Analysis of Material Selection in Mechanical Design Processing

Liu Yanhua^{*}, Qian Na

Jiangxi University of Engineering, Jiangxi, 338029, China *corresponding author

Keywords: Mechanical Design and Processing, Material Selection, Problem Analysis

Abstract: At present, steel structure is widely used in the construction engineering of our country. in order to improve the comprehensive benefit of civil multi-story steel structure module building system, we need to carry out a sound structural management of steel structure module building, so as to adjust the coordination of every link inside the building, so as to meet the needs of construction construction, but also to improve the living quality of the environment. In the actual construction process, there are still many problems in the safety quality management of the building steel structure, and some accidents occur in the construction process, which affects the safety quality of the steel structure. Quality and safety problems also occur frequently. In view of the problems in material selection in mechanical design and processing, this paper discusses the problems in the construction process of building steel structure, and puts forward some improvement measures, hoping to provide new ideas for mechanical designers.

1. Introduction

Steel structure is a new type of building structure, which is now more widely used. In the continuous development of steel structures, although the advantages of steel structures have also attracted widespread attention. If there is a certain safety hidden danger in the quality of steel structure manufacture and installation, it is very likely to cause the occurrence of guiding accidents and even lead to more serious loss of life and property. Therefore, it is very necessary to strengthen the safety management and construction control of steel structures. In this case, researchers developed data mining techniques to improve the overall efficiency of communication networks. The rapid development of network brings new hope for enterprise processing and promotes the improvement of enterprise processing level and quality. In the construction of enterprises, the significance of investment in network technology processing is not only to strengthen the close relationship between enterprises and various departments, but also to ensure the exchange and transmission of information in various links, but also to enhance many business contacts and exchanges, thus speeding up the process of enterprise network informatization and improving the handling level of enterprise modernization. Big data is an innovative technology that can promote the rapid development of enterprises and bring great convenience to the operation and processing of enterprises. For big data privacy protection, it can effectively protect the personal information privacy of every patient [1]. The application of Internet technology makes big data processing have more advantages and the defects in privacy processing are constantly improved. However, the big data security problems in the process of enterprise construction need to be improved and improved continuously, so as to bring practical help to enterprises. Nowadays, major enterprises have entered into the use of big data in information construction. Facts have proved that most enterprises in our country have implemented network information processing. According to the use effect, big data processing technology is indeed much more efficient than manual processing. The development speed of enterprise processing has been greatly strengthened, and the influence of network information technology on the traditional enterprise processing mode is very great. The combination of the two has laid the foundation for the enterprise network information market; Whether it is the enterprise's resource allocation, mechanical equipment, medical supply, patient's consumption behavior can be completed quickly through the network. The combination of big data

processing technology information and enterprise processing provides more scientific and advanced technical means and concrete methods for the development of enterprise processing. Enterprises can integrate big data processing technology with enterprise information processing, form online information processing, and then develop relevant network information software, implement timely and effective online information processing, so as to promote the development of enterprises to implement network information processing mode. The information processing technology of enterprises includes three parts: information processing technology, information database technology and security and secrecy technology [2]. We should establish an information security system to prevent attacks and threats against the processing information system. Establish a complete information database, preferably with a comprehensive record of all information in the medical profession. Pay attention to the security and confidentiality of the database, while keeping the data confidential, but also do a good job of backup, because once the computer hardware system is paralyzed, it will cause the loss of information. Enterprise information processing has been a necessary trend of development. Enterprises should vigorously support and increase the reform of enterprise processing, with the greatest support power to promote the development of information work.



Figure 1 Mechanical design processing

2. Significance of Construction Management of Steel Structure

The building steel structure is actually an engineering structure, which is mainly welded with steel through steel, and then bolted or riveted. Compared with traditional structure, the main advantage of building steel structure is that it can reduce construction cost, strengthen structural performance, improve construction quality and speed [3]. Therefore, steel structures are widely used in some large buildings. At the same time, the steel structure will be used in the construction of large-scale engineering equipment and electricity and other cross-operation, so the safety of steel structure construction is very important.

3. Main Countermeasures to Strengthen Construction Safety of Building Steel Structure

3.1. Repeated Emphasis on Safety During Construction

In the construction process of building steel structure, civilized construction and safety production is a very important link. In structural construction, we must adhere to the principle of "safety first". In the construction of building steel structure, the main feature is that there are more operating points. If in the actual construction process, the construction personnel accidentally fall the parts from high altitude, even the small parts will fall from high altitude. This will have serious consequences. To minimize the risk of these security incidents, a site security team should be established [4]. Construction workers should strictly abide by building codes and standards, but should also establish and improve evaluation methods, civilized construction and safety production

management system. Working construction workers should provide regular or irregular safety education and vocational training to enhance workers' safety awareness. Construction can be continuously improved, steel structure construction site can ensure safety and civilization.



