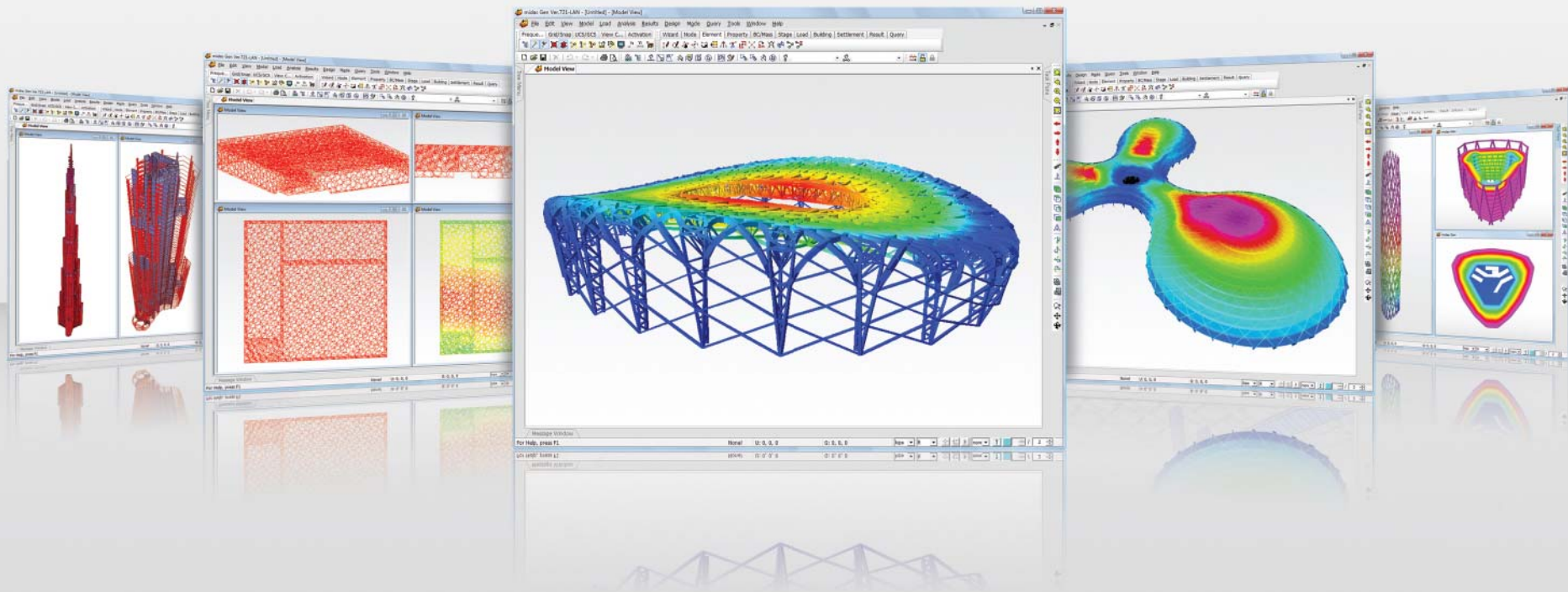


# Created to be Creative

Integrated Design System for Building and General Structures



# About midas Gen

## Features

### Comprehensive Design

- Concrete: ACI318, Eurocode 2, BS8110, IS456, IS13920, CSA-A23.3, GB50010, AIJ-WSD, TWN-USD, AIK-USD, AIK-WSD, KSCE-USD & KCI-USD
- Steel: AISC-ASD, AISC-LRFD, AISI-CFSD, Eurocode 3, BS5950, IS800, CSA-S16, GBJ17, GB50017, AIJ-ASD, TWN-ASD, TWN-LSD, AIK-ASD, AIK-LSD, AIK-CFSD, KSCE-ASD & KSSC-ASD
- SRC: SSRC, JGJ138, CECS28, AIJ-SRC, TWN-SRC, AIK-SRC2K, AIK-SRC & KSSC-CFT
- Footing Design: ACI318, BS8110

### Wind & Seismic loads auto-Generation

- Wind load: IBC, UBC, ANSI, Eurocode 1, BS6399, IS875, NBC, GB, Japan, Taiwan & Korea
- Seismic Load: IBC, UBC, ATC 3-06, Eurocode 8, IS1893, NBC, GB, Japan, Taiwan & Korea

