

Analysis of the Influence of Exhibition Industry on Ecological Environment and Countermeasures

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Abstract—With the progress of the time, people have become more and more concerned about environmental protection, low-carbon and green, and the concept of sustainable development is deeply rooted, and the green and sustainable green trade show must be a trend of future trade shows. In recent years, the industry has grown rapidly, and the economic growth of the industry has shown a high speed of growth, and has driven the development of our nation's national economy, and yet, the resulting waste of the exhibition is a big problem for the industry to continue to develop. Through the study of relevant literature, it is found that the impact of the exhibition industry on the ecological environment is caused by exhibition waste, so from the perspective of ecological environment to study the source, types and characteristics of exhibition waste, to draw the "Green Exhibition" is the future development direction of the exhibition industry conclusion.

Keywords—*Ecological Environment; Green Exhibition; Environmental Protection*

I. INTRODUCTION

The exhibition industry has been widely concerned by the government and society because of its strong driving efficiency of 1:9 of related industries, and has been able to develop rapidly [1]. However, due to the design planning of sites, material use and many other reasons, the "Smoke-Free Industry" has a growing impact on the ecological environment. Foreign research on the impact of the exhibition industry on the ecological environment, mainly focused on the venue planning and related regulations two aspects: in the venue planning, Germany as the representative, shorten the pavilion and service facilities such as hotels, catering, business and other distances, not only to ensure smooth traffic during the exhibition, but also to minimize traffic volume while the UK focuses on the construction of sites, such as paving, water, sculpture and greening around sites, to purify the environment, it can be seen that exhibition waste is the source of the impact of the exhibition industry on the ecological environment. Based on the analysis of the impact of the exhibition industry on the ecological environment, this paper studies how to reduce the impact of the exhibition industry on the ecological environment. "Low-carbon life" means to change the details of life, from the electricity, the throttle and the recycling, to reduce the amount of energy used in living hours, to reduce carbon dioxide, especially carbon dioxide, to reduce the pollution of the atmosphere, and to slow the ecological deterioration [2]. Green exhibition is to realize energy

conservation and emission reduction, cycle economy.

II. EXHIBITION PROCESS

A. *Exhibition Process and its Analysis of Environmental Impact*

The general exhibition activities can be divided into three parts: prep-exhibition preparation, exhibition management and post-exhibition research. prep-exhibition preparation refers to all preparations for the smooth progress of the exhibition [3]. The exhibition work refers to all the activities involved in the exhibition from the official start to the final. The post-exhibition work involves some feedback and after-work of the exhibition.

In the past, economic development was mostly at the cost of the environment, which was unfavorable for people's long-term survival. In order to solve this problem, people explore new economic models and strive to achieve a win-win situation between the economy and the environment. Ecology was then introduced into various industries to assist the operation of industries according to some basic principles of ecology. Industry to study the nature of cycle operation pattern, the establishment of similar healthy circulation, such as before will be free from natural and quickly abandoned way into internal use repeatedly, one party and imitation of natural ecological operation, on the other hand to without causing damage to natural not only achieve health run within the industry, also interact with the real environmental health guarantee industry.

The ecological theory of sustainable development has gradually become the foothold of the development of every industry. Sustainable ecological industry development force method provides ideas for many industries [4]. As an emerging industry, the exhibition industry should take ecological and environmental protection as its basic principle while expanding rapidly. Every city should abide by it as the fundamental criterion when developing its own special exhibition.

As a new industry, convention and exhibition, and other industry is facing the same problem, that is how to make the industry expansion and the natural environment benign interaction, this includes how to reasonably and efficiently to extract production from the natural material, low loss, low return to use, no pollution, pollution of these questions is a clear need for ecological exhibition operation mode to coordinate to solve. In the final analysis, the exhibition

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industry should be regarded as a part of the natural system, and all operations should follow the inevitable rules of the system, so as to realize the minimum pressure on the ecology caused by the exhibition. In addition to forming the ecology of industry and nature, the industry also needs to form a virtuous cycle within the industry. Resource circulation among various exhibitions reduces the use of disposable resources, which requires the linkage between exhibition units.

