



Study on the main points of eco-environmental management during engineering construction

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Abstract. With the progress of society and the development of the economy, the development level of engineering has been continuously improved and strengthened, which is particularly important for promoting the construction of China's nationality and the construction of the Belt and Road. The development of highly structured engineering has brought great convenience to our life and work, but it has had a certain impact on all aspects of the environment during the construction of engineering, and caused the water and rustic aspects of the ecological environment. Different degrees of damage. This paper mainly analyzes the environmental problems in engineering, such as chemical pollution of soil, dust pollution of air and chemical pollution of water quality, and proposes corresponding environmental protection measures in the process of engineering construction.

Keywords: engineering; ecological environment; environmental management

1 Introduction

Civil engineering is a general term for the science and technology of building various types of engineering facilities. It refers to the applied materials, equipment and the technical activities carried out in the survey, design, construction, maintenance, maintenance, etc., and also refers to the object of engineering construction. It is also directly and indirectly for human life, production and military services, research, and construction on the ground or underground, on land or in water, of all kinds of engineering facilities, including houses, roads, railroads, pipelines, tunnels, bridges, canals, dams, ports, power stations, airports, offshore platforms, and water supply, drainage, and protection works. Since these buildings are composed of systems with different functions, they have a great impact on the surrounding environment, especially some construction projects related to water that can cause serious environmental pollution. In recent years, with the rapid development of the project, the environmental pollution problem caused by the project has become increasingly serious, seriously damaging the ecological balance and affecting people's living environment. At the same time, due to the large population in China, the economy is still in the stage of rapid development; therefore, the impact of the construction of the project on the

consumption of resources is huge, resulting in a large number of pollutants being released into the atmosphere, so that the air is seriously polluted, damaging the natural environment. Although the project provides great convenience for our lives and work and promotes the continuous development of society and the improvement of people's living standards, it also facilitates the appearance of various environmental pollution problems in the construction of the project. Since the study of environmental pollution in China started late, there are many construction projects with serious pollution in China. In this context, it is important to find such problems and analyze and solve them.

2 The impact of engineering on the environment

2.1 Impact trend analysis

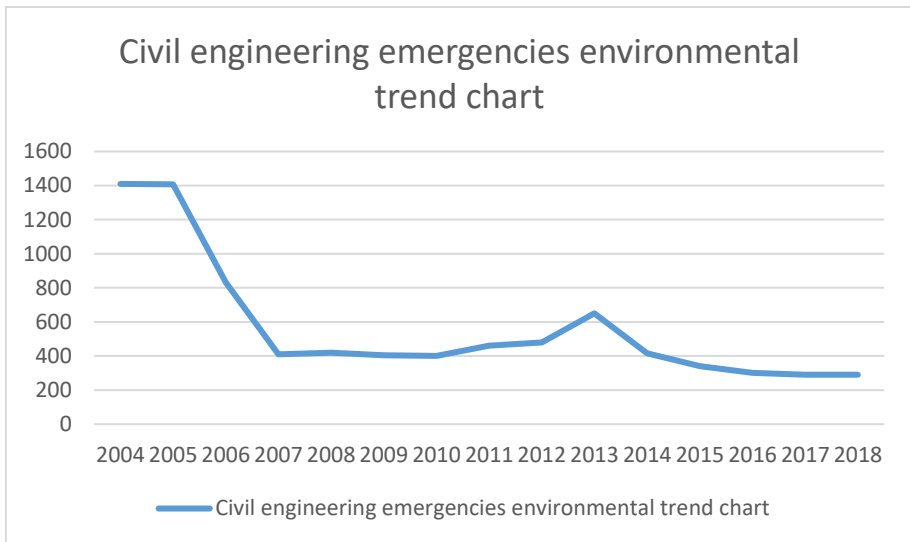


Fig. 1. Changes in the number of environmental impact events in engineering

From the figure, we can see that over the past decade, with the strengthening of people's awareness of the environmental protection of the ecological environment, the environmental protection problems in engineering have shown a downward trend year by year.

