Analysis on Bidding Strategies and Quoting Techniques of Civil Buildings

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Abstract

With the rapid urban population growth, the structure of urban and rural has undergone a drastic transformation while urban construction has also begun to develop on a large scale. At the same time, the number of civil buildings that are used directly for people's material and cultural needs has also rapidly increased during the large-scale development of urban construction. Numerous opportunities are presented to the construction companies. It is necessary to analyze these opportunities based on subjective and objective conditions. In this case, the article analyzes both the bidding strategy and quoting techniques of civil construction projects. In addition, the issue provides reasonable suggestions to the majority construction companies for the bidding of civil construction projects.

Keywords

Civil architecture, bidding strategy, quoting techniques, construction companies, bidding price.

1. Introduction

The correct bidding decision and bidding strategy determine whether the bidder can improve the winning rate and obtain the maximum profit. Since China's accession to the WTO, China's construction industry has gradually completed its integration with the world. China's economic industry has also been transformed from the original planned economy era to a market economy. Almost all civil construction projects require tenders. Under the conditions of market economy, bidders obtain the construction tasks of civil construction projects through bidding, but not every tender for civil construction projects must be voted, nor is every vote must be in the middle. Therefore, it is necessary to study and discuss the bidding strategy.

Whether the bidding strategy is correct or not depends not only on whether or not the bid is successful, but also on the economic benefits after winning the bid. Therefore, we must recognize the importance of bid decisions, consider market conditions, corporate goals, competitors, etc. to make bid decisions and determine bid strategies. This chapter will separately explain the strategies of bidding for civil construction projects from two phases of bids: pre-bid strategies and strategies in the bidding process.

1.1 Pre-bidding Strategy Analysis

For a construction tender issued for a civil construction project, it is first necessary to determine whether to participate in bidding. The bidding decision must demonstrate whether the civil construction project is worth bidding. The main basis for decision-making includes the civil construction project itself (civil construction projects and tenderers), the construction company's own situation, and the situation of competitors.

After obtaining the project tender information, the construction company shall analyze and determine whether to participate in the bidding of the project based on its own professional advantages, economic strength, management level and construction experience. It is necessary to pay attention to avoiding shortcomings, give full play to its advantages, and correctly evaluate how the participation in the project has affected the long-term development goals of the company. In bidding, we must not only concentrate on recent benefits, but also on long-term goals. If the construction company is saturated with production tasks for a period of time, and the profit of the civil project for which the bidding is conducted is too low and the risk is too high, it is better to abandon such projects.

Grasping the situation of competitors is an important part of bidding decisions and is an important factor in whether an enterprise's external bid can win. After analyzing the situation of competitors, if the construction company's technical level, reputation, and construction level are significantly inferior to its competitors, it would rather give up the civil project.

1.2 Strategies in the Bidding Process

1.2.1 Nature of Bidding

After fully analyzing the subjective and objective conditions and deciding to bid on a specific civil project, it is necessary to fully study the bidding documents, and based on the company's own situation, including its own professional advantages, economic strength, management level and construction experience ,to determine the nature of the investment.

Profit bidding. In the following cases, the bidder can use the profit as the main purpose to increase the quotation: the bidding project is not only the strength of the enterprise but also the weakness of the competitor; the intention of the bidder is clear, and the construction company is more inclined to obtain this construction task.

Risk bidding. Although the construction company knows that the tendering project is difficult and risky, and there are unresolved problems in terms of technology, equipment, and funds, due to the lack of construction tasks or the project is profitable, or decided to participate in the bidding in order to open up new technology areas, and at the same time managed to deal with the existing problems and still decided to bid. Such bids are called risk bidding. If the bid is successful, the existing problems can be solved well, and better economic benefits will be achieved,the construction ability of the company can be exercised well; but if the problem is not solved well, the reputation of the company will be damaged; if the problem is serious, it will lead to corporate losses or even bankruptcy.

Insurance bidding. The construction company will bid for the various major issues (technology, equipment, funds, etc.) that can be foreseen in the bidding project. It's called the insurance bidding. If the economic strength of a company is too weak to withstand the risk, it will often choose to insurance bidding.

