

## Research on Project Settlement Review Work

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*Abstract: The project settlement mainly refers to the project that the contractor increases or decreases according to the contents stipulated in the previous contract and the engineering change in the construction process after the completion of the construction project. All the completed projects are completed, and after strict quality inspection and acceptance, the contractor is sent to the contractor. Summary of the calculation of the engineering data carried out. This work is generally prepared by the construction unit, reviewed by the construction unit, signed and sealed according to the contract, and finally processed by the bank [1]. This kind of settlement is due to its unique dynamics (calculated according to the actual quantity and price of the project) and large amount (the cost of engineering construction projects is much higher than ordinary products), and the corresponding audit work requirements are naturally relatively high.*

*Keywords: Project settlement, engineering construction, economic efficiency.*

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### 1. INTRODUCTION

Since the completion settlement is an important basis for the reasonable determination of the project cost, the review of the completion settlement is also the last link to control the investment, which is directly related to the economic interests of both parties, involving the investment benefit of the owner and the economic benefits of the contractor, so whether it is construction or not Units or owners should pay great attention to the settlement of the project price. However, this work is quite complicated. The complexity lies in its work characteristics-the combination of technology and economy. This requires the staff to have a certain multi-directional knowledge accumulation and experience reserve, and colleagues need more. The departments cooperate with each other to coordinate, whether it is the calculation of engineering quantity, the application of budget quota, the reasonableness of the fee collection, or the analysis of visa changes, claim clauses, force majeure factors, etc., can be strict, reasonable and fair. It can effectively prevent price risks and provide more and better rationalization suggestions for the owners, greatly improving economic efficiency and saving costs. Thereby truly achieving the reasonable determination and effective control of the project cost [4]

The corresponding final audit of the final accounts is equally important, because it is the last line of defense that can rule out overestimation and eliminate the cost of unfairly elevated

projects. Even if the review will ultimately help both Party A and Party B (ie, the contractor and the contractor) to strengthen the accounting and improve the economic efficiency, the work content of the work should involve various documents of the project, from the completion report, the completion drawing and the completion acceptance form, contract or construction Agreement, construction drawing budget or contract price, design disclosure and drawing review data, design change and on-site construction change record, construction technology organization measures approved by the construction unit visa, various construction visas or construction records, national or relevant regulations newly issued by the district. These materials must be complete, the corresponding procedures must be complete, and the missing issues must be resolved to meet the specifications. Finally, the editors integrated the audit report, the content of which should not only pay attention to the amount of the post-review price, increase or decrease, but also analyze the influencing factors of the final formation of the project price, the reason for adjusting the amount and the process of continuously correcting the budget.

## **2. BACKGROUND**

The New Hospital Affiliated to Wenzhou Medical University is located in Shangcaicun, Nanbaixiang Street, Ouhai District, and Wenzhou City. It is located beside the “Wenzhou Green Lung” Sancha Wetland, just over 100 meters away from the Wenzhou South Exit of the Yongtaiwen Expressway. The project covers an area of 500.6 mu, with a construction area of 355,000 square meters. The total investment is about 2.3 billion yuan. The medical and technical complex building of the emergency room is the central part of the construction layout. It is currently the largest single medical building in China.

As a landmark medical building in Wenzhou, the new hospital construction project adopts the German design plan and is built according to the highest standards of domestic hospitals. It is a key construction project of the province and city and a municipal key livelihood project. At present, the contract cost office of the hospital is in the settlement stage, and it is necessary to verify the bidding documents, engineering contact sheets, claims and progress payment settlements that have occurred during the implementation of the entire project.

## **3. PROCESS**

### **3.1 Participate in settlement review**

The contract cost department of the First Affiliated Hospital of Wenzhou Medical University (subordinate to the New Hospital Command) is mainly responsible for the project cost management, bidding management, and contract management of the relocation and construction of the new school. Among them, the settlement work is in progress, such as lighting equipment, central air-conditioning equipment, LED electronic display, public display equipment, steam pipe installation and low-voltage distribution cabinets, etc. Construction projects such as the reconstruction of the surgical department on the third floor and the reconstruction of the reproductive center of the old hospital. By participating in a number of

actual settlement audits, familiar with a variety of contract types, and contacting different contractors, gradually accumulate experience, and learn from colleagues in the same department, actively overcome relevant problems, and finally carefully analyze the reasons and summarize the universality. The influencing factors of the project settlement cost, summarizing the interests of both parties, and providing substantial assistance for similar work in the future.

