



Research on the Application of Unbalanced Quotation in Landscape Project Management

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Abstract. Landscape projects are mostly fixed unit price contracts with list price. In the bidding process, unbalanced offer often occurs. Imbalanced quotation refers to the premise of not affecting the total quotation of the project, by adjusting the internal quotation of each project, in order to achieve neither to improve the total quotation, not affect the winning bid, but also in the settlement of the more desirable benefits of the quotation method. Imbalanced quotation is a certain adverse effect on the construction of landscape engineering. Of course, after fully understanding the operation mode of unbalanced offer, unbalanced offer can be avoided through management measures. In this paper, the unbalanced offer is briefly introduced. Describes the adverse effects of unbalanced offer and some management suggestions to avoid unbalanced offer.

Keywords: landscape project management; unbalanced quotation; list pricing.

1 Introduction

There are more and more construction projects of landscape engineering, and a large number of bidding and contract signing of landscape engineering take place in market transactions. In the construction of real estate, government projects or some municipal parks, a large number of garden engineering bidding work exists in the case of unbalanced offer. Unbalanced offer as a bidding strategy, it can often catch the bidder's mistakes, the bidding process to predict the change in the amount of work, to win the bid at a lower price [1].

The study of Unbalanced Bidding was first proposed by Marvin Gates. Since then, the unbalanced offer has been used as a bidding technique and method for bidders at the stage of contracting cost management [2]. Scholar Stark M firstly applied the linear programming theory to the unbalanced bidding revenue research model [3]; Athey and Levin scholars believe that bidders can obtain higher profits by raising the offer of the potential volume of work that will increase in the future, and lowering the unit price of the project that will reduce the potential volume of work to obtain higher profits.

At the same time, Domestic scholars have also conducted a detailed study on unbalanced quotation mainly focusing on the concept of unbalanced quotation, the

mechanism and background [4,5], the benefits and risks and the application in the construction industry [6,7]. In the construction of real estate, government projects or some municipal parks, a large number of landscaping projects appear, and at present, for the application of unbalanced offer in the management of landscaping projects, there is a phenomenon of practice first and theory. Based on the unbalanced offer model and strategy in the process of garden project management problems; this paper through the study of unbalanced offer of the essence of the content, analyze the unbalanced offer of the adverse effects of the garden project. Put forward to cope with the unbalanced offer on some management measures, reasonable avoidance of risk. This is a guiding significance for solving the application of unbalanced offer in landscape engineering.

2 The pricing model of the garden project

2.1 The content of the garden project and the contract pricing model

Landscape engineering construction is the construction and transformation of the living community in the activities of the field, the weekend to go to play in the park, can be used for sitting on the rooftop terrace, under the office building can be stopped to smoke the porch and so on. The common pricing methods used in construction contracts can be categorized into three: lump sum, unit price. The corresponding construction contracts are also known as lump-sum, unit-price and cost-plus-remuneration contracts. Most of the contracts for landscaping projects are signed in accordance with the fixed unit price method. That is, according to the contract list, fixed single work of the comprehensive unit price, fixed comprehensive unit price and multiplied by the final occurrence of the actual amount of work to obtain the sum of direct costs, plus the corresponding charges and other content to determine the final contract cost. Here it is necessary to introduce another list pricing concept.

2.2 List pricing mode of gardening project

According to the Specification for Bill of Quantity Pricing of Construction Projects, China's construction project cost consulting adopts the bill of quantity pricing mode, in which the cost of sub-elements as the main body of the cost of the project fee is derived by multiplying the comprehensive unit price of the sub-elements directly with the list quantity. Comprehensive unit price of sub-parts refers to the labor cost, material and engineering equipment cost, construction machinery use cost and enterprise management cost, profit and risk cost within a certain range required to complete a prescribed list item. Determine the cost of sub-projects, and then summarize the cost of measures, provisional cost, provisional cost, fees, taxes and other costs after the cost of the entire project contract. The contract cost of landscape engineering is mostly a fixed unit price contract based on bill of quantities.

3 Application of unbalanced quotations in landscaping projects

The essence of unbalanced quotation is actually very simple. First, from the perspective of profit maximization, the projected volume of work to increase the content of the single offer will be increased, the projected volume of work to reduce the content of the single offer will be reduced[8]. So that in the settlement of the time can maximize profits, while at the same time can ensure that the total price of the bid has a certain downward space, in the bidding to get a head start. Make the project "low bid, high price settlement". Specific unbalanced offer is often applied to the following aspects, See Fig. 1.