### High-rise Specific Functionality

- 3-D Column Shortening Reflecting change in modulus, creep and shrinkage
- Construction Stage Analysis accounting for change in geometry, supports and loadings
- Building model generation wizard
- Automatic mass conversion
- Material stiffness changes for cracked sections

### High-end Analysis Capabilities

- P-Delta & Large displacement analysis
- Dynamic Analysis (Time History, Response Spectrum, etc.)
- Base Isolators & Dampers
- Pushover Nonlinear Analysis
- Inelastic Time History Analysis
- Staged post-tensioning
- Catenary Cable Structure

### Intuitive User Interface

- Works Tree (Input summary with powerful modeling capabilities)
- Models created and changed with ease
- Floor Loads defined by areas and on inclined plane
- Built-in Section property Calculator
- Tekla Structures, Revit Structures & STAAD interfaces





# Integrated Design System *for building and general structures*

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- Daejeon Stadium

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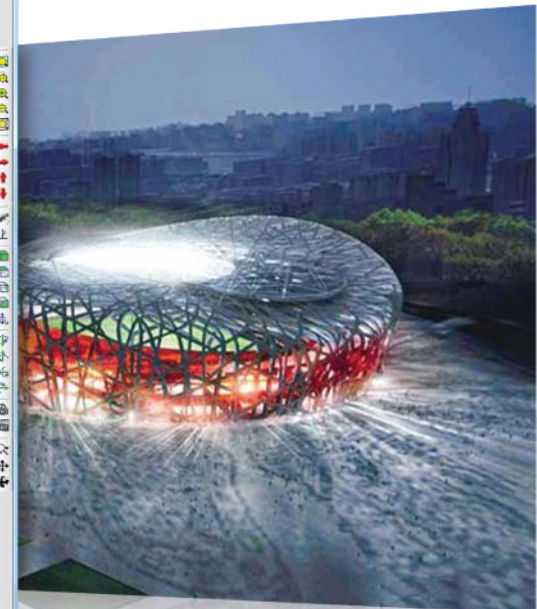
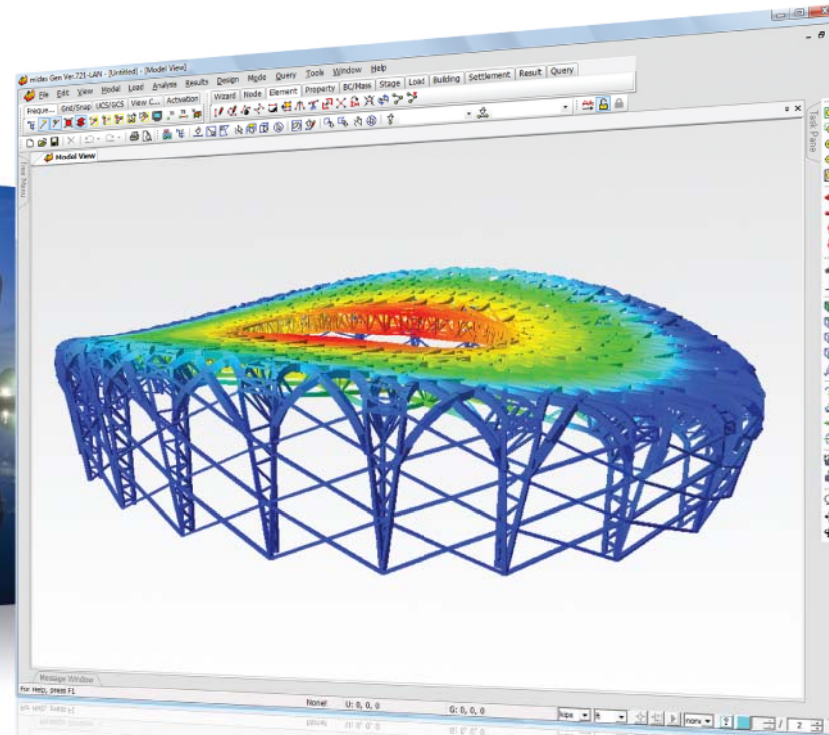
Gate of the Orient (Suzhou, China)

# Beijing National Stadium in China

The stadium is referred to as the 'Bird's Nest' because of its saddle-shaped steel roof and interwoven façade. The roof measures 330m long by 220m wide and weighs a total of 45,000 tones. Its upper surface is clad with ethylene tetra fluoro ethylene (ETFE) panels which let in natural light and its lower surface has an acoustic membrane which reflects and absorbs sound. This maintains the atmosphere in the stadium.

