

Construction Progress Control And Management Measures Analysis

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Abstract: The construction schedule control of construction project is within the prescribed period of time to develop a scientific and reasonable plan, and when executed timely check construction progress, the knowledge of construction progress, and then analyzed the construction plan, timely correcting and deal with the deviation, and take effective solutions to promote the project smoothly.

Construction engineering plays an important role in economic development, so it can guarantee the quality of construction.

This paper analyzes the management of construction engineering construction progress control and control methods of construction engineering project, the aiming at the influence factors of construction engineering construction progress, the control and management measures are put forward for reference.

Keywords: Construction engineering; construction progress; control management

1. Significance of control and management of construction progress of construction projects

Construction schedule control is the foundation for the smooth construction of the construction project, and the important role of effective control of the construction schedule is as follows: (1) ensure the effective guarantee of construction period. To control the progress can make its guaranteed time limit, arbitrary construction prophase planning and design of construction progress, the project can be completed on time in a large extent on the construction of the late decide the quality and efficiency, to control the construction progress of the management and supervision of the entire construction process play an important role, make the project can be completed on schedule; (2) The economic interests of the construction unit are guaranteed. The construction project is different from other projects. It involves a longer construction period, more fields and complex procedures. Therefore, controlling the progress of the construction can not only make the construction unit be damaged due to exceeding the expected construction period The risk of greater losses can be avoided, and the construction projects can be more standardized, the construction efficiency can be improved, and the economic losses caused by the construction quality can be avoided, so that the economic interests of construction units can be well protected to some extent^[1].

2. The method of controlling the schedule of a construction project

2.1 Dynamically monitor the progress of the project

Dynamic monitoring of progress refers to the construction project should be based on the actual situation of continuous analysis and comparison of its actual progress and the progress of the plan, if the result is consistent, it

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should be implemented in accordance with the schedule, if the results of the analysis there is a certain deviation , It is necessary to analyze the causes of the deviations and take timely and reasonable measures to minimize their impact on the progress and effectiveness. In addition, after the adjustment of the plan, new factors affecting the construction period will generally appear, resulting in new deviations. Therefore, the reasons for the deviation need to be analyzed and adjusted reasonably. The dynamic control of the construction project is shown in **Figure 1**^[2].

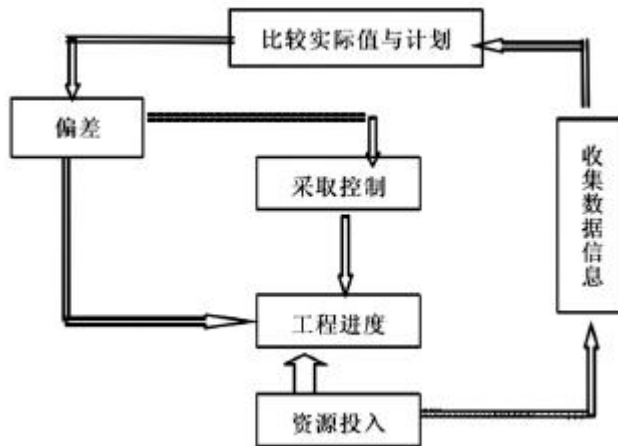


Figure 1; Dynamic control project schematic.

2.2 Check the progress of the project

Check the progress of the project list comparison method, S-curve comparison method, Gantt comparison method, etc., of which S-curve comparison method is applied more, referring to the abscissa and the time to complete the cumulative task to draw the amount S curve, the curve can be used to compare and analyze the planned schedule and the task volume of the completed project in a specific time, and then to derive the relative deviation of the schedule in order to reasonably adjust the project schedule.

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2.3 Update and adjustment of project progress

Analysis of progress deviation. ① Analysis of the work caused by the progress of the deviation is a key work: If the work is more critical, will affect the project to varying degrees, the total duration and follow-up work, you need a reasonable adjustment of the project schedule; If the work is not critical, you need to analyze The relationship between schedule deviation and total time difference and free time difference makes it more clear that the progress of total project duration and follow-up work is more clear. Reasonable measures to update and adjust the corresponding plan; if the progress of the same or less than the total deviation of the time difference, still need to continue to analyze the relationship between progress and freedom of the time difference; ③ the progress of the deviation and free time difference between the analysis: If the progress of the deviation than the free time Large, should take reasonable measures to update the adjustment schedule; if the progress deviation is equal to or less than the free time difference,

you can implement the original schedule.

Adjust the project schedule. ① The adjustment of key work: the key work as an important part of the construction of the project, work time will have a certain impact on the duration of the entire project, it should pay attention to adjust the key work of the project; ② non-critical work adjustments: Time difference caused by the impact of adjustment of non-critical time difference, you can make the use of resources on-site efficiency has been increased, reducing the cost of the project; ③ changes in the logic of the work: In order to minimize the construction period, you can reasonably change the key over the planned duration Or non-critical path related to the logic of the work; ④ Reasonable resource adjustment: Through the use of all construction resources to improve efficiency, make the construction period more reasonable.