In the first step of reading the documents, the documents related to the project must be repeated (including the bidding documents and supplementary questions, the winning bidder documents, the winning bid notice, the contract documents and supplementary agreements, the meeting copying records, the engineering contact change order, engineering visa form, delivery list, arrival inspection list, settlement documents, etc.). Make sure that the contents of these documents are consistent with each other before and after the file, especially the uniformity of the list of items. Next, proofreading the data in the arrival inspection list or the project completion quantity list and the settlement documents to determine whether the quantity of the project is true and accurate, whether the various quotas, product prices and rate selections meet the local market requirements at that time, and Review whether the final implementation of the entire construction project or individual project is smooth and the quality is safe. Specific content includes:

(1) Review of the amount of engineering work: Whether the quantity of the submitted documents meets the prescribed calculation rules, is it accurate, and whether the settlement items are consistent with the drawings; in addition, for the engineering items that must be measured, the amount of engineering is to be measured in the field. If there are design changes and on-site visas, they should be added later to avoid forgetting.

(2) Review of the unit price: whether the budget quota is compliant, whether the selection is appropriate, and cannot be raised or lowered at will. Special attention should be paid to whether the equipment and material usage are consistent with the rated content or design content, and the correctness of the conversion content.

(3) Review of the fee rate: The fee rate should be determined according to the documents and regulations promulgated by the local project cost management department of the project, combined with relevant documents such as contracts and bidding documents. At the time of the audit, attention should be paid to the timeliness of the fee collection documents; whether the fee schedule executed is consistent with the nature of the project; whether the rate calculation is correct; whether the material for the price difference adjustment complies with the provisions of the document. Whether the basis of the fee for calculation is correct is based on the labor fee or based on the direct fee or the manual plus machine as the fee base. For projects with lower rate or lower total price, pay special attention to whether the change or new project is floating in the same proportion during settlement [5].

Once you have a more accurate digital basis, you need to actively communicate with the contractor, explain the problem clearly, and conduct friendly negotiations. But always follow a principle: the money to be given must be approved, and the money that should not be given

cannot be given. Finally, based on the first three steps of the work, edit the final submission or review file in a fixed format order.

### **3.2 Problems**

The operation of a number of project settlement audits of the First Affiliated Hospital of Wenzhou Medical University (hereinafter referred to as Wenyi Medical) has not been carried out smoothly, and some problems have surfaced. Whether it is document formulation or data unification, more or less need to be renewed. Adjustments and modifications. The specific problems can be summarized as follows:

(1) Contradictions between contracts and other documents: In the first step of reading the documents, all the textual drawings and documents about the project should be echoed in principle and consistent in content. However, in reality, due to the mistakes of the personnel or the auditors, and the inertia of repeated operations of similar projects, the bidding documents, the bidders' bid documents, and the signing of contracts are contradictory. For example, the purchase and sale of Wenyi Medical's low-voltage power distribution cabinet (box), the original bidding documents and the bidder's bidding documents by default, the final settlement should be carried out according to the actual arrival quantity, while the signed contract stipulates that the final settlement should be in accordance with the arrival inspection. The manifest is only a few words, but the meaning is very different. According to the relevant laws and regulations of the "Tendering and Bidding Law", it is necessary to check the conditions of the project in order to carry out the project, and according to the "Listing Specification" and "Contract" The provisions of the Law and so on understand that the order of interpretation of the documents should be (1) winning bid document (2) bidding documents (3) contractual agreement. As a result, there is a challenge for the auditors. It is necessary to communicate with the staff in the early stage to understand their meanings, and to communicate with the company in a timely manner to understand the real situation and then make a final explanation.

(2) The engineering quantity check data is not uniform: the engineering quantity is the basis for calculating all the expenses of the project. The engineering cost will increase with the increase of the engineering quantity, and vice versa. Therefore, the correct calculation of the engineering quantity has great influence on the project settlement cost. However, the probability of problems in the amount of engineering checks is relatively large, and the impact after the emergence must be far-reaching. The reason seems to also show its complexity and diversity.

(3) Quota conversion, easy to confuse, missed miscalculation: At the time of settlement, where necessary, when affecting the price of a large fixed unit price or a comprehensive unit price, it should be reviewed again, there are still discussions before the transaction. For example, the reproductive center reconstruction project of Wenyi Medical Center (No. 96, Fuxue Alley, Wenzhou City), the rigid waterproof casing in the list price quote is not clear enough, and does not indicate its location, if you are wearing a bathroom slab, you need to convert it accordingly. Multiply by the corresponding conversion factor, the cost will be slightly lower. All the rigid waterproof casings are calculated according to the quota and the market price.

