



THE 'ICE RIBBON' SET TO LIGHT UP THE OLYMPIC SKYLINE IN BEIJING

On the 4th February the world will be watching Beijing celebrate the start of the 2022 Winter Olympics as the world's first dual Olympic city.

The only new permanent venue for the 2022 Winter Olympics and Paralympic Games, the National Speed Skating Oval or the 'Ice Ribbon', will be unveiled under Olympic lights for the first time since its completion in 2021.

The 12,000 seat venue will host the speed skating events and will award 14 gold medals.

Designed as a spectacular new landmark by global sports architecture firm Populous, after winning an international design competition, the 'Ice Ribbon' was created as a symbol of Chinese cultural heritage that celebrates the elegance, precision, pace and dynamic of speed skating.

From its Asia Pacific headquarters in Brisbane, Populous managed a multitude of stakeholders across five countries and three offices to win the rigorous design competition over 60 other firms. The win recognised Populous' unparalleled Olympic experience and their involvement in their 14th Olympic Games, both summer and winter.

Populous Senior Principal and co-Project Director on NSSO Andrew James said to be selected as the chief designer of an Olympic sports venue was a huge honour.

"The winning design for the 'Ice Ribbon' was created in an intense time frame and was forged through several concepts and many iterations to develop a spinning concept into its final form.

"It became a global effort with our team in Beijing, Brisbane, India, London and America drawing on our experience from Oval Lingotto in Turin, Italy and our design of Fisht Stadium in Russia, home of the 2014 Winter Olympic Games," James said.

The client, Beijing National Speed Skating Oval Operation Co. said the 'Ice Ribbon' demonstrates the excellence of Populous' design and justified their international reputation in sports architecture.

"It was an extraordinary project, the key building for the 2022 Winter Olympics...and continues to receive accolades from all walks of life.

Sitting together as iconic buildings along the central axis of the Beijing Olympics' 'Bird's Nest' and the 'Water Cube' venues they said, "The National Speed Skating Oval is not only a world-class sports facility designed to be among the best in the world, but it also brings an international landmark for Beijing and enhances the landscape and urban fabric of the area."

When reflecting on the characteristics of Olympic speed skating, Tiric Chang, Principal of Populous in China and the co-Project Director of the NSSO drew on childhood memories of growing up in Beijing to create a beautiful interpretation of Chinese culture and heritage.

"Much of the inspiration for the conceptual design of the 'Ice Ribbon' came from a traditional ice game played in old Beijing which involved a high-speed spinning 'ice top'.

"The ribbons of the design make reference to the floating silk ribbons of the artwork my family had dedicated their time to – which was the study and preservation of the Dunhuang Grottoes, a significant collection of Buddhist art from the Tang dynasty.

"It guided the design team to boldly extend the concept of a high-speed rotating ice top to creating 22 rotating light bands for the façade, which not only represent the ice surface and the shape of the oval, but also perfectly demonstrated the high-speed movement of speed skaters," Chang explains.

In addition to the striking appearance of NSSO, the design process has also been thoroughly considered in terms of its practical functions to meet the requirements of the International Olympic Committee (IOC) and the International Skating Union (ISU).

Importantly, the design also adds to the intense and exciting atmosphere where every movement and sound of the speed skating blades can be seen and heard by everyone in the oval.

In the lead up to, and during the Games, NSSO will be the home of training for speed skating events and Olympic competition.

Following the Games, the design's legacy allows the transformation of the facility to serve its long-term purpose as a real hub for the community, to hold Winter festivals, public ice skating, ice hockey or private ice-based shows and events.

This legacy design will support the Chinese Central Government's Ice and Snow Sports Development Plan which aims to involve 300 million people in ice and snow sports by 2025 and the IOC's 'Agenda 2020' to ensure there is real cost-benefit associated with hosting the Games.

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About Populous:

Populous is a global architecture and design firm that designs the places where people love to be together, like Yankee Stadium, the London Olympics, Suncorp Stadium, and the Super Bowl. Over the last 38 years, the firm has designed more than 3,200 projects worth over \$41 billion across emerging and established markets. Populous' comprehensive services include

