Analysis of Importance of Engineering Survey in Construction Engineering Quality Management

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Abstract: Engineering survey is an important technology applied in the quality management of construction engineering. By conducting engineering survey, it can provide necessary data support and measurement methods for the early exploration, mid-term construction, and later acceptance quality management of construction engineering. In the process of construction quality management, how to apply the engineering measurement technology reasonably becomes an urgent problem to be solved. This article will give an overview of engineering survey, and describe the important role of it, and give some opinions and suggestions.

1 Introduction

The development of engineering survey is the basic premise to ensure the quality of the project, because it can provide accurate data for the subsequent construction and ensure the scientific and reasonable construction. Therefore, the engineering quality management work can not be separated from the support of engineering survey, so in the process of carrying out the management, we must strengthen the engineering survey work, reduce the quality problems caused by the error as far as possible, and improve the project quality.

2 Relationship between Construction Engineering Quality and Engineering Survey

The foundation of the development of construction enterprises is that the engineering quality meets the

requirements, especially in the fierce market competition, how to improve the level of engineering quality management is the key topic discussed by enterprises. The development of engineering quality management often includes many contents, but all its work must be supported by the data of the previous period, which can not be separated from the application of engineering survey work. At present, engineering survey technology is more diversified. As shown in figure 1. Only through more scientific and reasonable engineering survey can the relevant drawings be designed and is also an important basis for judging whether the work is carried out smoothly. For example, the purpose of surveying and laying line in engineering is to provide more accurate direction for the construction of subsequent projects. Therefore, it can be said that engineering survey is one of the technical core of construction project. If the engineering survey work can not be applied effectively, the engineering quality will not be guaranteed.

Figure 1 UAV remote sensing mapping technology

3 The Importance of Engineering Survey in Quality Management of Construction Engineering

3.1 Role in Building Positioning and Foundation Construction

Before carrying out the construction of the construction project, it is necessary to survey the construction site, at the same time to collect the relevant data, to judge whether the design drawings can match the entity site, and to carry out lofting positioning and measuring and controlling elevation. To provide data benchmarks for the next construction link. At the same time, the precision requirement of this project is relatively high, otherwise, the measurement error is likely to cause the hidden trouble of quality. The source of the location data is the result of engineering survey. Combined with specific construction standards and specifications, the allowable deviation value of pile position is generally required to be relatively small. If the error range is exceeded, the original bearing table will be changed, and the design change will often lead to the increase of construction cost. Even because the pile position deviation will be piling again, the construction progress will be affected. At the same time, it will also pose a safety threat to the quality of the project.

In the process of earthwork excavation and foundation construction, because of the requirement of construction quality, because of the requirement of construction quality, the excavation of bottom slab, cap and bottom beam avoids the soil layer below the flexible working face as far as possible, so it puts forward more precise requirements for engineering survey to ensure the depth and precise position of excavation and prevent the quality problems caused by the deep excavation or the confusion of position. It can ensure the construction quality of cushion and brick membrane, and help to carry out the waterproof work smoothly. At the same time, it is

necessary to ensure the specific precision requirements of the height control measurement of cushion and pile head, because this will directly affect the height of the bottom steel bar binding and the smoothness of concrete construction. In the process of engineering survey, the concrete position of the whole wall column steel bar should be adjusted to avoid the large error and reduce the safety accident as far as possible. In addition, especially for some projects with relatively complex structures, it is necessary to adjust them as a whole, to ensure that the quality of strong column steel bars meets the requirements by accurately locating the measuring and laying lines, and to prevent the hidden trouble of quality caused by the displacement and deviation of steel bars in the construction process Questions.

3.2 Important role in construction of main structure

The main work of engineering survey is to carry out many construction elements, such as wall column plane laying, building perpendicularity control, main body elevation control, floor slab, line, member flatness control, etc. The accuracy of wall column plane laying will affect the construction effect of building overall perpendicularity, wall column reinforcement binding and formwork construction. The first working procedure after concrete construction is to measure and lay out the line in order to provide the data basis for the subsequent work, and to find out the problems in the previous construction procedure. Prevent the problem from accumulating and lead to the final engineering quality problem. The measurement and control of elevation data is the basic premise to ensure the application of construction drawings, so as to facilitate the subsequent formwork construction, scientific and accurate reference points can ensure its overall smoothness, In addition, it is convenient to smooth the concrete after concrete. Especially for large-scale projects, elevation measurement is needed, as shown in figure 2.

Figure 2 Wall Structure Measurement Flow the building.

