

Project:
Beijing Science & Technology University Gymnasium

(Olympic Games: Judo & Taekwondo)

Building Type: Gymnasium/Sports Facility



The Beijing Science & Technology University Gymnasium serves as an indoor sports facility for a wide range of fitness, aquatics and competitive sports activities. The facility's main gymnasium includes a 7,874 square foot (2,400 m²) competition arena that seats over 8,000 spectators. The facility will host the taekwondo and judo competitions for the 2008 Olympic Games in Beijing as well as the Paralympics wheelchair rugby and wheelchair basketball competitions.

Objective

In keeping with the "World's First Green Olympics" theme, architects were challenged with designing facilities to stringent environmental standards. This had to be balanced with creating competitive sports facilities that satisfied the needs of both athletes and spectators. Effectively daylighting the gymnasium became a crucial design goal in order to reduce the need for artificial lighting. However, it was determined that skylights could not meet the design requirements.

Products Used

Solatube SolaMaster® Series -
148 Solatube 750 DS (21 in/530 mm) Daylighting Systems
with OptiView® Open Ceiling Diffusers and Daylight Dimmer™ Kits

Solution

The gymnasium's steel-frame roof presented a design challenge. In addition to the numerous obstructions, the diffusion plane was nearly 56 feet (8 m) above the ground. The Solatube 750 DS Daylighting System overcame both those challenges. First, it allowed daylight to be transmitted over 26 feet (8 m) to avoid construction obstacles. Second, the high performance design provided ample natural light, which was evenly distributed throughout the space. Overall, the daylighting design succeeded in achieving its aesthetic, functional and environmental goals.

Testimonial

"Compared with traditional lighting systems, Solatube Daylighting Systems have a unique advantage with better progressed view and a wide application field. They reduced power usage and exceeded our environmental design goals."

Weimin Zhuang, Architect
Dean, Architecture Design Institute of Qinghua University