(1) Gardening project can be early construction projects (such as the cost of measures, foundation works, earthworks, large-scale tree projects, etc.) can be appropriate to increase the offer, in order to facilitate the turnover of funds, improve the time value of money. Later projects (such as equipment installation, finishing touches, green ground cover project, etc.) can be appropriately reduced. Of course, these are applicable to large-scale garden construction projects with a long construction period.

(2) After the volume of work accounting, found that the list of errors in the volume of work, is expected to increase the volume of work in the future projects, appropriate to increase the unit price, so that in the final settlement can be more profitable; and for the future volume of work is likely to reduce the project, appropriate to reduce the unit price, so that in the settlement of the project will not have too much loss.

(3) Design drawings are not clear, the estimated amount of work to be increased after modification, you can increase the unit price; and the project content is not clear, you can reduce the unit price of some of the implementation stage of the project through the claim and then seek to improve the unit price of the opportunity.

(4) The tentative project to be specifically analyzed. Because this type of project to start after the construction unit to study the decision whether to implement, and by which a contractor to implement. If the project is not sub-bidding, will not be constructed by another contractor, it is certain that the construction of the unit price can be quoted higher, not necessarily to construct should be quoted lower. If the project is sub-bid, the tentative project may also be constructed by other contractors, it is not appropriate to quote a high price, so as not to raise the total price.

(5) Unit price and lump sum mixed system contract, the bidder requires some items using lump sum offer, it is appropriate to quote a high price. First, because most of these projects are at risk, and secondly, such projects can be completed after all the settlement of the offer. For the rest of the unit price of the project, it can be appropriate to reduce the offer.

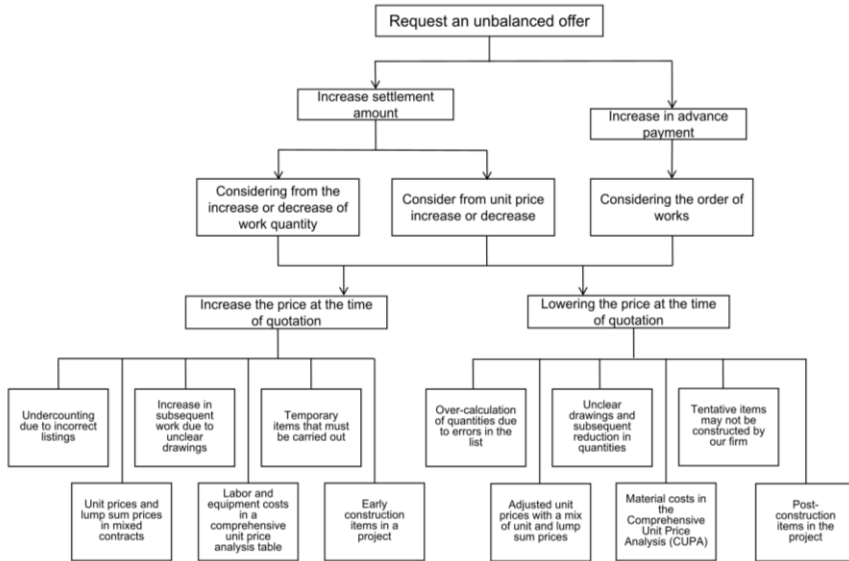


Fig. 1. Application of Unbalanced Quotation

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4 Adverse effects of unbalanced offers on the project

Imbalance offer will indeed bring certain benefits to the bidder, but also the bidder's ability to quote and project operation ability[9]. But standing in the perspective of the construction side, excessive use of unbalanced quotes will affect the overall quality of engineering construction(in Fig. 2). The unbalanced offer has an unfavorable impact on the construction of the project, as follows:

(1) unbalanced offer reduces the fairness of bidding competition. Quotation is the work in the bidding process, and the quotation of the bid affects the score of the bid. It even directly affects the winning results of the project. The emergence of unbalanced quotations will lead to a part of the bidder's quotation is relatively low, which may

cause some of the best suppliers to miss the winning bid, and will make the whole bid evaluation process unfair.