B. The Influence of Exhibition Industry on Ecological Environment

According to the Industry and Exhibition Activity procedure involved in the exhibition activities, this paper lists the exhibition activities with great environmental impact from the three processes of prep-exhibition preparation, exhibition management and post-exhibition evaluation respectively [5]. The impact of preparation is made on the ecological environment before the exhibition. From the exhibition venue construction, exhibition publicity and booth marketing, exhibition sites layout, exhibition work and exhibition route planning, five prep-exhibition preparation activities to analyze the impact of the exhibition industry on the ecological environment. From the check-in and related activities with the opening ceremony, exhibition booth construction and exhibition site waste disposal three activities to analyze the impact of the exhibition industry on the ecological environment. Mainly from the exhibition withdrawal and related services industry chain activities to analyze its impact on the ecological environment.

The city of the exhibition not only needs a complete green exhibition center, but also needs to be able to join related supporting industries such as food, accommodation, transportation, logistics, telecommunications and service, so it is not only an exhibition hall alone. In addition to the above direct industry support, the government, real estate, security need more linkage. Sustainable exhibition, in the final analysis, does not rely on the exhibition itself, but requires the sustainable cooperation of related industries [6]. In China, apart from the well-known cities like Beijing and Shanghai, the ability of other cities to effectively cooperate in urban construction, supporting industries and exhibitions needs to be improved.

A large-scale exhibition is supported by a set of systematic suppliers. Several suppliers input resources into the exhibition in a small way to maintain its normal operation [7]. The same is true for the sustainable ecological exhibition, but its suppliers have a higher requirement, that is, the supply of environmental protection, the resources they provide to the exhibition and the way they provide are ecological and sustainable, and cannot only consider the economic interests. For example, energy utilization materials, exhibition supplies, building materials and greening materials in equipment and facilities.

Exhibition architecture is an important building in a city, which has important publicity and image building significance. The concept of environmental protection and ecology must be reflected in the building construction process. In the construction of ecological exhibition, the linkage and coordination of all aspects are needed. More importantly, the

determination of relevant departments and units to implement the concept of green environmental protection should not be shaken by short-term superficial interests.

III. CHARACTERISTICS OF EXHIBITION POLLUTANTS

A. Large total and relatively concentrated

At each stage of the exhibition preparation, exhibition management and post-exhibition evaluation of the exhibition activities will produce a large number of exhibition wastes, and during the holding of a highly concentrated flow of traffic and logistics has increased the number of exhibition waste. However, the space held by the exhibition activities is relatively fixed, which makes the garbage generated by the exhibition activities relatively concentrated. This and Jian-Li Ma (2007) on the Shanghai Nanjing Road Commercial Tourist Area within 1.3 square kilometers to investigate the local tourism waste production of about 0.15~0.20kg/people [8], and the daily waste generated by the total amount of large and relatively concentrated distribution characteristics of the same conclusion.

Standard booth is the most common form of booth in the booth, it is simple form of green booth: eight prism plus board assembly form is simple and practical, removed after the material can be recycled [9]. However, due to the constraints of materials and shapes of standard booths, the display effect is not outstanding, and sometimes it cannot meet the needs of exhibitors. In contrast, the special booth appearance beautiful, rich functions, to overcome the standard booth appearance, single function shortcomings, conducive to the display of enterprise exhibits. According to the survey, compared with the standard booth, exhibitors are more inclined to choose special decoration to achieve the display effect and attract the attention of the audience. For enterprises, a lot of attention has been paid to the design of special decoration, which makes the booth more and more "individual characteristics". However, a series of problems, such as the booth building is not green and environmental protection, come one after another.