Before 2007, the country's sudden environmental impact time in engineering reached 1400 or more per year, with an average of nearly 5 per day. Since the introduction of sustainable development in 2007, the number of environmental impact events has plummeted. Since then, the number has remained stable at around 400. Although the number has plummeted, we can also see through calculations that it is still an average of one per day. The room for improvement at this level is still very large. In 2013, the number of ecological environment bursts in engineering increased.

An important reason was the introduction of the concept of green mountains and green waters and the extreme attention of the government, which led to stricter enforcement in the year.

2.2 Specific impact angle analysis

During construction, the raw materials used for construction are not professionally processed, and the harmful substances and harmful gases generated are dispersed in our living environment, leading to air and water pollution. Since these buildings are composed of different functional systems, they have a great impact on the surrounding environment, especially some construction projects related to water that can cause serious environmental pollution. During the construction of the project, the chemical raw materials used are not professionally processed in advance, and the toxic and harmful gases of the chemical materials are discharged into the atmosphere, causing serious air pollution. In addition, a large amount of garbage produced during the construction of the project will also pollute water sources. Meanwhile, the chemical composition of Dali wastewater during the construction period is high without professional filtering treatment and is discharged into the sewer, which damages the normal index of groundwater pollution and water pollution.

Evaluation index		Water environment indicator	Atmospheric environmental risk indicator	Comprehensive environmental risk indicator	
Environmental risk source intensity (S)	Environmental risk source	Number of environmental risk enterprises per unit area	Need	Need	Need
		Ratio of environmental risk material stock to critical mass per unit area	Need	Need	Need
		Percentage of environmental risk companies with a higher environmental risk rating	Need	No need	Need
		Assess the number of regional port terminals	Need	No need	Need
		Port terminal hazardous chemicals throughput	Need	Need	Need
		Number of dangerous chemicals transported by road	Need	Need	No need
		Number of oil and gas exploration facilities	Need	Need	Need

Environmental event impact	Number of environmental incidents and environmental complaints	Number of environmental complaints	Need	Need	No need
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Fig. 2. Environmental impact assessment indicators in engineering

From the fields covered in the table, we can clearly see that our living environment has deteriorated over the years. Although construction is not the only factor in environmental issues, its role in environmental change cannot be underestimated. Every city in the process of urbanization is undergoing large-scale engineering, and engineering construction will inevitably bring a series of problems to the urban environment, such as noise pollution, light pollution, water pollution, dust and construction waste during construction. Emissions and other factors will cause irreparable harm to the environment on which humans depend. Thus, major environmental problems in construction are identified, and necessary measures are taken to prevent them and reduce the environmental impact brought by construction as much as possible, which is an important issue in the current urban environmental protection work and construction. Sources of noise pollution at construction sites include excavators, bulldozers, transport trucks, pile drivers, and cutting machines. Since these machines generate a lot of noise and make the surrounding residents feel uncomfortable, people are often exposed to noise pollution during the construction process, which causes a certain degree of harm. Among the construction pollutants, noise is the most serious and common problem. With economic development, people's living standards improve, buildings are getting higher and higher, and the number of high-rise buildings is increasing, which requires that the building function meet the needs of safety and comfort, and to achieve this goal, we must reduce the degree of vibration and noise control in the building. The present buildings are mostly reinforced concrete frame structures, where concrete has to be mixed, conveyed, and poured. Therefore, mechanical operations and other production activities in the building are generating a large amount of dust and noise, which will have a serious impact on the environment if not managed in time. These construction links are where the main noise sources during construction are located.

In addition, most of the project construction sites are close to urban areas with many residential areas and a dense population. Due to these reasons, the environmental condition of the project site is relatively poor, especially on the main road with heavy traffic. Most of the equipment used in the construction of the project is large and loud, which makes the project cause noise pollution to nearby households during the construction process. At the same time, the noise spread to the surrounding buildings due to the improper operation of the construction personnel. It seriously affects the normal lives of the residents. Due to the presence of noise, the construction workers will experience emotions such as irritability and restlessness. Some construction units also work at night to improve construction efficiency, which has a greater impact on the sleep quality of nearby residents.