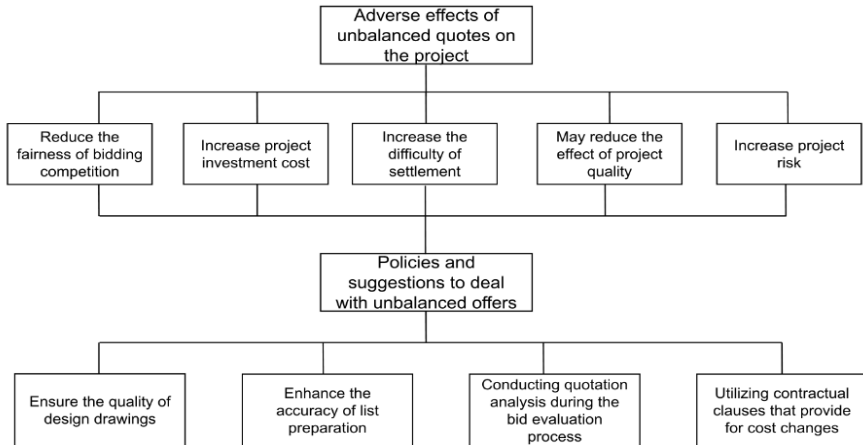


Fig. 2. Adverse effects of unbalanced quotes on the project

(2) Unbalanced quotations will increase the investment cost of the project. Imbalanced quotes will increase the unit price of the single job that is expected to increase the volume of work. Thus, at the time of settlement, the bidder will be able to obtain a higher profit. But this also increases the investment cost of the entire project. Make the project "low bid, high price settlement".

(3) unbalanced offer increases the difficulty of settlement. As a result of the unbalanced offer is an important part of the essence of the project is to predict the amount of increase or decrease. In the construction of the amount of increase or decrease, there will be a large number of changes, visas, and even claims. Thus greatly increasing the cost management work, increasing the difficulty of project settlement.

(4) Unbalanced offer may reduce the project quality effect. One of the purposes of unbalanced quotation is to maximize profit. Reasonable range of optimization is possible to achieve both results and profits. But some bidders use the unbalanced offer no bottom line, all to profit, with special means to replace the contract of low profit sub-content with high profit content. Replacement of the actual landscape effect is not what they consider. Thus making the quality effect of the whole project is reduced.

5 Policies and recommendations to deal with unbalanced quotations

The unbalanced quotation in the landscape project can be reduced and avoided through management measures. The construction unit should work together from the design

side, contract side and engineering construction side in the overall management operation of the project to reduce the unbalanced quotation of the project [10,11]. The main recommendations by the following points.

(1) Ensure the quality of design drawings. It is very important to strengthen design management and ensure the quality of design drawings. Landscape designers need to carefully survey the site and study the survey report. Combined with the site to do landscape program design. When doing construction drawings need to fully cross circle the landscape drawings with other specialties. In addition to the landscape program, to fully consider the municipal pipeline, structural elevation and other professional drawings. After the construction drawings design, the drawings must be rigorously reviewed to ensure that the program is real and feasible can be landing, to ensure that the drawings are accurate. Reduce the design changes in the process of project implementation.

(2) Strengthen the accuracy of list preparation. Unbalanced offer is available to take advantage of the errors in the preparation of the list. So it is very important to strengthen the accuracy of list preparation. Ensure the accuracy of the list, to avoid the occurrence of omissions, repeated measurement, the list of quantities of statistical errors can largely reduce the unbalanced offer. This requires cost managers to do a careful accounting and review work.

(3) Bid evaluation process for quotation analysis. Construction unit of the bid evaluation process, need to do the quotation analysis of each unit. The single offer of each family and the bid control price to do a comparative analysis. List the details of the price that is too high or too low. Communicate with each bidder to confirm and form a written document. Especially for the winning unit's too high or too low a single quote, do some analysis and verification of the relevant quantities of work, and related design plans and drawings of the review. Determine the possible points of unbalanced quotations. Reduce the unbalanced offer of the project.

(4) The use of contractual provisions for cost changes. Landscape engineering contract can be agreed through clear terms, the development of unbalanced offer settlement measures, the principle is that regardless of the bidding list of the number of projects to increase the number of reductions are taken in conjunction with the market price of price adjustments. Take this precautionary measure, can be avoided from the root of the unbalanced offer in the settlement of the problem. Construction unit needs to refine the construction contract, agreed settlement terms, clear engineering quantity increase or decrease in unit price adjustment clause.

6 Conclusion

Unbalanced offer is widely used in the construction of landscape engineering projects. It has a negative impact on the construction of the whole project. After understanding the pricing mode of landscape engineering projects and the common forms of unbalanced quotes, through the study of unbalanced quotes, relatively perfect management measures can be formulated to reduce the impact of unbalanced quotes on the construction of the project. Landscape workers can strengthen the design management, to

ensure the quality of drawings; strengthen the accuracy of the list preparation; bid evaluation process to analyze the offer; the use of the contract provides for cost changes in the provisions of the cost of cost management, reduce the unbalanced offer.

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