Figure 2 Mechanical design processing

3.2. Preparation before Construction

Before the construction of steel structure, a relatively perfect construction system should be established to make the construction of steel structure proceed smoothly. All kinds of systems can be implemented more smoothly, and the construction site image construction should also be strengthened, and the behavior of the construction site personnel should be conducive to improving the construction site image. Oversight should be standardized in order to improve its efficiency effectively [5]. In the preparation of the supervision plan, according to the actual conditions of the building, the established supervision body should also be scientific and reasonable, so that the construction work can be completed over time. The preparation should be done before the construction of the steel structure, and every detail should be carefully checked to avoid problems.

3.3. Food Safety Control for Selection, Layout and Installation of Tower cranes

In the construction process of building steel structure, tower crane is the main foundation equipment. In the selection and arrangement of tower crane, the construction unit should arrange professional and technical personnel to consider the construction environment on the spot, the arrangement of steel structure and weight and other factors, all of which need to be strictly studied.



Figure 3 Mechanical design processing

4. Concrete Measures of Construction Management During Construction of Steel Structure

4.1. Preparation before Construction

First of all, the construction design drawings should be carefully examined. In the construction process, the main basis is the use of design drawings. Before construction, the construction unit shall organize relevant technical personnel to confirm the construction technical conditions and construction related standard. Secondly, in the installation of building steel structure, the design work of construction organization should be done well, and the main content of construction organization design review must be necessary training. Establish technical management system and quality assurance system, control the node of construction plan, and perfect quality control standard.

4.2. Quality Control During Construction (to be Carried out)

The first problem is to do a good job of quality control in engineering survey, draw up control plan, file measurement records, and analyze the measurement results, and protect the measurement points and lines, and the relevant point line measurement results should be carefully considered. The second problem is that machines and equipment and materials must be carefully manufactured and all aspects of work should be done well.

4.3. Development of Specific Plans for Integrated Development

Strictly implement the construction management measures of steel structure, and effectively achieve "unified planning, unified design, unified development, unified construction, unified management" four "unified ". The construction planning should be based on the adjustment plan under the overall plan. The scope and control of development land formed in urban planning can exceed the control standard of urban development master plan. Urban construction should strictly adhere to the requirements of safety balance and strive to improve the quality of construction. The quality standard of engineering construction needs to be designed strictly according to the requirement of maintaining balance, and the overall quality of construction should be improved.

5. Conclusion

Since entering the 21st century, the sustainable development of our country has become the only way of modern development. For engineering construction to always carry out the idea of peopleoriented sustainable development, at present, the progress of urbanization in our country is gradually improving, so the demand for construction is also gradually rising, gradually appeared in the construction of safety problems, this problem is the first task to be solved urgently. In the process of coordinated development, we should respect the relevant concepts of sustainable development, and then carry out scientific and effective planning according to the specific actual situation, and fully ensure that the overall planning, but also ensure its scientific nature and safety, so as to conform to the natural law of urban construction. The construction project unit should break the actual mode of management in the past. In a word, with the rapid development of the construction level in our country, the construction of steel structure should be strengthened and perfected, and the steel structure can be fully utilized to improve and improve the management system of engineering construction, thus promoting the smooth development of engineering construction. Therefore, in the process of practice and management, construction enterprises should constantly strengthen the systematization and standardization of construction projects, improve the economic benefits and quality level for project construction, so as to promote the effective development of the future prospects of engineering construction, build high-quality buildings for residents and bring high-quality living standards.

Acknowledgements

Fund Project: Science and technology research project of Jiangxi Provincial Department of education, No. gj151300.

References

[1] Wang, Haiping. Analysis of Material Selection in Mechanical Design. Construction Engineering Technology and Design, no. 10, pp. 4042, 2020.

[2] Chen, Xiaobin. Analysis of Material Selection in Mechanical Design. Science and Technology Innovation and Application, no. 36, pp. 100-101, 2019.

[3] Shi, Xuemei., Zhu, Zhuojun., Sun, Linguo. Analysis of Material Selection in Mechanical Design. Construction Engineering Technology and Design, no. 18, pp. 4950, 2019.

[4] Zhou, Mingyu. Analysis of Material Selection in Mechanical Design. Modern Salt Chemical Industry, vol. 45, no. 2, pp. 83-84, 2018.

[5] Hua, Chuanyan., Wei, Jile., Sun, Siping, et al. Discussion on Material Selection in Mechanical Design. Southern Agricultural Machinery, vol. 51, no. 8, pp. 164, 2020.