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The sustainable and coordinate progress of construction and environmental protection

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Abstract. It is the common goal of all mankind to advocate green environmental protection, control environmental pollution, reduce energy consumption and achieve sustainable development. At present, although our country pays a certain degree of attention to environmental protection, and the enterprises and constructions that produce a lot of pollution have been treated, in the long run, the form of environmental protection is still severe and unforgivable. Finding a balance between the contradictions of the project side and the owner side, the successful completion of the construction while reducing the environmental impact, and the protection of the environment in the urbanization process always come before the construction. Improving the content of each stage of building construction under the premise of environmental protection is the ultimate balance for the two. Environmental problems that arise should be actively resolved and summarized to form an institutionalized and standardized management system. This study aims to conduct an in-depth discussion and analysis of both architecture and the environment. This will lay the foundation for the infiltration of the concept of environmental protection during construction in the future and will promote the sustainable development of the construction industry at a lower environmental cost in the future.

Keywords: environmental protection, building construction, sustainable development, coordination, energy consumption.

1. Introduction

The development of society inevitably requires the consumption of natural resources, but natural resources are limited. Sustainable development has always been an important theoretical basis for the stability and sustainable development of human society, and the contradictory relationship between construction manufacturing and environmental protection is even more obvious. In recent years, with the rapid development of China's economy, the urbanization process has accelerated significantly, and a large number of engineering constructions have appeared. The construction of buildings has strongly contributed to rapid economic development, bringing a large amount of greenhouse gas emissions. The general increase in global temperature and the frequent occurrence of El Niño phenomenon also brings great pressure on the ecological environment [1]. The environment is slowly polluted, the land gradually degrades and loses its original economic value and ecological value, and the flora and fauna in the environment and their habitats are severely damaged. Taking a large building in Beijing as an example, a variety of heavy metals and harmful environmental and ecological risk factors were detected in the

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surrounding environment of the building seriously exceeded the specified value, which not only seriously endangered the normal life and work of the surrounding residents, but also hindered the protection of the environment and the coordinated and common development of the city [1]. As an important part of the environment, architecture plays a huge role and the environment is also related to the long-term development of the construction industry in the future. Coordinating the sustainable development relationship between architectural planning and environmental protection will help alleviate the tension in environmental resources and is of great significance to promote harmonious development [2]. Through the theory of sustainable development, mature urban environmental planning, and advanced scientific green waste disposal solutions, a new balance between construction and environment can surely be achieved. Green civil construction is an ideal long-term development model that is reflected in the whole life cycle of a building. The limited resources force us to be more efficient and professional in architectural planning and management and more systematic and scientific in the supervision and protection of the environment. This research mainly starts with the preplanning of the building and the construction of the building. First of all, during the construction process, there will be many conflicts and games between environmental protection and interests, while the relationship between the environment around the building, protection and long-term revenue recovery needs to be considered with green thinking and long-term thinking [3]. Secondly, after the completion of the project, the construction waste and waste generated during the construction process need to be centralized, and the later work should also be centered on green environment, improve environmental testing and management, and do a good job of environmental protection in the later stage [4]. The environmental protection issues of the whole building life cycle are studied and discussed in depth, and the significance of sustainable building planning and environmental green protection is deeply understood through relevant policies and case studies [5].

2. Influencing factors of sustainable development in built environment planning

2.1. Site selection and design of pre-construction planning

In the early stage of architectural planning, the site selection and design of buildings should comply with the basic principles of adapting measures to local conditions and environmental protection. The principle of sustainable development should be brought into full play, and the environment should be investigated in detail and scientifically in the preliminary planning and design of architectural design. Surveyors discuss the feasibility and safety of construction and use of engineering buildings when conducting geological surveys and selecting engineering sites. This can not only save some unnecessary costs in the later construction and reduce the difficulty and economic cost of construction, but also improve the actual benefits and expected goals of the project and provide a sufficient theoretical basis for the implementation of the next project. It can be seen that scientific and detailed site selection and planning in the early stage of construction are very necessary [2]. After doing the survey work, the project designers will scientifically select the building address according to the data collected by the survey, such as avoiding geologically unstable areas, subsidence areas, and high-yield fertile fields and other pre-survey data play a good predictive role for the construction of the project, combined with the corresponding climate zone, average temperature, rainfall, environmental particularity, growth environment of plants and some cash crops, local customs and habits, the cultural monuments, humanistic landscapes and the design effective service life of buildings, planning, design and construction are carried out according to the important principle of adapting to local conditions [2]. While doing these tasks well, attention should also be paid to the protection of the environment, including the natural environment and the human environment. Natural resources are limited, and the design of buildings needs to fully consider energy consumption and effective recycling to minimize the impact on the natural environment [2]. For example, the design orientation of buildings should follow the geographical orientation, which can a large degree of natural lighting saves a large part of electricity consumption. In areas with strong sunlight, solar panels installed on the roof can convert solar energy into electrical energy and store it for daily emergency production and life, which also makes life green