## Overview

Site area	204,278 m <sup>2</sup>
Floor area	258,000 m <sup>2</sup>
Capacity	91,000 seats
Height	69.2 m
Structure	Steel frame and reinforced concrete structure PC structure Cantilever steel frame truss structure
Function / Usage	Stadium / Arena
Project cost	500 mil. USD
Architect (Design)	Herzog & de Meuron Architekten AG



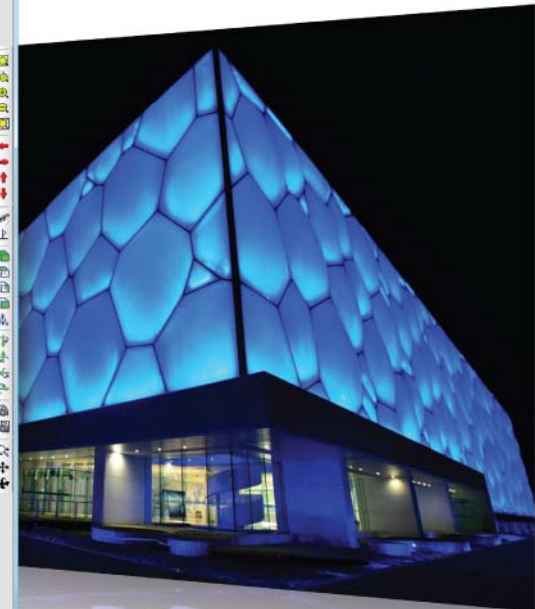
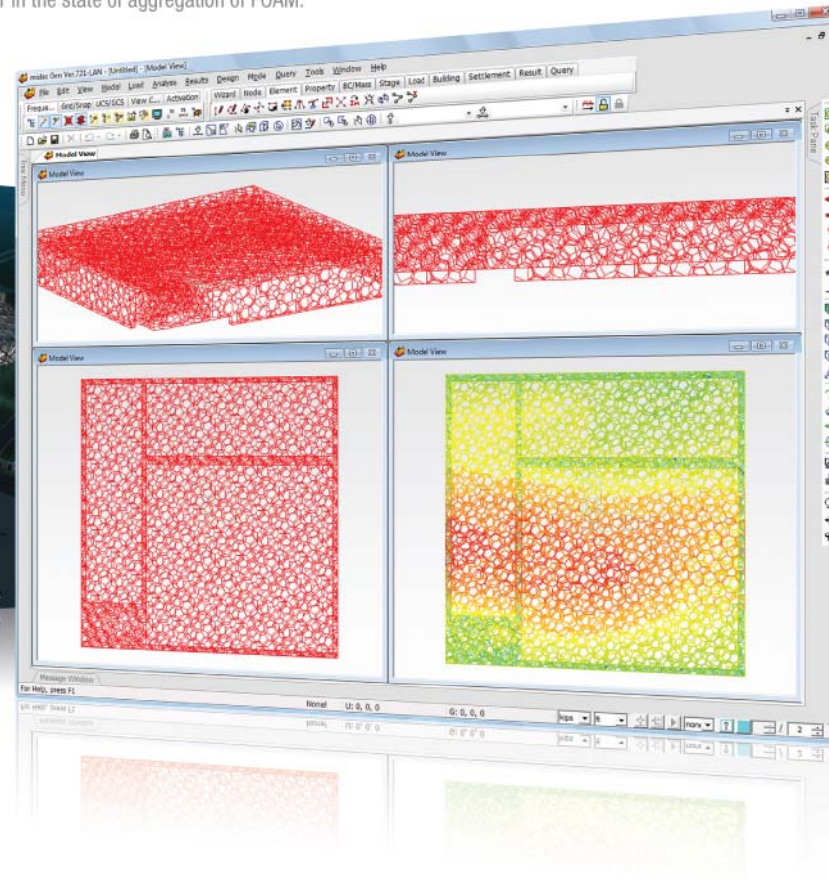


# Beijing National Aquatics Center in China

The National Aquatic Center will hosted the diving, swimming and synchronized swimming events at the 2008 Beijing Summer Olympic Games. Known as the Water Cube, it has a bubbled surface that absorbs solar radiation and reduces thermal loss. The sunlight allowed into the structure also acts as a heat source for the swimming pool water. The entire structure is based on a unique lightweight-construction, developed by PTW and CSCEC with ARUP, and derived from the the structure of water in the state of aggregation of FOAM.

