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On the beauty of green expo architecture and sustainable development—taking “China Pavilion” as an example

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Abstract

'Green' or 'ecological' architecture is the inexorable trend of sustainable urban development. On meeting the basic functions of architecture, the design of the China Pavilion harbours the essence of traditional Chinese culture while employing modern technology and hi-tech materials. This demonstrates the application of traditional elements in the form of architecture yet combines the beauty of architecture, energy saving, recycling of natural resources together to realize the sustainable development of this type of architecture.

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The World EXPO Shanghai in 2010 was closed, leaving people a great sense of passion, enthusiasm and attachment. A grand architectural gathering which had drawn the attention of the world was concluded with a perfect ending. Although there existed lots of excitement and even regret, it is with no doubt that this world architectural gathering initiated a new era in the area of green-architecture, low-carbon life and sustainable urban development, which shows the great longing of the human race for the ongoing improvement of urban living and environmental sustainability for all future life.

The theme of the World EXPO 2010, "Better City, Better Life", was presented in all the architectures throughout the EXPO Park. Each single building consists of the whole city itself and the guarantee of the green environmental protection of each single building would definitely create comfortable living conditions for the human race. In 2009, at the China City Development Summit Forum and with the release of the Conference of City Blue Paper, a new idea was put forward: as the main carrier of energy saving and the development of low-carbon economy, the low-carbon city would pioneer the development

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of cities in the future. In this EXPO, the architectures from all over the world demonstrated the developmental trend of green architectures and the sustainable development of future cities. The pavilion of each country was designed with high technology, new material and new techniques focusing on how they would be employed into the lives of ordinary people. Under the circumstances, the design of each pavilion tries to present the image of their nation and their nation's cultural lifestyle. All the pavilions manifest the features of hi-tech, green environment, low-carbon and energy saving in environmental protection. Amongst all the pavilions in the EXPO, there is a giant red "Ding" shaped architecture standing in the centre location of the EXPO site, which represents Chinese green architecture, "China Pavilion".

1. Architecture Features of China Pavilion

Located in the A area of EXPO Park and standing to the east side of the EXPO geographical axis, China Pavilion occupies a construction area of 15,000 square meters and could be divided into three layers with one layer under the ground. The main building of China Pavilion is 69.9 meters tall and consists within the 13 meter high area annex.

A classic architecture could narrate a beautiful story, reveal an ancient history, present a fair-sounding music etc. However, China Pavilion just transcends the architecture itself. The contour design of the pavilion is based on the concept of "Oriental Crown, Splendid China, Ample Barn, and Rich People," to express the spirit and disposition of Chinese culture, display the prosperity of the nation and the rapid development of its social economy and technology. China Pavilion fully presents the integration of Chinese architecture in the past 5000 years and melds the elements and signs of Chinese ancient culture into modern architecture. The process of the development of urbanization in modern times is wholly demonstrated. The construction of China Pavilion is a milestone for the Chinese city development and the innovation of architecture. It illustrates the theme of the EXPO "Better City, Better Life" successfully.

Considering the background of Chinese history, the environment of the host city, the historical development of the architecture and China's position on the world stage, the architectural structure of China Pavilion was created by the designing spirits of "Dougong" of the Song Dynasty and it stands among all the EXPO pavilions with the architectural form of "Crown" and "Ding". All these features perfectly combine the Chinese traditional wooden construction with the form of modern esthetics. Its unique construction endowed the architecture with a sense of historic mission and responsibility. The application of Chinese red expresses the concept of joy, happiness and hospitality of the Chinese people. Moreover, the specific connotation of Chinese architecture was embodied in the application of new techniques and materials. Combining the theme of low-carbon living, environment protection and energy saving, the China Pavilion will definitely lead the sustainable urban development of the city in China.

2. The Form of Architecture Manifests the Green Energy Saving

In ancient times, the basic function of human residence could just meet the requirements of providing shelter and protection from wild animals. No consideration of the shape and comforts of the residence were taken into account, not to mention the environmental impact. As the development of society continues, healthy, comfortable and non-polluting energy saving living conditions are needed and thus an integrated building space is created which combines the beauty of form, the natural environment and historical culture all together.

2.1. The Application of "Platform" in Architecture

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