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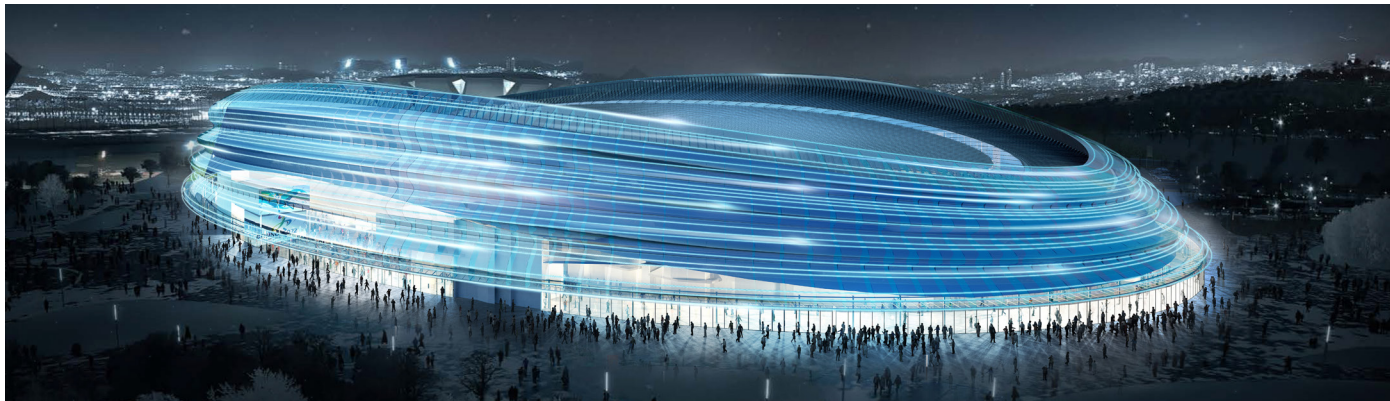
architecture, interior design, event planning and overlay, environmental graphics and wayfinding, master planning, landscape design, urban planning and sustainable design consulting. With regional headquarters in Brisbane, Kansas City, and London, Populous has 19 offices on four continents.

For more information visit www.populous.com or follow @Populous on Twitter.

FACTS & FIGURES

NATIONAL SPEED SKATING OVAL

BEIJING, CHINA



FAST FACTS

NAME: The National Speed Skating Oval or the 'Ice Ribbon'

PROJECT TYPE: Arena

LOCATION: Beijing Olympic Park, Beijing, China

CLIENT: Beijing State Asset Management Co. Ltd (BSAM)

OWNER: Beijing National Speed Skating Oval Management Co., Ltd

ARCHITECT: Populous - APAC HQ
Brisbane, Australia

CONSTRUCTION COMMENCED: Mid-2017

PROJECT COMPLETION: 2021

SITE AREA: 17 hectares

GROSS FLOOR AREA: ≤ 29,000 m² above ground; 80,000 m² excluding basement car park

CAPACITY: 12,000 (8,000 permanent and 4,000 temporary seats)

DESIGN ELEMENTS

+ **22 light strands** (or ribbons) flow up and around the oval

+ **33.8m height of the façade** of the building

+ **12,000 square metres of ice surface** area

+ **400m racing track** comprising an artificial ice surface to world's best standard

+ **2 additional underground levels** accommodate venue servicing and parking

+ **Many advanced technologies have been incorporated** including a low-e ceiling installed for greater efficiency and higher ice quality

KEY CONSULTANTS

+ Schematic Design: Populous (Architecture of facade, interior, landscape, signage, operation & legacy)

+ Design Development and Construction Documentation phases: LDI (Beijing Institute of Architecture Design)

+ Structural Engineering: Richard MacDonald

+ MEP, Ice Making, Green Building: Buro Happold

+ Contractor: Beijing Urban Construction Group Co., Ltd

INTERNATIONAL DESIGN COMPETITION FACTS

+ The design competition took place in 2016

+ Populous completed the full schematic design for the Ice Ribbon in 12 weeks

+ Over 60 firms took part in the competition including several international firms

DESIGN STORY

+ Populous' successful design of the 'Ice Ribbon' presents a distinctive façade that celebrates the elegance, precision, pace and dynamic of speed skating

+ At night, the facade creates an exciting spectacle, with each of the strands becoming dynamic ribbons of light, able to change to an endless array of lighting programs

ENVIRONMENTAL SUSTAINABILITY DESIGN

+ One of the first venues in the world to use carbon dioxide transcritical direct cooling ice technology for ice-making which is a more advanced technology and one that consumes less energy

+ The effect in reducing carbon emissions is equivalent to planting over 1.2 million trees

+ The system can achieve a temperature difference of 0.5 degrees Celsius or less across the ice surface, which provides strong support for top-level ice performances and a faster competition track

THE PROJECT

Populous was selected to design the prestigious National Speed Skating Oval (NSSO, also known as the 'Ice Ribbon') in Beijing, following a rigorous worldwide design competition. It is the city's new iconic venue for the 2022 Winter Olympic Games. This win consolidated and recognised Populous' unparalleled Olympic experience, and sees the firm involved in their 14th Olympic Games, both summer and winter. This history, coupled with Populous' globally recognised innovation in sports facility design, has set the stage for a most effective and inspiring state-of-the-art speed skating venue for Beijing's Winter Olympic Games.

CO-PROJECT DIRECTORS



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