## Overview

Site area	62,800 m <sup>2</sup>
Floor area	87,283 m <sup>2</sup>
Capacity	6,000 seats (17,000)
Dimension	177 x 177 x 31 m
Structure	Steel frame
Function / Usage	Swimming pool / aquatic center
Project cost	100 mil. USD
Engineer	Ove Arup & Partners
Architect (Design)	PTW Architects

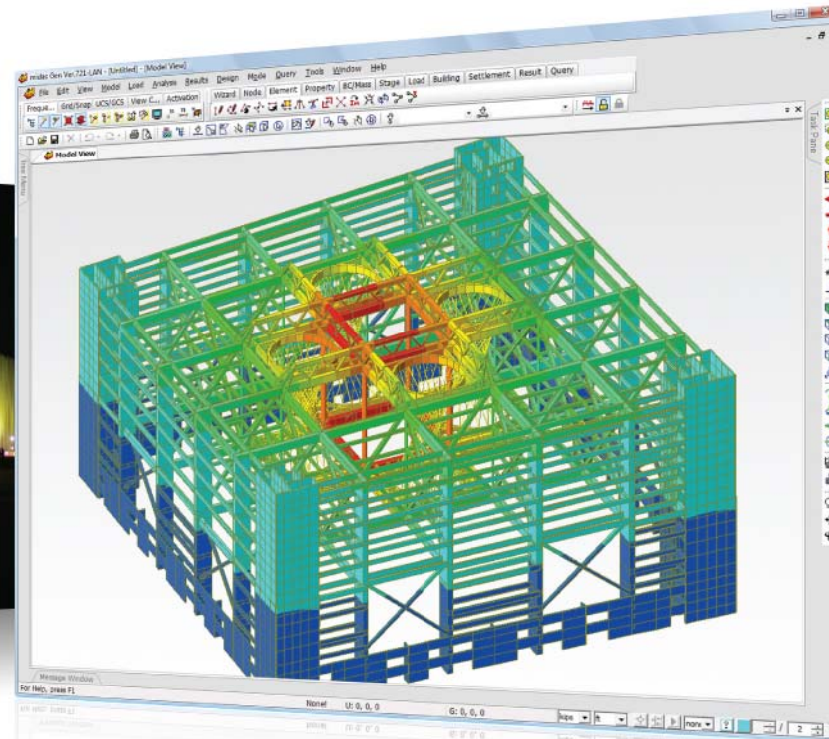


# Beijing Olympic Basketball Gymnasium in China

Beijing Olympic Basketball Gymnasium or Wukesong Indoor Stadium, the venue for basketball preliminaries and finals in the Olympic, is a gymnasium, which has three floors underground and four floors above ground. The gymnasium has the capacity for 18,000 spectators. The venue covers an area of 168,000 sq m. It is located at Wukesong Culture and Sports Center of Beijing.

## Overview

Site area	168,000 m <sup>2</sup>
Floor area	63,000 m <sup>2</sup>
Capacity	18,000 seats
Floors	4 (above ground) – 3 (below ground)
Structure	Steel frame
Function / Usage	Stadium / Arena
Architect (Design)	Beijing Institute of Architectural Design



