

Green Construction and Sustainable Development

Ziyu Wang, Charalampos Baniotopoulos

School of Civil Engineering, University of Birmingham, Birmingham, UK

Email: jnz777@qq.com

How to cite this paper: Wang, Z.Y. and Baniotopoulos, C. (2023) Green Construction and Sustainable Development. *Open Journal of Civil Engineering*, **13**, 317-325. <https://doi.org/10.4236/ojce.2023.132024>

Received: April 18, 2023

Accepted: June 16, 2023

Published: June 19, 2023

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Abstract

The past decade has seen the rapid development of green construction in many civil engineering. Green construction of civil engineering can play an important role in addressing the issue of reducing contamination. A common strategy used to study green construction of civil engineering to decrease contamination, decrease waste of energy, and increase utilization ratio of resource. Evidence suggests that green construction of civil engineering is among the most important factors for saving energy. Along with this growth in development of green construction, however there is increasing concern over sustainable development. While green construction of civil engineering presents a promising direction, some of the essential prerequisites can be cumbersome to acquire and can restrict decrease contamination. Therefore the primary goal of this article is through rational use of green construction technology, decrease contamination of water resource, enhance manipulation of electric energy consumption.

Keywords

Civil Engineering, Sustainable, Energy Consumption, Engineering Development

1. Introduction

1.1. Green Construction

Green construction has become a prevalent of concept of building construction technology, which is an idea formed under the background that the country advocates environment-friendly society construction and resource-saving society construction. Green construction in civil engineering usually refers to the selection of cost-effective materials and environment-friendly materials in the construction, and the reasonable allocation of construction personnel and technical

personnel, and the arrangement of staff to the corresponding jobs, so that people can do their duty and make the best use of materials, so as to reduce the waste of human resources and material resources in the construction. On the basis of ensuring the quality of building use, it can always uphold the concept of construction in accordance with the law and the concept of economic applicability, so as to promote the civil engineering construction to achieve better construction results.

1.2. Sustainable Development

The concept of sustainable development is a new development concept and core meaning proposed by the leaders after the implementation of the reform and opening policy, combined with the development situation at home and abroad and the trend of globalization, in view of the doubts and problems existing in our current economic development. The concept of sustainable development is a concept of related development, which is scientific and rational, and can guide the development of countries in a better direction. The actual content of the concept of sustainable development is to make scientific and reasonable planning for future social development on the basis of ensuring the survival interests of contemporary people, so as to meet the production and development needs of contemporary and future generations as far as possible [1]. In the application of sustainable development in the construction industry, it is necessary to make reasonable use of green materials and environment-friendly materials to realize the recycling of materials and equipment. In this way, the impact on the environment can be reduced to a large extent. Under the background of rapid development of The Times, the application of sustainable development concept in civil engineering construction can ensure that the construction industry can keep up with the pace of development of The Times. To follow the concept of sustainable development is not only to adapt to the changes in market demand, but also to adapt to the development of The Times. Through the rational use of sustainable development concept, the construction industry can provide more power for the development of the construction industry, meet the development needs of the construction industry, so as to promote the construction industry to move towards the next stage.

1.3. Literature Review

In civil engineering, here are some issues should be modified:

- 1) Pay attention to the combination of green construction and environment. In the process of implementing specific work, managers and construction personnel are likely to have behaviors that affect the construction site environment, which will have a serious negative impact on undeveloped and used construction projects. In order to prevent this kind of situation, in the green construction of civil engineering, we should pay attention to the combination of construction and environment, pay more attention to the original ecological environment principle of the construction site, and realize the protection of local historical context.

Ensure the implementation of each link of work, can avoid the impact on the construction site environment.

2) Pay attention to the combination of green construction and local climate. In green construction, the contractor should make scientific preparation for the construction scheme and construction machinery according to the specific conditions of the project, and make reasonable planning for the time sequence and construction process of the construction. In particular, attention should be paid to the combination with the characteristics of local climate change. On the basis of correct understanding of local climate change, green construction can not only save more construction costs, but also avoid the impact of climate on the environment to a large extent and prevent cost increase. Using this way can realize the improvement of the environment and enhance the quality of civil engineering construction.

3) Pay attention to the rational application of energy-saving and environmental protection technology and energy-saving materials. In the field of construction engineering, the sustainable development of the construction industry can be achieved through the application of energy saving and environmental protection technology, the overall construction quality and efficiency of the project can be improved, and the energy consumption can be reduced. During the application of energy saving and environmental protection technology, attention is paid to the environmental protection of construction, and environmental protection issues can be fully considered, which can not only improve the construction quality, but also reduce the contradiction between construction and ecological environmental protection to a large extent, shorten the construction period, and realize the scientific control of resource use [2]. In today's civil engineering construction, it is necessary to obtain the protection of energy-saving and environmental protection technology and energy-saving materials, realize the effective control of energy consumption, and provide more convenience for the development of various works.