3.3 The role of decoration and decoration in the construction stage

In the decoration stage of the project, the quality problems caused by the main work of the early construction project should be repaired by engineering survey. Therefore, the accuracy and quality of the survey work are required in this link. The main contents of the survey are indoor and outdoor ground elevation control, exterior wall decoration control height control, local components, line construction line measurement, heavy perpendicularity measurement, etc. Among them, the indoor and outdoor ground elevation control line is the main basis for the ground repair during the building decoration, which will have a very obvious impact on the overall beauty of the main structure of the building. The plane laying line of brick masonry is the premise of building according to the design drawing, and the improvement of the measuring accuracy of the vertical control line of the external wall will directly improve the quality of the exterior wall decoration.

3.4 Deformation observation during construction and operation

The adjustment of settlement observation of buildings is not only a comprehensive adjustment to control the overall quality of the construction process, but also a comprehensive analysis of the quality of the inspection and management of buildings in the overall management of the accident or in the overall resource control, so as to ensure the comprehensive quality control of buildings, which can not only obtain first-hand information, but also carry out comprehensive control work for the whole building inspection work so as to carry out deformation observation in the whole quality control, mainly the observation of the displacement of the foundation slope of the building. The settlement observation of the main body of the building and the horizontal displacement observation of the high-rise building can effectively improve the safety and stability of the main structure of

3.5 Role in the prevention and treatment of common quality problems

In general, the quality control of construction projects is mainly focused on concrete, steel bar, formwork and other construction links. The contents of quality control by measuring and laying line include steel bar deviation, flatness control of formwork, flatness of wall column, adjustment of concrete surface, vertical adjustment of outer door and window, etc. If you can't direct this construction Attention will easily lead to the settlement of the main structure, displacement caused by slope and road collapse, building and bridge collapse and other safety accidents. Therefore, it is necessary to strengthen the real-time dynamic deformation detection of the main structure of the building, so as to effectively ensure that the quality of the project will not be affected and to avoid all kinds of serious hidden safety accidents.

4 How to Play the Role of Engineering Survey in Construction Engineering Quality Management

4.1 Set up professional engineering survey team

According to the above analysis of the importance of engineering survey, it is not difficult to find its important role in quality management, so it is necessary to ensure the correct application of engineering survey and improve its accuracy in the construction process. In order to make engineering survey data more accurate and true, and provide help and support for the effective development of construction management. Engineering survey is a systematic work with high technical requirements. In the process of application, the comprehensive quality and ability of operators are required, so it is necessary to strengthen the construction of a more professional engineering survey team. First of

all, it is necessary to ensure that the relevant operators can have enough knowledge of modern measurement theory, at the same time, to learn about the renewal of various new knowledge, to create a professional team with technology as the core and final quality as the principle, so as to continuously improve the construction quality. In addition, it is necessary to increase the coordination and cooperation among the surveyors, because the engineering survey work is systematic, single work. First, the engineering surveyors can not carry out normally, so we must emphasize the cooperation between different personnel. Only when the staff involved in the measurement of each part unite and cooperate, coordinate each other technically and assist each other in their work, can the measurement efficiency and quality of the final project be continuously improved.

4.2 Develop effective measurement plans

By establishing the corresponding engineering quality assurance system, the engineering construction unit can guarantee the construction quality to a certain extent. In the process of project implementation, the construction unit needs to study the contract and technical regulations, and compile the relevant requirements involved in the construction process in the construction survey plan. The staff of the survey should be able to take charge of its related work seriously and ensure the authenticity and scientific nature of the data, so as to prevent certain losses of the project and improve the quality of the project.

4.3 Further strengthen the management of survey plans

In order to control the construction quality efficiently, it is necessary to ensure the management of the plan. Before carrying out related projects, we should strictly proofread and check the reference points, datum lines and reference points provided by the construction units. As long as there is a problem, we should immediately contact the relevant supervision department and its technical units, and accurately determine the authenticity and feasibility of the data. In the process of construction, we should pay attention to two points of work, and strengthen the management of surveying engineering to ensure the accuracy and accuracy of measurement. The second is to examine and evaluate the measurement work of the construction unit to a certain extent. And Ensure the consistency of measurement plan and construction schedule. In this way, the impact of construction schedule on the whole project can be effectively avoided.

4.4 Timely inspection of measurement results and improvement of measurement technical reports

It is necessary to strengthen the authenticity detection of the measurement data, especially to increase the verification of the test report, in order to ensure the accuracy of the engineering surveyors, so as to ensure the quality of the project to a certain extent. In the process of

construction, the implementation of the survey work plan and its measurement report exist as important data and should be strictly reviewed. The survey plan can effectively understand the progress of the construction, the overall requirements of the survey and the relevant basis for the final project settlement.

5 Conclusion

In general, the management of construction quality can not be separated from the development of engineering survey, running through the whole construction link, providing data support for the scientific development of various work, thus effectively providing quality assurance. Relevant departments should pay more attention to engineering survey, increase the careful management of measurement plan, update relevant measurement data report in time, strengthen real-time dynamic detection of measurement data, and make engineering survey play an important role in engineering construction management to promote the sustainable and stable development of construction industry in China.

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