Guaranteed tender. This type of situation applies to tender projects that do not have much advantages for construction companies and there are many competitors and the company has no follow-up projects or even some of the work. Enterprises in this situation must win the bid.

1.2.2 Improve the Possibility of Winning the Bid

After analyzing its own situation and determining the nature of the bid, the bidder can increase the possibility of winning the bid from the following aspects.

Designing a well-designed construction organization. A well-designed construction organization will adopt reasonable technologies, equipment and materials, choose reliable subcontracting units, arrange compact construction schedules and other means, and effectively reduce project costs to obtain more profits for themselves.

Make suggestions for unreasonable designs. This requires bidders to carefully study the design drawings, find unreasonable designs and put forward their own proposals to reduce costs or shorten the schedule for early profit. This will increase the attractiveness of tenderers.

Low quotations, high claims. Bidders may intentionally lower bids to increase the likelihood of successful bids, and focus on construction claims after winning the bid. This bidding strategy applies to high-quality construction companies.

Focus on the future. In order to grasp some promising construction technology or to obtain the follow-up construction tasks of the bidder, the construction company prefers to reduce the quotation so as to strive for the future advantage.

2. Civil Construction Quote Techniques

When bidding for a project, it is necessary to consider their own strengths and weaknesses, as well as to analyze the characteristics of the bidding project, and to conduct selective quotes based on their characteristics and types of construction conditions.

2.1 Pricing principle

High price strategy. The quotation of civil engineering projects can be appropriately improved in the following circumstances. Poor construction conditions, such as civil works with narrow venues and downtown areas. Professionally demanding technology-intensive civil projects, and bidders have strong professional strength and reputation in this area. Low-priced small projects. The tenderer stipulates short-term civil works. Less competitive competitors. The payment conditions are not ideal;

Low price strategy. The following situations can appropriately reduce the quotation of civil engineering projects. Projects that are simple in construction, large in engineering, and can be done by general companies. Civil engineering with competitive competitors. Bidders are eager to break into the construction market in a certain area. Mechanical equipment is temporarily transferred without construction site.

2.2 Pricing method

When the bidder makes bids for the construction of civil construction projects, he can seek some quoting skills on the premise of guaranteeing the quality and construction period so as to increase the possibility of successful bids or obtain considerable profits during construction. The quote techniques of common civil buildings include: unbalanced quoting method; multi-plan quoting method; lower the price suddenly; temporarily letting interest for subsequent profit; preferential condition method.

2.2.1Unbalanced quoting method

The unbalanced quoting method refers to the adjustment of the internal quotations of various sub-items when the total quoted price of a certain civil project is basically determined so as not to increase the total quotations (not affecting the winning bids), and to obtain better economic benefits at the time of settlement.

Usually civil engineering adopts this method in the following situations: Appropriately increase the reported unit price for items that can early settle the project recovery plan (such as earthworks, basic projects, etc.), and lower the reported unit prices for later items (such as decoration, equipment installation, etc.) to facilitate the Cash flow. For projects that may have an increase in construction volume during construction, we appropriately increase the reported unit price; if the project volume may be reduced, the reported unit price shall be appropriately adjusted downward. For tentative projects, if it is estimated that there is a high possibility of implementation, the quotation may be adjusted upwards; on the contrary, the quotation may be adjusted downward appropriately.

2.2.2 Other quotation methods

Multi-plan quoting method. For some tender documents, if the requirements are too stringent, the proposal can be used to increase the proposal method, that is, according to the original bidding documents to report a price, and then propose bidders program. Bidders should seize the opportunity to make more reasonable. The program to attract bidders to help win the bid. This proposal should focus on reducing the project cost, shorten the construction period or make the project performance more reasonable. When using this method to quote, it should be noted that the original plan must be quoted, otherwise it is abolished.

Lower the price suddenly. This method refers to the method of determining the final bid price by means of cutting price suddenly within the final time of bidding. This method emphasizes the time effect. As a general rule, the bidding process is strictly confidential, and competitors participating in bidding often use various channels and take various measures to spy on the situation. Therefore, when compiling preliminary bids, effective precautions must be taken against basic data. In addition, the initial list of quotations may be higher or lower than the conventional standard to confuse the other party. However, the budget engineer and the decision maker must fully separate the unit price of each

item, consider the details of the price reduction, and calculate the magnitude of the price reduction so that the decision can be made accurately in the final stage.