As the first choice of many large and medium-sized exhibitors, the special decoration materials are generally not retained after the exhibition, and are given to the waste factory for treatment, while the iron frame structure, flat aluminum and other steel products that can be reused are recycled by the builder. Through the investigation, it is found that the wooden structure booth occupies a large proportion in the cross-strait trade fair, and the iron frame and other recyclable structures are few, which greatly aggravates the generation of exhibition waste. In particular, wood structures are almost all disposable and can only be used as fuel after recycling. The waste of wood materials has become an important source of exhibition waste.

B. Low Variety and High Recoverable Rate

There are three main types of exhibition pollutants: one is the solid waste pollutants produced by the construction of pavilions and booths, the other is the domestic waste produced by the high concentration of the flow of the crowd, and the third is the sudden increase of vehicles in the short term, the excessive use of air conditioners and the use of substandard materials to bring air pollution. Solid waste is mainly based on

paper, bottles, plastics, metal packaging containers or booth construction materials. Among them, recyclable waste accounts for about 75%~80% of all waste, while the proportion of household waste in ordinary cities is only 20%~30%.

IV. ANALYSIS OF THE CAUSES OF THE IMPACT OF EXHIBITIONS ON THE ENVIRONMENT

The design and planning of exhibition sites and booths unreasonable design and planning of exhibition sites and booths is the potential cause of environmental pollution. Mainly includes the following aspects: first, the green design concept of weak awareness, can not apply the ecological concept to the process of exhibition design, and too much consideration of the external form and function of the pavilion, resulting in great waste [10]. Second, the space and resource utilization design of the venue is not scientific, resulting in the site space cannot meet the requirements of natural light, rainwater and solar energy collection and material recycling.

Third, the booth design failed to follow the green design concept, resulting in disposable materials and special booth applications too much to aggravate environmental problems. Sites, booth construction materials environmental protection standards low sites, booth construction materials are not up to standard is the main cause of environmental pollution. Although China has formulated green standards for its construction for the Beijing Olympic Games and the Shanghai World Expo respectively, the measures of the Green Building for the exhibition project have not yet been promulgated as far as the National Exhibition Industry is concerned. Many exhibition projects do not have strict environmental protection provisions to achieve its construction, inspection, use and other operation of the whole process, resulting in serious environmental pollution.

Short-term of human flow is too large, beyond the environmental carrying capacity is an important factor causing serious environmental pollution. Any exhibition activities can not be separated from the corresponding service facilities. Boiler soot, air conditioning use will emit a lot of carbon dioxide into the air, which has a serious impact on the air quality in the exhibition area. Data show that the average daily water consumption of the exhibition is 260 tons.

V. ADVICE AND COUNTERMEASURES

A. "Green" Design

One is to simplify the space construction, partition and volume design of pavilions and showrooms, thus saving materials and workmanship. Second, in the Pavilion and booth design and construction of the use of environmentally friendly natural materials, artificially produced biodegradable materials, recycled and recycled materials and purified materials. Third, for the enterprise design unique display image recognition system, it is to achieve its long-term stable reuse. The four is to increase the design application and modular design of detachable display tools in the design of the exhibition, so as to improve the efficiency and save the construction loss in the early stage. Six is to highlight the practicality of the design, in the pavilion, venue, Booth and the design of the exhibition

route should be combined with the actual needs, in the full market research and field inspection on the basis of design innovation.

Exhibition design is the overall exhibition design, covering many aspects, from large space planning to small exhibits, props, lighting, color, multimedia and other comprehensive consideration and design. Through design means, it is able to enhance the attraction to visitors to achieve the maximum effective dissemination of product information, to achieve the purpose of communication and exchange. At the same time, to exhibition design requirements are constantly improve, form a single, no creative design has been lagging behind the development of the convention and exhibition, development to the present convention is on the basis of the traditional convention and exhibition design, adding new material, new technology and new technology as the basic point, take the network technology, multimedia technology, virtual reality technology and other high-tech as a means of information, people-oriented, to coordinate the exhibition environment of ecological concept to build comfortable. These requirements make the exhibition more meticulous, professional and international.