3 Measures for ecological environmental protection in engineering

3.1 Targeted solution

Dust is the main cause of air pollution during the construction of engineering. In order to effectively reduce the environmental pollution caused by dust during construction, it is possible to carry out regular drinking water work on the site of the site to reduce the dust in the atmosphere. For the material with a large amount of dust, it should be in the process of handling and loading and unloading. The wet warehouse is carried out, and the safety and sealing of the warehouse must be ensured to prevent dust leakage. Construction site trash should be removed in a timely manner. In the construction waste removal process for high-rise buildings, custom iron-covered iron drums or lifts are used, or permanent dumps are used. In the process of construction site stacking, the pile of soil should be reasonably selected for stacking and sealed with sprinkling film or the surface temporarily cured or cultivated to prevent on-site dust pollution. The road on the site should be hardened. Coke residue, the application of graded gravel, concrete, etc. Used as road surface layer, with conditions, take permanent road, and send special personnel often sprinkling water cleaning maintenance, prevention of road dust, etc.

During the construction of the project, solid waste pollutants shall be strictly divided by components, as well as professionally treated. In addition, there will be special solid waste at the construction site. There is no pile of solid waste on the site. Solid waste shall be properly disposed of, not casually processed and discarded, but must be handed over to professional departments for scientific processing.

The construction site has a special warehouse to store oil and chemical solvents, etc. The floor and 250-mm-high walls of the warehouse must be treated with impermeable materials, such as impermeable concrete or impermeable paint, etc. In the application of requisitioned materials, measures should be taken to eliminate the pollution of water bodies by running, adventitious, dripping, and leaking oil. It is forbidden to pour out the wastewater discharged from the on-site gas welding acetylene generator tank anywhere. Special containers are required to be placed centrally and poured into the sedimentation tank to avoid pollution of the environment. a temporary canteen for more than 100 people on site. In the process of sewage discharge, a simple and efficient grease trap can be established to drain oil regularly and remove debris to prevent pollution of water bodies. A construction site's temporary toilet septic tank should take impermeable measures to prevent pollution of water bodies. Construction site chemicals and admixtures are properly stored to prevent pollution of water bodies

3.2 Construction waste recycling

In the process of engineering construction, it is necessary to further increase scientific research investment and policy support for solid waste utilization and disposal technology, encourage scientific research in the field of solid waste pollution prevention and recycling, and accelerate the development and promotion of new practical tech-

nologies such as product maintenance and remanufacturing. , build a professional platform and talent team, relying on scientific and technological innovation to promote the reduction, resource and harmlessness of solid waste. At present, the production cost of resource recycling products is generally high. The phenomenon of "circulation" but not "economic" is more prominent, and the market competitiveness is limited. Enterprises that are truly resource-utilized are often low-profit enterprises. Government support should be strengthened, and promotion and application should be strengthened. Government procurement should give priority to renewable resource products, explore government and social capital cooperation models, create a group of leading enterprises with demonstration and driving effects, and promote the comprehensive utilization of resources into a benign development track. To promote the recycling of solid waste, the producer responsibility extension system should be implemented, the market mechanism should be fully utilized, and the production enterprises should be encouraged to attach importance to the establishment of a product recycling system and accelerate the standardized recycling and recycling of waste products.