3. Factors influencing construction progress of construction projects

human factors. There are many factors that affect the construction progress of the construction project. Among them, the human factors are more important. The reason is that the construction and management of the construction project are artificially controlled. The professional quality and technical level of the staff will directly affect the progress of the project. Therefore, Construction, if the use of advanced materials, technology, equipment and technology, but the limited level of construction workers, will also affect the quality of construction; (2) material factors. Materials and equipment, as an important foundation for controlling the construction progress, will also have a significant impact on the construction progress. For example, some of the construction projects may not be able to supply materials smoothly to the construction site due to problems with suppliers and material turnover. Affect the progress of the overall construction progress; (3) equipment factors. If the construction site equipment more, it is prone to idle situation, a serious waste of resources, and even block the construction site, the smooth construction of the project a greater impact. If compulsory construction and construction, due to construction site constraints, extremely prone to confusion or even lead to security risks accident. On the other hand, if a small amount of equipment is installed on the construction site, the efficiency of construction will be affected and even the phenomenon of nest work will be delayed and the progress of the project will be delayed. (4) financial problems. During the process of controlling the progress of construction project, the capital issue will also have a significant impact on it. The completion of the construction schedule on time can not be separated without the large amount of capital protection. If the cash flow is not working well, it will seriously affect the progress of the project.)Construction Conditions. Construction projects in the specific construction process of the construction environment also has high requirements, climate, geology, etc. will affect the progress of the project to varying degrees; (6) onstruction technology will also affect the construction schedule, if the construction of the use of unreasonable Technology and technology, coupled with the construction plan is not careful enough, do not take timely remedial measures, will have a greater impact; or did not understand the construction specifications, resulting in engineering design changes, thereby affecting the overall progress of the project.

4. Control and management of construction project construction schedule

4.1 Scientific control of construction organization.

When choosing construction personnel, should take the rich experience, the skilled technology as the premise, and requires the technical personnel to hold the post.

Before construction according to the specific situation of the engineering construction feasible perfect construction plan, make the manpower and material resources, financial resources, such as play its biggest role in the construction process, save construction time, when handling the problems of the construction project should be according to the arrangement of the construction contract is reasonable, the head of the technical staff, to make scientific organization on the construction site, ensure meet practical requirements of engineering design.

Therefore, in the construction of the project, to standardize its management, the construction schedule should be

strictly implemented and the construction organization should be properly arranged to ensure the construction progress^[3].

4.2 Reasonable improvement of construction schedule.

In the process of construction project progress management, the construction plan will directly affect the overall project schedule, even plays an decisive role in the success of the project, so before construction should be combined with actual engineering construction plan, detailed needs including design drawings, it should also be set such as procurement, supply of materials, such as security and protection plan as auxiliary, the technology of construction personnel more clear, and analyzed according to the construction of all kinds of situation, and the optimization of construction into interest, develop in line with the project plan, if there is no special circumstances do not allow the change plan, prevent to affect the progress of the project.

4.3 Timely supply of construction site materials.

Also need in the process of building engineering construction schedule management in construction before ready to plenty of materials and parts, contractors need to make the procurement plan in advance, ready to materials and accessories needed for the different processes, and in accordance with the relevant planning requirements detailed in the quality of the material inspection and test, make it accord with the actual engineering demand, which guarantee the construction progress.

Other machinery involved in the construction site of the tower crane as the core of the construction of the power, will influence the progress of the project, for its quality and installation condition so you need to be carefully check, and through the relevant departments of the security certificate, make its monitoring more qualified, only ensure quality of construction site materials and equipment, to promote the project smoothly.

4.4 Pay sufficient attention to construction supervision.

The construction supervision work is also important in controlling the progress of construction projects. The professional staff with rich experience should be responsible for the management and technical guidance, and require the staff to hold the certificate. Before the construction, according to the actual situation of engineering construction of temporary facilities, ready to construction process of the personnel, supplies and equipment, etc., the preparatory work earnestly, to develop a reasonable plan and report to the examination and approval. Supervisors need to grasp the whole project, in the process of effective coordination of various departments, strict supervision of the construction progress, solve various problems found in time, ensure the project completed on time, should also be strict supervision of each design stage, avoid the construction of larger design change, affect the progress of the project.

4.5 Improve laws and regulations to make construction more standardized.

Want to specific to carry out the construction schedule control, must be based on the perfect laws and regulations, through various legal regulations, standardize the behavior of each architects, construction progress to control consciousness is continuously improved.

Also need to build construction organization and management system, according to the actual engineering situation, the construction, design and supervision units, such as the responsibility of the more clear, and an overall understanding of the difficult point of the construction, the details of them seriously, and clearly management schedule management responsibility, on the basis of not affect the overall construction schedule, the project progress management, improve the progress, make the project to achieve its overall efficiency.

4.6 Make use of network dynamic management progress.

With the rapid development of network technology, the construction project progress management and control is also gradually by using advanced technology, innovation management control method, in the specific schedule management for construction projects, using specialized computer software and make the schedule management to

develop in the direction of intelligent and networked.

Managers can take advantage of the network information technology management in the process at different stages of construction progress, using professional software analysis of quantities, the science of construction progress tracking and budget management, through the grasp of the actual progress, scientific deployment of manpower and material resources, and use network software detailed analysis on the relationship between the construction period and cost, achieve the goal of dynamic management of the progress.

Conclusion

To sum up, with the rapid development of economy and urbanization in our country, the construction industry in the face of increasingly fierce market competition, enterprises and construction units to get a seat, will need to be on the basis of engineering quality to guarantee the uplink guarantee construction progress, if you don't have to carry out the construction plan and the construction process and affect the normal delivery, subject construction enterprises of the construction units to larger negative impact, so in order to make the construction progress and guaranteeing the enterprise image, should reinforce the construction progress control and management, the construction efficiency is improved, promote the development of various construction project in China.

References

1. Zhongzhang Liang. Brief Discussion On Construction Site Progress Control Management [J]. Innovation and Application of Science and Technology 2012; (01): 179.
2. Ming Xie. Construction Progress Management Of Dynamic Control Of The Whole Process [J]. Jiangxi Building Materials 2015; (14): 271.
3. Guofeng Lu. Discussion On Engineering Progress Management In Construction Engineering Management [J]. Science and Technology Innovation Guide 2015; 12(09): 215.