The ecological design of exhibition can also be called green exhibition design or exhibition life cycle design, that is, in the whole Such as an exhibition of life cycle design research and development, the exhibition hall construction scaffolding, using performance, user and market reaction and the elimination of waste, the environmental factors into consideration, consideration and the effect of comprehensive optimization of convention and exhibition, environmental protection, economic performance and resource utilization, etc., obtained the best balance all aspects, so as to help determine the correct direction.

B. "Green" Management

First, setting specific green business objectives, and setting up a leading group of green management, the implementation of green services into practice. Second, to implement a green accounting system, to organize the exhibition activities should be correct, timely and reasonable measurement and record the cost and cost of stadium pollution and environmental control. Third, carrying out green marketing, collecting the green degree information of related enterprises and putting forward specific requirements for each exhibitor is important in the aspects of material use and waste disposal.

To some extent, exhibition has become a bellwether leading social development. However, as far as China is concerned, the current situation of the exhibition is "large quantity but poor quality". Innovation idea is poorer, follow suit behavior is serious. The methods used in the exhibition are relatively traditional, and the research on relevant topics that combine digital technology to realize the exhibition is not comprehensive or cutting-edge enough. Ecological awareness is even weaker, not only the site utilization rate is low, but also the use of a large number of non-recyclable disposable materials aggravates the waste of resources, causing serious decoration pollution and waste and a series of problems.

Mutually promote. Introduce the latest scientific and technological achievements, the latest technical materials. Master the latest technical means, organic and exhibition combined. Speed up the rapid and comprehensive dissemination of information, break through the limitations of exhibition brought by space and time, increase the participation and interaction of exhibition, and meet the personalized needs of participants. In the use of science and means at the same time, but also to improve the exhibition designers innovative consciousness and all aspects of quality, master the latest design concept, so that the exhibition hall in the form, function, culture can lead the trend of The Times. In terms of environmental protection, the amount of recyclable and reusable materials used in exhibition activities should be strengthened to reduce the generation of exhibition wastes. Increase the use of energy saving and environmental protection equipment, reduce the consumption of resources [11]. Introduce the concept of sustainable development in the exhibition, develop and pay attention to the most cutting-edge environmental protection achievements.

C. On-site Garbage Disposal

First, the establishment of a complete garbage collection system on site, such as setting up trash cans of different colors and cleaning them every 40 minutes to achieve classified recycling and timely processing. Second, the employment of staff in solid waste beverage bottles and cans, packaging bags, fabrics, waste plastics, waste paper, waste glass, scrap metal, waste rubber and other reusable components directly classified and recovered. Third, the establishment of relevant departments for such as waste paper, waste planks, waste fabrics, such as simple treatment can be reused resources for simple treatment, as a booth construction, exhibition decoration and advertising and other materials. Four is to sign long-term cooperation contracts with professional waste disposal enterprises, for those such as scrap metal, waste glass, waste rubber, such as the need for deep processing and treatment of resources and non-recyclable resources for systematic and unified treatment.

VI. CONCLUSION

First, it is through social media to promote the awareness of ecological environmental protection, guide the organizers of the exhibition and exhibitors, as well as the exhibition participants together to form a green exhibition development awareness. The second is to integrate the related industries

such as hotels, transportation, catering and communication with the exhibition industry to form an organic whole, thus optimizing the resource allocation of the exhibition industry chain. The third is to establish scientific green evaluation indicators and reward and punishment mechanisms from the perspectives of the use of raw materials, booth design, service management, etc., and establish an all-round evaluation system for the entire exhibition industry to reduce the impact of post-show activities on the ecological environment, and then promote the green development of the entire exhibition industry.

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