After the construction waste is sorted, crushed and sieved, most of it can be reused as recycled aggregate resources, such as waste iron wire, discarded steel bars, discarded wires and various waste metal parts. After sorting, centralized treatment, and re-heating, it can be processed into steel of various specifications. Waste bamboo and wood chips can be used to manufacture various artificial boards; the broken materials can be used as a base for road construction. Materials or basic materials can also be used to make burn-free bricks, diced bricks, etc. The concrete in the construction waste can be processed to obtain conventional stone materials, which can be used as foundation materials for construction or road foundation. The finished product of construction waste can also be used to make lightweight aggregate concrete, light slats for building partitions, small aggregate hollow concrete blocks, and capable of producing recycled aggregate building boards and recycled aggregate mortars. Recycled products. According to the general amount of discarded waste concrete, the landfill can be reduced by an area of 1,000 mu per year. Compared with the sintered brick, it can save thousands of acres per year. At the same time, the construction waste pollutes the water body, pollutes the atmosphere, pollutes the soil, affects the city appearance and environmental sanitation, and has a large degree of relief, thus saving the country a large amount of garbage disposal fees and pollution prevention costs. It has significant significance in solving the shortage of building materials production resources and huge energy consumption.

3.3 Improve construction environmental standards

We are responsible for the environmental protection management of the site during construction, and the establishment and implementation of the construction site management responsibility system from the viewpoint of project scale, technical complexity, and specific conditions of the construction site have realized the systematization and scientificization of environmental management. With the guiding idea of "prevention-oriented," we strengthen the supervision and management of construction site pollution prevention measures, establish a sound environmental management

system, and formulate relevant rules and regulations. Standardization, clear authority and responsibility, orderly management, mutual prevention, and mutual responsibility are necessary to enhance the management level and efficiency. In construction enterprises to implement environmental protection targets a responsibility management system. Environmental protection job responsibility systems as the main line, environmental protection inspection systems, etc., environmental protection education systems, and an environmental protection rewards and punishments system

Control, develop, and promote low-energy buildings at the source, apply new technologies and techniques, and reduce the production of construction waste. In the design process of the building, consider improving the durability of the building, adopting the structural design that minimizes the construction waste, considering the amount of construction waste generated in the future maintenance and renovation of the building, and considering the regeneration of the building when it is dismantled in the future. The problem lies in the process of construction, which must be honest, eliminating the phenomenon of jerry-built materials that reduce the quality and durability of construction, and reducing needless repair, reinforcement, and even reconstruction operations. Emphasis is placed on the direct reuse of waste. At the same time, standards regarding the amount of construction waste generated were established and used as a legal basis to achieve government regulation of the amount of construction waste generated.

In addition, construction personnel occupy the main positions in the construction process. Therefore, construction companies should pay attention to the environmental protection of the construction site. During the construction of the project, environmental protection should be effectively strengthened, and the awareness of environmental protection among construction personnel should be a top priority. The construction unit should pay attention to the improvement and innovation of construction technology to improve the quality and safety performance of the project through technological innovation and should also actively take effective measures to reduce the pollution generated during the construction process. During the construction of the project, the construction personnel should be trained in advance to master the knowledge of environmental protection so that they have a deeper understanding of the significance of protecting the environment, and the utility model effectively enhances the construction personnel's awareness of environmental protection.

4 Conclusion

China is a country with vast resources, all kinds of resources and energy are quite rich and abundant, but the resources are not inexhaustible, and the construction of engineering projects consumes a lot of resources. Therefore, based on the principle of conservation and efficient use, environmental protection management should be included in the scope of engineering construction and given sufficient attention on the basis of ensuring the quality of the project and its safe construction, from soil, atmosphere and water resources. As the starting point, the protection of environmental protection will be truly implemented in the field of engineering construction, and strive

to give the environment a comprehensive protection. Whether it is from construction waste or construction materials, their common goal is to reduce the environmental impact of engineering. The state is paying more and more attention to the issue of sustainable development of the environment, intensifying its efforts in the supervision and supervision of engineering supervision and construction processes, and strives to make the greatest use in the limited resources and environment. Planning for the daily life and future development of the people. Engineering problems are closely related to environmental issues, and environmental issues are gradually recognized and recognized by everyone. However, China's environmental undertakings are still in their infancy, and they cannot catch up with the international level. I hope that our country and even the people will pay attention to environmental issues.

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