Therefore, the installation parts of them are carefully compared. It is found that nearly half of the casings need to be converted, and the overall cost is reduced after the communication with the construction unit. Nearly 2,000 yuan.

(4) According to the confusion, each has its own statement, causing the gap: the basis for settlement and settlement audit must be based on the contract or related documents. Whether it is the arrival of the goods inspection form in the procurement project, or the acceptance of the completed project quantity in the construction project, the settlement and audit work must be justified. In reality, some construction units have compiled their own settlement basis based on the regulations for the sake of convenience, and the idea that the total price is similar to the previous contract price can only lead to waste of resources and time. Over. For example, the steam pipe installation project of Wenyi Medical Qianjian Engineering found that all the sub-projects were not the same in terms of accounting, and the previous contract, and the contact list, and the only one that was consistent was a small amount of arrival. Single, later, after contacting the company, it is known that the other party's settlement method is to measure the contents of the completed project pipeline at the installation site, and directly use the measurement data as part of the project quantity as the settlement content, which is bound to be related to the contract and supplementary agreement. And after the engineering change caused a certain gap, coupled with the measurement may have errors, and did not communicate with the company A to determine, as a basis for settlement is not appropriate.

#### **4. RESULTS AND DISCUSSION**

The reason for the "distortion" of the settlement of Party B's enterprises can be said to be ever-changing, but to avoid the misapproval of funds, the auditors need to check the finals. In the accumulation of settlement work, the common problems can be clearly identified with a single eye, and several corresponding measures and experiences are summarized as follows.

##### **4.1 Resolutely put an end to the false report of settlement fees**

The settlement review process will involve the interests of many parties. It requires the cooperation of many departments to ensure that both self-audit and other trials can be carried out smoothly. It is necessary to obtain the most authentic and reliable test materials and reliable text documents, as a basis for review. It is more convincing. The auditors need to search and organize all the completion acceptance data (including engineering completion drawings, design changes and visas, main material prices and quality and safety guarantees, etc.). If there are difficulties, they must be provided by the corresponding department staff to avoid the interests of all parties. Disputes. Furthermore, you need to go deep into the first site and communicate with the technical staff to understand the real situation on the spot. In addition, the most important thing is that the auditors themselves should have the ability to be familiar with the quota, skillful calculation of the engineering quantity and the ability to prepare the list. This is the most basic condition for being able to be acutely aware of the missing items in the settlement. When encountering a situation of high settlement, pay attention to the original situation, and invite the parties to participate in the discussion and negotiation as much as

possible in a gentle manner, especially for the scribbled visa items in the previous construction stage, to understand the origin of the visa. The loss level of the loss side, etc., for a peaceful solution.

#### **4.2 Standardized uniform text format**

In the process of settlement and review, it is inevitable to involve editing the text of the form. However, since all parties are editing by different people, it is inevitable that they will have their own style in the format. This also adds difficulties to the auditors and wastes a lot of time to adapt. The new format. In order to reduce the error rate and improve efficiency at the same time, unified formatted text is very worthy of promotion. First of all, a certain format has been set up in the bidding documents. The follow-up work, whether it is the acceptance of the goods or the acceptance of the finished project, can continue to refer to the format previously formulated. If the content of the purchase list is arrived at a batch-by-batch shipment, the arrival inspection order may be several or dozens or more, and the settlement staff can do the summary statistics and put this page the summary statistical form is signed and sealed, and the format is consistent for the auditor to check. For the project signed by the original contract and the content that was saved after the subsequent engineering change, it will not be counted in the summary, because there is already a corresponding contact form as evidence.

#### **4.3 Improve the quality of work for settlement reviewers**

The process of review can be said to be a process of inspection. If you want to get rid of the omissions, you can re-check it out according to the oldest method and compare it with the settlement. This will give you a more detailed understanding of the ins and outs of the data. It is also clear at a glance. However, due to the limitations of auditors' audit time, it is necessary to improve efficiency, focus on in-depth inspections, and at the same time, keep a part of the heart and nuance the ambiguity of every possible ambiguity. If there are inconsistencies in the file, first of all, we must first check whether the completed acceptance project is consistent with the paper materials. The content that is more or less must be justified and must be signed and sealed by both parties. . When the auditors have basic professional knowledge and skills, they should be required to have a high level of professional ethics and ethics, and always maintain a scientific and fair position and a meticulous attitude towards this work.

### **5. CONCLUSION**

In short, the settlement audit work requires the cooperation of the relevant personnel and the responsibility of the operators. The problem is always unusual, but it is not unusual, but you can stick to the principle in solving the problem and ensure the interests of Party A without damaging the benefits of Party B.

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