

国家游泳中心（水立方），北京，中国 National Swimming Centre (The Water Cube), Beijing, China, 2008

建筑设计：CCDI + PTW + ARUP

Architects: CCDI + PTW + ARUP

国家游泳中心“水立方”与奥林匹克公园中轴线另一侧的国家体育场“鸟巢”遥相呼应，形成了地与天、水与火、内敛与放射、诗意与震撼的相对关系，一静一动，相得益彰。与鸟巢的兴奋、激动、力量感、阳刚气息不同的是，水立方宁静、祥和、带着迷人的感性色彩，她的轻灵和神秘随着人的情绪、赛事以及季节的变化而变化。

设计师在设计时探寻“水”的各种可能性，将水的概念深化，基于“泡沫”理论的设计灵感，利用其独特的微观结构，为“方盒子”包裹上了一层建筑外皮。通过表面覆盖的四氟乙烯（ETFE）透明膜结构气枕赋予了建筑冰晶状的外貌，使其具有独特的视觉效果和感受，轮廓和外观因此变得柔和，水的神韵在建筑中得到了完美的体现。

“水立方”作为2008年北京奥运会游泳、跳水、花样游泳和水球的比赛场馆，其功能完备先进且易于赛后运营。奥运后它成为北京最大的具有国际先进水平的多功能游泳、运动、健身、休闲中心，成为奥林匹克运动留给北京的宝贵遗产和北京城市建设的新亮点。□

The Water Cube was one of the two main venues for the 2008 Beijing Summer Olympics, with all pools and functions that FINA needs to conduct every session of Swimming, Diving, Water Polo, and even Modern Pentathlon. NSC is also a truly Multi-function Leisure Centre for Beijing City in the 21st Century. It encapsulates every aspect of water – hot and cold, shallow and deep, lazy rivers and pounding surf beaches, competition water, and even has ice.

Based on all those requirements and considerations above, the design of NSC is called the "Water Cube", a huge blue square with magical foam-structure skin. It includes a 4000-seat multi use arena to attract and stage a variety of international events and high-tech entertainment.

The facade system comprises of a series of paneled units that are mounted as internal and external skins. A series of Ethylene Tetra Fluoro Ethylene (ETFE) bubbles. The ETFE bubbles were prefabricated offsite in panels. Panels are lifted and fitted to the facade by adjustable aluminum lugs that are thermally isolated from the support structure. With the panels in place, air distribution pipes are attached and linked to pumping mechanisms required to keep the bubbles inflated. The Water Cube is largest

ETFE structure in the world, which has more than 4000 bubbles, the largest of which is 9m in diameter.

The design process of National Swimming Centre exhibited a concerted collaboration of international teams. Architects from PTW helped a lot on the skin material ETFE; engineers from ARUP bring out a perfect structural model; and the design group from CCDI gave the idea of Water Cube and endowed it with much meaning of Chinese traditional philosophy. The design-union collaboration itself is a joyful journey, which inoculated the different ways of art, culture, technique, as well as the 2008 Olympic Game in Beijing. □

项目信息/Credits and Data

委托单位/Client: 北京市国有资产经营有限责任公司/
Beijing State Owned Assets Management Co., Ltd.

中方主要建筑师/Chinese Principal Architects: 赵晓钧,
郑方, 王敏, 商宏/ZHAO Xiaojun, ZHENG Fang, WANG
Min, SHANG Hong

场地面积/Building Area: 69,000m²

建筑面积/Floor Area: 87,200m²

座席数量/Seat Number: 17,000

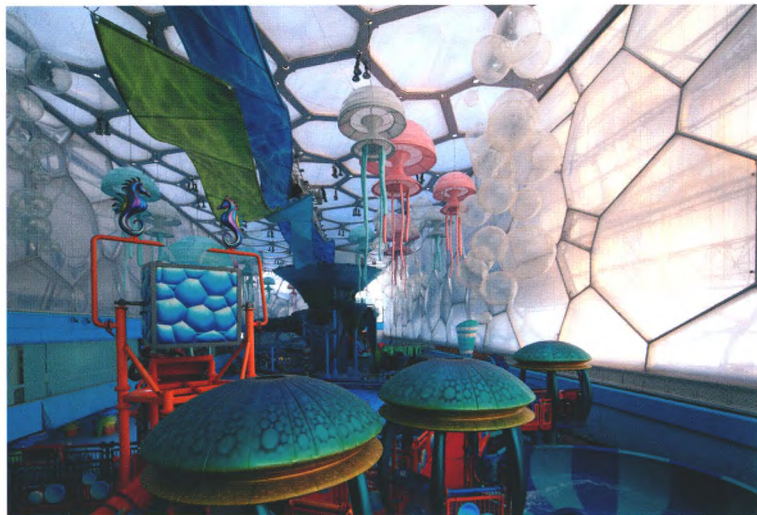
设计时间/Design Time: 2003.08

竣工时间/Completion Time: 2008.05



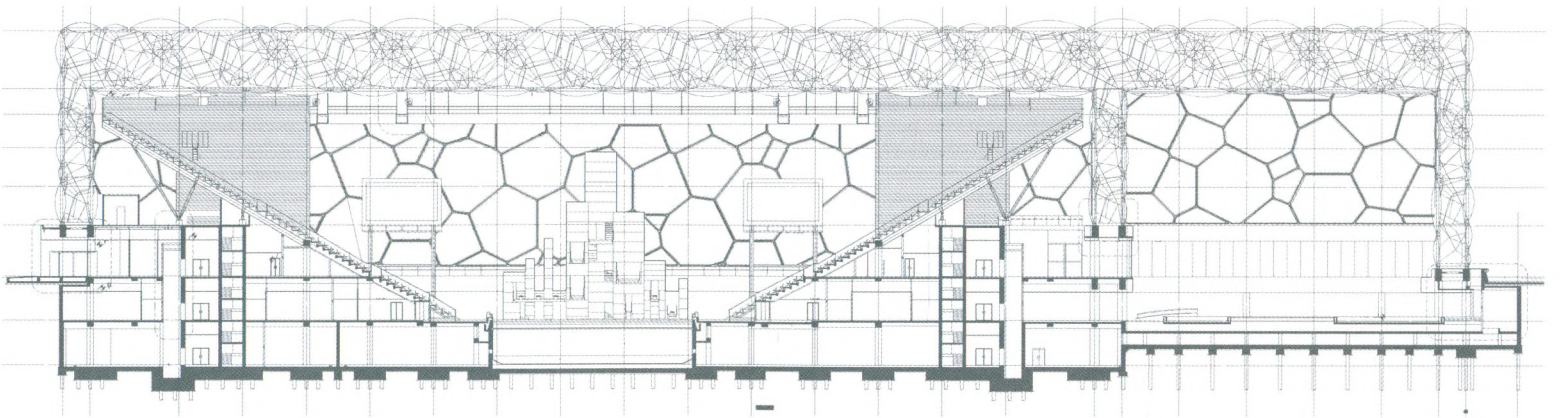
1 比赛池全景/Competition pool

2 奥运会热身大厅赛后改建为市民水上娱乐中心/The Olympic warm-up hall is transformed into a public water recreation centre





3



4

3 夜景/Night view
4 剖面/Section