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and protects the environment [3]. In addition, the location of the building should also consider its characteristics in the local transportation network, taking into account the rationality of the building in urban planning and the convenience of transportation for people's production and life, and making a good long-term plan, which not only helps the building to reach the expected design life cycle but also makes the building play a positive role in the environment [6]. The two can mutually promote common sustainable development. In order to achieve this, the initial site selection and design of architectural planning are very important in the life cycle of the building. A scientific and detailed investigation should be done when selecting the building site to determine the focus of architectural planning and environmental protection. Equal importance is given to the work so that the development and use of the building and the environment can be adapted to the local conditions.

2.2. Environmental protection involved in construction

During building construction, it is not only necessary to pursue the maximization of benefits, but also to pay attention to the protection of the environment. The current project construction and economic development have brought huge impacts and many serious problems to the natural environment. Construction waste is dumped randomly, construction waste gas is not discharged up to standard, construction wastewater is discharged illegally, illegal construction is below construction standards and many other problems need to be solved [7]. These problems are not only related to the development process of the building itself, but also affect the effective protection of the environment. If the environment cannot be well protected, it will not only affect the progress of the project, but also irreversibly damage the environment. Many buildings were built in areas where serious pollution problems existed, but were not taken seriously. For example, air pollutants generated during construction, random discharge of sewage, and carbon emissions. As a huge energy-consuming industry, the construction industry’s pollution mainly comes from the material preparation stage and the construction operation stage. According to statistics, in 2016 alone, the pollution caused by domestic projects accounted for 51.41% and 44.89% respectively [8]. In the context of such high energy consumption, the environment is also close to the critical value it can bear. How to minimize the impact on the environment has become an urgent problem. Because of the national and social characteristics of China, there is a very direct relationship between the regional economy and the environment [3]. If the environment and the building cannot be developed in harmony, and the environment is ignored during construction, the economic development of the region will suffer [9]. Growth in the short term but stagnation or even shrinkage in the long run. Green water and green mountains are mountains of gold and silver, which is an eternal principle [10]. The issue of protecting the environment after the construction of a building cannot be relaxed. Greening can improve the affected natural environment and it is also an improvement of the quality of people's living environment [4, 10]. The environment is always prior to the development of the building. If people only pursue immediate interests and lose the fundamental protection of the environment, it will be more than worth the loss or even irreparable. Environmental protection must be carried out from the beginning to the end during the planning, construction and later completion and maintenance of the building, and the major issue of environmental protection must not be neglected by making short-term profit the ultimate goal. The sustainable development of buildings has not exerted its economic promotion effect on the environment. Therefore, the protection of environmental science majors is not only integrated into the construction of construction projects, but also supports the great development of buildings in the environment. Coordinating friendly development and a balanced relationship between buildings and environmental protection is the major premise of economic development, and it is also the major premise of construction in the environment. Among them, it is fundamental to play an important role [4, 10].

2.3. Green treatment of construction waste and surrounding environmental protection.

Construction waste is inevitably generated before and after the architectural design planning, construction process, and recycling and green reuse of construction waste as much as possible to reduce environmental pollution by unfavorable factors [11]. The construction process has been accompanied