4) Pay attention to the rationality of the construction scheme. During construction, construction personnel should have a correct understanding of management regulations, norms and construction standards, and carry out construction work in strict accordance with procedures and standards to prevent construction waste and ecological damage. At the same time, the management personnel should conduct an objective analysis of the environmental factors and the influencing factors of the construction. On this basis, the scientific and reasonable construction plan should be formulated to provide effective guidance for the implementation of the construction work of each link, and promote the construction of each link to meet the construction needs.

2. Methodology of Green Construction

2.1. Strengthening Green Management

In the green construction management of civil engineering, more attention

should be paid to green management. Through the implementation of green construction management, it can correctly guide the promotion of green construction, promote the smooth progress of each link of construction and reduce the occurrence of construction quality problems. In civil engineering construction, the application of construction equipment and facilities will cause environmental problems to varying degrees. For example, concrete mixers, cranes and excavators will produce serious noise and dust problems during use. Such problems will not only affect the construction quality and construction progress, but also threaten the health of construction personnel to varying degrees. Based on this, in the construction of civil engineering, it is necessary to put green management into practice. In the green management, the management personnel themselves should have strong management consciousness and management ability. At the same time, they should have a correct understanding of the relevant rules and regulations, laws and regulations and industry standards, do a good job in strict accordance with laws and regulations, and carry out strict management of construction equipment and facilities. In this way, the impact on the environment can be reduced to a large extent, the orderly implementation of various construction work, and the construction quality problems can be avoided as far as possible. Ensure that the equipment and facilities in the process of use, can minimize the impact on the environment, but also can meet the construction machinery and equipment. The operation of mechanical equipment will have a direct impact on the construction. If there are problems with mechanical equipment, the impact on the environment will also increase [3]. Based on this, in the green management, it is necessary to do the maintenance work of mechanical equipment regularly, discover and solve the abnormal problems and failure problems of mechanical equipment in time, so as to prevent problems in the work. In this way, the service life of mechanical equipment can be extended to a large extent, and more convenience can be provided for the construction of each link.

2.2. Strengthen Green Construction Awareness

In the green construction of civil engineering, the construction personnel should have strong green construction consciousness, only on the basis of having strong green construction consciousness, can the green construction be put into practice. Based on this, in the civil engineering green construction period, to strengthen the staff's green construction consciousness as the key and key. In order to achieve this purpose, to do a good job in the construction unit publicity work, to promote the staff can be influenced in the subtle, aware of the important role of green construction, and green construction into practice. At the same time, it is necessary to do the education and training of the staff regularly, to help the construction personnel master more green construction knowledge and strengthen the green construction consciousness of the construction personnel. In the specific education and training process, education and training methods suitable for

construction personnel should be adopted. For example, a wechat group can be created to send knowledge about green construction within the group, and construction personnel can learn the knowledge anytime and anywhere without time limitation. This kind of education and training method meets the needs of contemporary construction personnel, so as to achieve good education and training results [4]. For the content of education and training, it is necessary to conduct timely assessment, through which the staff can clearly learn and work attitude, and only after passing the assessment can they enter the post. In the case of unqualified assessment, the staff is prohibited to participate in the construction. In order to mobilize the green construction consciousness of the construction personnel, the staff with good performance in green construction should be rewarded to ensure that the hard work of the staff can be rewarded, so as to lay a good foundation for the implementation of the follow-up green construction work and the improvement of the construction quality.

2.3. Strengthen Green Construction Organization Perfect

In the green construction of civil engineering, it is necessary to improve the green construction organization, provide correct guidance for the implementation of green construction, and ensure that green construction can be implemented. In the improvement of green construction organization, we should do the following work:

- 1) Improve the green function of construction organization. In green construction, it is necessary to adjust the construction organization structure in strict accordance with the green construction management objectives. Combined with the actual situation of the project, the green construction is integrated into the original construction management organization structure of the enterprise, so as to realize the overall planning of the entire construction work and promote the green management function to be better integrated into the post responsibility system. That is to say, every staff can have a correct understanding of their own job functions and specific work content. To promote the work of each link can be responsible for the special staff [5]. Once there is a problem in one of the links, we can contact the responsible person in the first time to realize the scientific treatment of the problem. Attention should be paid to the improvement of post organization system. Project manager is the first responsible person for green construction management; the deputy manager is responsible for green construction scheme management and construction technology management; the chief engineer of the project needs to audit the green construction technology and workflow to promote the green construction to achieve better results.