Temporarily lost interest for subsequent profit. This method refers to the bidder's low-cost winning proposal to obtain the project or open up a certain market at the expense of the follow-up project. Bidders adopting such measures must have better credit conditions, and the proposed construction plans must be advanced and feasible and the bids should be full response. At the same time, it is necessary to strengthen the propaganda of the company's advantages and allow the tenderers to work on the proposed construction. And let the tenderer think that the proposal in the tender on how to meet the deadline for the tender documents, quality, environmental protection and other measures are feasible. Otherwise, even if the quotations are lower, it may not be successful. On the contrary, bid appraisers may think that the tender has major defects.

The preferential conditions method. The tender documents clearly allow the owners to provide some preferential conditions in the bidding, such as loans, advances, materials, equipment, etc., then the bidders give the owners some preferential conditions, and solving certain difficulties of the owners is very important for winning the bids.

3. Composition of Bidding Price and Comprehensive Unit Price and Determination Method

3.1 The advantages of comprehensive unit price

The bill of quantities calculation method is to provide the bill of quantities as a part of the bidding documents to the bidders in the construction bidding activities, and the bidders will quote their own quotation based on the bill of quantities. The use of bills of quantities in construction bidding is a bidding method that is compatible with market economy, and it is also an internationally accepted practice. Using the bill of quantities valuation method, the tenderer provides the bill of quantities in the construction bidding process for the bidder to fill in the unit price item by item, calculate the total price, and finally determine the contract price through the bid evaluation. The bill of quantities calculation method as a new and more objective and reasonable valuation method can eliminate some of the drawbacks of the previous pricing model.

3.2 The advantages of comprehensive unit price

When using the unit price of the bill of quantities to bid, the unit price entered by the bidder in the bill of quantities is the comprehensive unit price. The comprehensive unit price includes labor costs, material fees, mechanical fees, management fees, profits, and risk costs. The project price is multiplied by the unit price to generate the comprehensive unit price, and then the fees and taxes are taken into account. The above summary leads to the bid price. The sub-item engineering fees, measure project fees and other project costs are all calculated using the comprehensive unit price, which includes the construction fee, material fee, machinery fee, management fee and profit. The bidding quotation for the bill of quantities is composed of sub-item engineering fee, measure item fee and other project costs. The sub-item engineering fee refers to the various expenses that should be listed in the sub-project of each professional project.

3.2.1 Measures Project fee

Measures Project fee refers to the cost of technology, living, safety and environmental protection before and during the construction of the project to complete the construction of the project.

Safe and Civilized Construction Fees. Environmental protection fee: refers to the various costs required by the construction site to meet the requirements of the environmental protection department. Civilized construction costs: refers to the various costs required for civilized construction on the construction site. Safety construction fee: refers to the various expenses required for safe construction at the construction site. Temporary facility fee: It refers to the cost of temporary buildings, structures, and other temporary facilities that the construction company must establish for the construction of the project.

Increase in night construction fees: refers to the night shift subsidy due to night-time construction, the night-time construction declining effect, the night-time construction lighting equipment amortization, and lighting electricity expenses. Secondary transportation fee: refers to the expenses incurred for the secondary transportation of materials, components and parts, semi-finished products, etc. that cannot be reached due to restrictions on the conditions of the production site.

Construction fee increase in winter or rainy season: refers to the temporary facilities that need to be added during winter or rainy seasons, skid prevention, rain and snow removal, artificial and construction machinery, and other costs. Completed project and equipment protection fee: Refers to the expenses incurred for the necessary protective measures taken for the completed project and equipment before the completion acceptance. Project location retesting fee: refers to the cost of taking off the line and retesting the entire construction during the construction process. Construction additional fees in special areas: refers to the additional construction costs in special areas such as deserts or other marginal areas, high altitudes, alpine forests, and virgin forests.