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by the generation of construction waste, which is a big problem in construction projects. At present, the more common treatment method is to first screen the garbage and recycle part of the usable garbage. For construction waste with larger particle size, it is crushed and then re-screened and recycled again [12]. In the recycling process of construction waste, there are also dust pollution and CO_2 emissions, which cause certain pollution to the environment. How to reduce the secondary pollution of construction waste, reduce the impact on the environment, and achieve sustainable green recycling and effective recycling Utilization is critical [13]. When dealing with construction waste and garbage, the environment can be detected in real-time, and the concentration of harmful substances can be determined. Improving the ability to detect harmful substances in the environment depends on the development of science and technology and the efficient classification and management of construction waste resources. Environmentally friendly and green materials can be selected at the beginning of the use of building materials so that the use of materials can be controlled from the source to ensure a high proportion of green materials. If it cannot be done at the source, it should be done during the construction process Strictly abide by the regulations and suggestions of the relevant environmental protection departments, and the construction unit consciously does a good job in the control and internal disposal of hazardous waste. If there is no reasonable and effective way to solve the construction waste in the end, it should follow strict waste sorting procedures. Conduct preliminary screening of construction waste, separate them in turn, and use different methods and means for processing according to their respective properties [14]. Construction waste can be disposed of near the construction site or in the factory However, one thing is the same, their purpose in the process of garbage disposal should be to reduce the secondary adverse impact on the environment when dealing with construction waste. During the processing of construction waste, environmental issues should also be paid attention to. Although the construction has been completed, environmental protection issues cannot be slack. There are two issues that need to be considered in the process of disposing of construction waste, one is whether the method of disposing of construction waste is green and environmentally friendly, whether the resources are fully recycled and reused, and whether the method of disposing of construction waste has a small enough impact on the environment; the other It is also necessary to pay attention to whether the green treatment of garbage has an impact on the selection of treatment sites and the surrounding environment during the treatment process[15].

3. Implementation of laws and regulations and related industry regulations

Adjust the relationship between architecture and environmental protection at present, the problems of architectural planning, design, construction and environmental protection are still not properly resolved, and there are still relatively large conflicts, which first need to be implemented at the level of laws, regulations and relevant industry regulations [16]. The construction in some areas violates the regulations without meeting the minimum standards of environmental requirements. There are many illegal construction activities without the qualifications of the relevant environmental protection departments. Construction projects and relevant local departments do not dare to act [17]. Relevant departments and functional institutions should take the initiative to undertake the responsibility of reviewing, supervising and managing engineering projects, thoroughly check illegal projects, strictly stop and rectify construction operations that have a huge impact on the environment, and give full play to the role of national departments in regulating construction development and the environment. The positive role of contradictions between protection. During the building construction, there was no professional personnel on-site to guide and supervise, and no reasonable questioning and suggestions for urging corrections were made on illegal and illegal construction plans and construction methods. These problems need to be followed by national departments and internal reflections of the industry. Perfect. Problems such as the random stacking of engineering materials, illegal treatment of sewage, and illegal expansion are particularly prominent. The existence of these problems not only hinders the development of the construction industry but also hinders the process of environmental protection. In the completion and acceptance stage of the building, the lack of professional knowledge of relevant personnel not only affects the safety and service life of the building but also buries hidden dangers in its

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surrounding environment. The integration of the building's own impact and the surrounding environment of the building is evaluated to examine whether the construction project is green and friendly and whether it can be sustainable for a long time. There is a lack of scientific review and management of construction projects. In the process of architectural planning, construction and completion, there are indeed many problems in environmental protection that have not been fully resolved. This requires not only the relevant environmental protection departments to pay attention to such problems, but also the construction party. Being able to have the awareness of self-environmental protection and carry out self-supervision during project implementation. Under the rules, the construction industry will develop in a healthy and sustainable way towards a greener and more environmentally friendly model.

4. Conclusion

This paper explores the relationship between construction and environmental protection and focuses on how to achieve sustainable development. This paper shows that the impact of the construction industry on the environment is very large, so it is necessary to adopt sustainable development methods to protect the environment. The main conclusions are as follows: the construction industry has a very large impact on the environment, including energy consumption, water resource utilization, waste generation and pollution discharge etc. Therefore, it is necessary to adopt a sustainable development method to reduce these impacts. Sustainable development methods include the use of renewable energy, the use of energy-saving measures, the use of renewable materials, the implementation of green building design, etc. Green building design is an important aspect of sustainable development. It includes building energy efficiency, indoor environmental quality, water resource utilization efficiency, and the environmental impact of building materials. Green building design can improve building sustainability, and reduce energy and water resources. Use, reduce waste generation and pollution discharge. The government, construction industry and the public can promote the sustainable development of the construction industry. sustainable development; the public can participate in the design and use of the building, promoting environmental protection. Finally, this text also puts forward some future research directions, including research on the relationship between architecture and city planning, research on the cost benefits of green building design, research on evaluation standards for sustainable architecture, etc. Adopting a sustainable development method can reduce the impact of the building on the environment, and improve the sustainability of the building. The government, the construction industry and the public can all promote the sustainable development of the construction industry, making a large contribution to the realization of the sustainable development goal.

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