work in the early stage of construction, managers should pay more attention to the completion stage. In the traditional concept, many people think that the cost control is no longer necessary after the completion of the project. This misconception will not only bring adverse effects to the project operation^[7], but also reduce the value of civil engineering application. Therefore, managers should pay attention to the completion stage. Firstly, they should collect some data from the construction site and conduct systematic analysis, check these data with relevant documents to see whether they conform to the engineering situation. If they find that the data are inconsistent, managers should find out the reasons behind, whether there are errors in the accounting process or calculation errors caused by human factors, so as to ask questions. Questions were investigated. Only by doing the cost control work well at the completion stage can the whole process of the project be controlled and the cost control effect be improved.

5. Conclusion

In the whole process of civil engineering, the construction personnel should attach importance to project management and cost control. Only if they keep close contact and cooperate with each other can they achieve maximum benefits. Therefore, managers should adjust their management methods, keep abreast of market changes, adopt more effective management methods to reduce project cost, and achieve the purpose of scientifically controlling cost.

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