Entry and exit of large-scale machinery and equipment and installation fees: refers to the whole or separate machinery is transported from the parking place to the construction site or from one construction site to another construction site, and the mechanical transportation to and from the site takes place. Installation at the construction site, labor costs required for dismantling, material fees, mechanical fees, commissioning fees and the cost of supporting facilities required for installation. Scaffolding engineering fees: It refers to the amortization expenses for various scaffolding erection, demolition, transportation costs, and scaffolding purchase costs required for construction.

3.2.2Other project fees

Temporary Amount: refers to a sum of money that the construction unit tentatively includes in the list of project quantities and is included in the price of the project contract. It is used for the unresolved or unpredictable materials, the procurement of engineering equipment and services required for the construction contract, the contractual changes that may occur during the construction, the adjustment of the project price when the adjustment factors of the contract occur, etc.

Daily labor refers to the cost required for the construction company to complete the sporadic projects and projects other than the construction drawings submitted by the construction unit during the construction process. General contracting service fee: It is necessary for the general contractor to cooperate, coordinate the professional project contracting carried out by the construction unit, and store the construction unit's self-purchased materials, engineering equipment, etc., as well as the management of the construction site and the consolidation of the completion data.

3.2.3 Fees and Taxes

Fees: It refers to the fees that must be paid or calculated by the provincial government and the relevant provincial-level authorities in accordance with national laws and regulations. Social Insurance Premium. The pension insurance premium refers to the basic pension insurance premium paid by the enterprise for its employees according to the prescribed standard. Unemployment insurance premiums are unemployment insurance premiums paid by employees for employees according to the prescribed standards. Medical insurance premiums refer to basic medical insurance premiums paid by an enterprise for employees according to the prescribed standards. Maternity insurance premiums refer to maternity insurance premiums paid by employees for employees according to the required standards. Industrial injury insurance premiums refer to the industrial injury insurance premiums paid by the enterprise for employees according to the prescribed standards. The housing accumulation fund refers to the housing accumulation fund paid by the enterprise for the employees according to the specified standards. The project sewage charges refer to the construction site sewage charges paid according to regulations. Other fees that should be listed but not included are calculated based on actual occurrence.

Taxes refer to the business tax, urban maintenance and construction water, education surcharges, and local education additions that should be included in the cost of construction and installation as stipulated in the national tax law.

4. Conclusion

When a construction company makes a bid decision on a civil construction project, it must not only conduct careful analysis of the tender project, but also make judgments and trade-offs based on its own strength. Once it has decided to bid for a certain civil construction project, it is also necessary to determine, based on the situation of company itself and the project, what kind of nature will be for winning the bid or for the development of the enterprise. Of course, in the bidding process for civil construction projects, realizing the composition of the bid price and the method for determining the overall unit price welly, and adopting appropriate bidding and quoting techniques, are more conducive to winning bids and capital turnover for construction companies.

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References

[1] Huihong Feng, Profit Analysis of Construction Unit Based on Bill of Quantities Valuation Model. Coal Engineering. 2014.8:52-56
[2] Huihong Feng,Research on Construction Process Cost Control Based on Project Supervision. Construction Economy 2015.02:84-86
[3] Qinglin Zheng,Bidding Quotation for Construction Projects. Fujian Architecture 2018.03:107-109
[4] Xiangtian Nie,Appraisal of the Rationality of Project Bidding Quotation AHP-TOPSIS Model Application. Yellow River 2017.06:115-129
[5] Lizhi Chen,Details on bid quotations. Residential and Real estate 2018.02:22-23.
[6] Lijuan Wang,Strategies and Techniques for Studying Bidding and Quoting for Engineering. Construction Economic Management 2018.02:246-247
[7] Huiguo Wang,Talking about Bidding Strategy and Decision of Engineering Bids. Doors and Windows 2018.02:48
[8] Jingxia Lu,Budget and Quoting Skills in Project Bidding. Engineering Technology Research 2018.04:195-196
[9] Zhongliu Li,Pricing Strategy for Artificial Units, Materials and Machines in Comprehensive Unit Price .Jiangxi Building Materials 2018.01:190-193
[10] Lezhi Bai,Exploring the Trend of Comprehensive Price Verification in Full Cost .Gansu Science and Technology 2017.07:79-80