- 2) Strengthen the optimization of green construction scheme. The staff should have a correct understanding of the overall requirements of green construction, take the green construction target as the basic guarantee, and start from the actual point of view of the project, do a good job in the design of green construc-

tion scheme, ensure that the green construction scheme designed can meet the construction needs, and promote the mutual unity between the construction quality, enterprise benefits and green environmental protection. To achieve energy saving, environmental protection and consumption reduction to the greatest extent. In the optimization of the green construction scheme, the staff should do a good job of investigation in advance, understand the local environment, climate, topography and geomorphology, and formulate the green construction scheme on the basis of a comprehensive understanding of the specific site conditions [6]. In the green construction scheme, it is necessary to make clear provisions on the use of green construction materials and green construction technology, so as to ensure the scientificity and rationality of the construction scheme and improve the operability of the construction scheme. After the completion of the construction scheme, the green construction scheme should be submitted to the relevant departments for review. If there is any unreasonable situation found in the construction scheme, it is necessary to timely assist the designers to make corresponding adjustments to the scheme content, so as to ensure that the green construction scheme can provide more convenience for the subsequent construction. Through the optimization of the green construction scheme, the green construction consciousness of the construction personnel can be strengthened, and the green construction of each link can be in line with the stipulated standards.

3) Strengthen green construction site and process management. In the stage of civil engineering construction, the staff should realize the scientific division of the construction area based on the site engineering environment, for example, the construction site can be divided into office area, living area, construction area, etc., to lay a good foundation for the high-quality implementation of each link of the construction work [7].

3. Results

3.1. Rational Use of Advanced Building Construction Technology

In order to realize the sustainable development of civil engineering, it is necessary to make reasonable use of advanced construction technology. With the continuous development of the construction industry, many advanced technologies have been developed and applied in civil engineering construction, bringing a lot of convenience for the construction work. Based on this, construction personnel should pay more attention to concrete construction and reinforcement construction according to the actual situation of engineering projects [8]. The national researches on green construction technology of building should increase inputs, organize professional technicians to do research and development of green construction technology, through this kind of method can promote the development of green construction technology in our country in a better direction, and keep up with the pace of development of construction industry. In this process, also need to other countries advanced building green construction technology for reference and application, combined with the actual development of

construction industry in our country to realize the optimization of building green construction technology, ensure that the green construction technology can keep up with the pace of development of The Times, to achieve the sustainable development of civil engineering industry.

3.2. Pay Attention to Saving Water

In civil engineering construction, more attention should be paid to water saving, which requires the construction personnel to have a strong sense of water saving, and to restrict and standardize their construction behavior, so as to prevent the waste of water resources. In civil engineering construction, a lot of water resources need to be used, and the utilization of water resources should be planned scientifically and reasonably [9]. For example, during concrete production and concrete pouring, the use scale of water resources should be controlled reasonably to avoid a large amount of water waste. Reclaimed water utilization measures or other measures can be adopted to improve the utilization rate of water resources. The water use behavior of the construction personnel should be supervised. If the construction personnel waste water resources during construction, the supervision personnel should immediately stop and punish such construction personnel. In this way, the water-saving consciousness of the construction personnel can be greatly enhanced, so as to restrict their own work behavior in the future construction.

3.3. Strengthen Control of Electric Energy Loss

In civil engineering construction, more attention should be paid to power loss control. A lot of different mechanical equipment will be used during construction, and the use of mechanical equipment will consume a lot of electricity. Therefore, when the mechanical equipment is in the state to be used, the staff should turn off the power in time, which can reduce the power loss, and the service life of the mechanical equipment can be extended. In addition, in the green construction of civil engineering, it is necessary to rationally choose energy-saving and environmental protection equipment, which can fundamentally reduce the power loss and prevent serious waste. Staff themselves should have a certain awareness of power saving, in the construction can be timely shut down equipment, on the basis of meeting the needs of all aspects, can achieve the effect of energy saving and environmental protection.

3.4. Strengthen the Control of Construction Materials

It can be seen from the previous civil engineering construction that there is a serious waste of construction materials. The waste of construction materials will not only lead to the increase of construction cost, but also may affect the construction progress. In order to prevent this kind of situation, it is necessary to do a good job in the control of construction materials, to ensure that the selected construction materials have the performance of energy saving and environmen-

tal protection, and have a strong cost performance. During the procurement of construction materials, special staff should be arranged, and the staff should have a correct understanding of the procurement plan and procurement standards. Before purchasing, a comprehensive investigation should be carried out to understand the market price, quality and performance of construction materials, as well as the supplier's qualification, reputation, energy conservation and environmental protection [10]. Ensure that on the basis of correct understanding of such content, implement the procurement of construction materials, ensure that the procurement of construction materials can meet the requirements of green construction. For the use of construction materials to carry out comprehensive control, arrange special staff to do a good job in and out of storage management, strict control of construction materials into and out of storage, to promote leaders, staff can have a correct understanding of the specific flow of materials, to prevent the waste of construction materials, which can play a good role in promoting the sustainable development of civil engineering.

4. Conclusion

To sum up, for green construction and sustainable development, civil engineering construction personnel should pay more attention to it and put it in an important position in construction. In the construction of construction materials can be comprehensively controlled, strengthen the consciousness of water saving and power saving of construction personnel, promote the construction of each link to achieve the effect of energy saving and environmental protection, to achieve the healthy and stable development of civil engineering industry.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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