



Splendid Transformation of the “Ice Cube”



Accompanied by bursts of shouts, several team members did their best to wipe the ice surface with ice brushes, while a delicate stone pot was gliding slowly on the white ice. In the “Ice Cube” the curling venue for the Beijing Winter Olympic Games, a public curling experience competition was underway. Upon closer look, the venue is much more than just a curling venue. It is converted from the “Water Cube”, the main aquatics center of the 2008 Beijing Olympic Games, and it is a big project involving removable, temporary water-ice transformation.

The “Water Cube”, which made its mark in the 2008 Beijing Olympic Games, witnessed the glorious moments of many athletes. The social operation of the venue has become a model for the reuse of Olympic venues after the Olympic Games. After Beijing’s successful bid to host the 2022 Winter Olympic Games in 2015, a bold idea was proposed to facilitate water-ice conversion and the maximal reuse of the venue. The venue can provide the public with sufficient cultural and sports services after the Olympic Games. After renovation, the venue will become an important heritage of the city hosting both the Summer and Winter Olympic Games.

So, how was the “Water Cube” transformed into the “Ice Cube”? It should be noted that curling, among all ice events, sets the most rigorous requirements for the venue. How to ensure the stability of detachable devices is the key problem. After repeated design calculations and tests, the design team finally controlled the margin of error within 2 mm. According to the detachable design of the “Ice Cube”, the set ice surface is 8 cm thick, which needs repeated pouring of 40 to 50 layers and takes a week to make.

Ice is so “sensitive” that curling venues require no air flow, no

direct sunlight, and no excess heat radiation to be released onto the ice. To this end, the design team made intelligent transformations of the ambient temperature, humidity, lighting system, and even acoustic system there.

The transformed “Ice Cube” is used for water sports in spring, summer, and autumn and for ice sports in winter. After the Winter Olympic Games, it will be used for public ice sports training and experience, helping to realize the objective of promoting winter sports among 300 million Chinese people.

In the century-old history of the modern Olympic Games, many classic stadium buildings have been left behind. They are not only masterpieces of human engineering architecture, but also monuments that embody the modern Olympic spirit. However, previous Olympic Games also faced the problem of the reuse of those venues after the Olympic Games. Designers explore new solutions to this problem. For example, after the 1992 Barcelona Olympic Games the Olympic Village and venues were transformed into tourism destinations. In the 2012 London Olympic Games, many venues were built with rented building materials and for temporary use. Its main stadium, the “London Bowl”, was built with the use of the Lego-like

structures, and it was rebuilt and leased to West Ham United as the home ground after the Olympic Games. In Beijing, from the 2008 Summer Olympic Games to the 2022 Winter Olympic Games, from the “Water Cube” to the “Ice Cube”, China has introduced the concept of sustainable development into the construction of Olympic venues and explored their comprehensive and lasting utilization, which will offer China’s experience for the development of the modern Olympic sports.



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