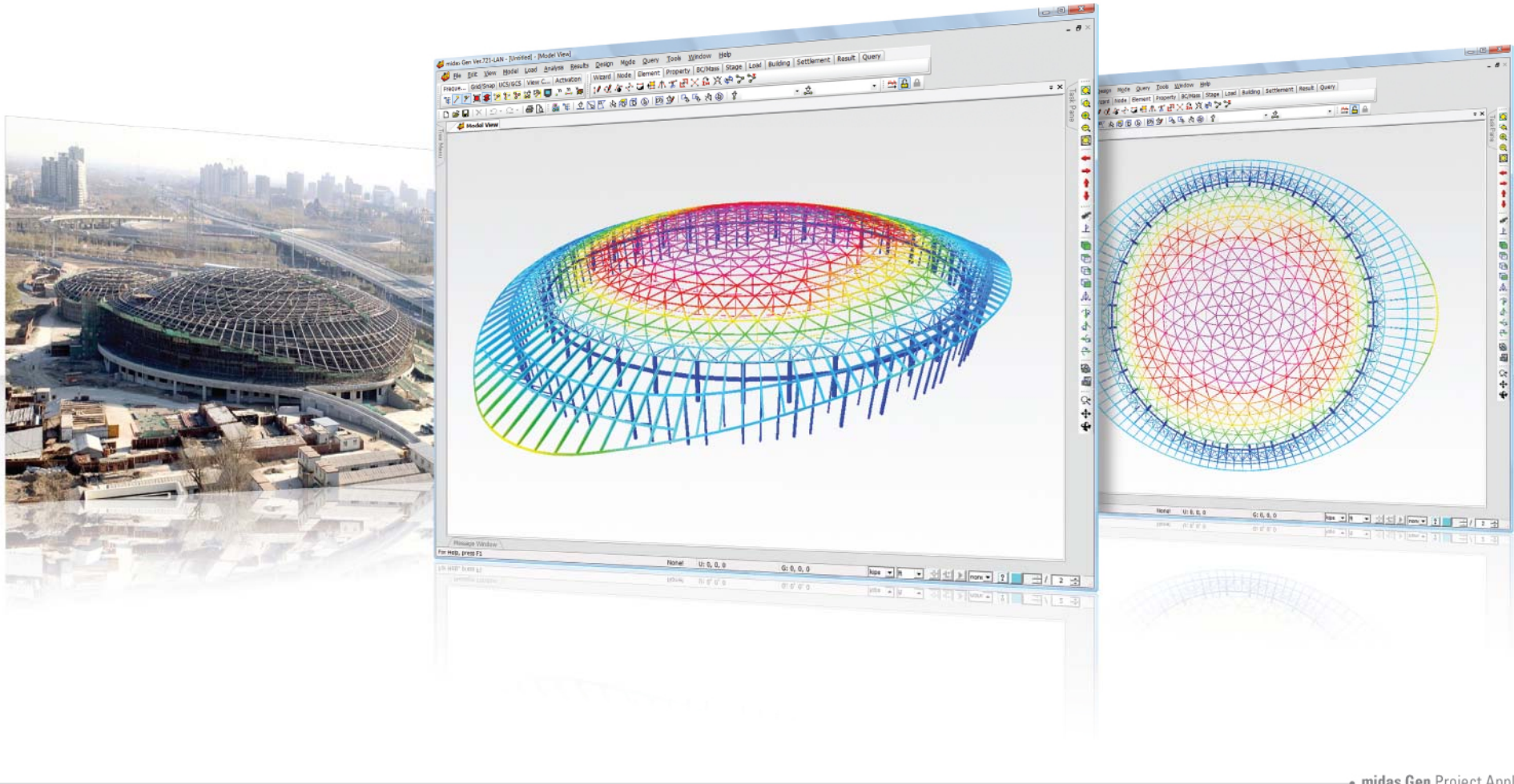


# Beijing University of Technology Gymnasium in China

The Beijing University of Technology Gymnasium boasts the world's largest prestressed suspension dome ceiling, which is 93 m in diameter. Also, the total amount of steel used in producing the structure only weighs approx. 1,200 tons, averaging 60 kg per sq. m.

## Overview

Site area	66,124 m <sup>2</sup>
Floor area	24,383 m <sup>2</sup>
Capacity	6,900 seats
Floors	4 (above ground) - 3 (below ground)
Structure	Steel frame
Function / Usage	Stadium / Arena
Architect (Design)	Architectural Design & Research Institute of South China University of Technology



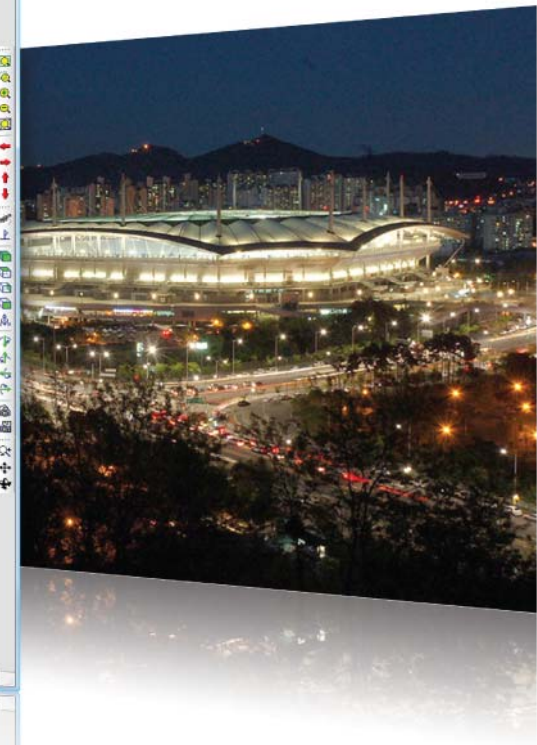
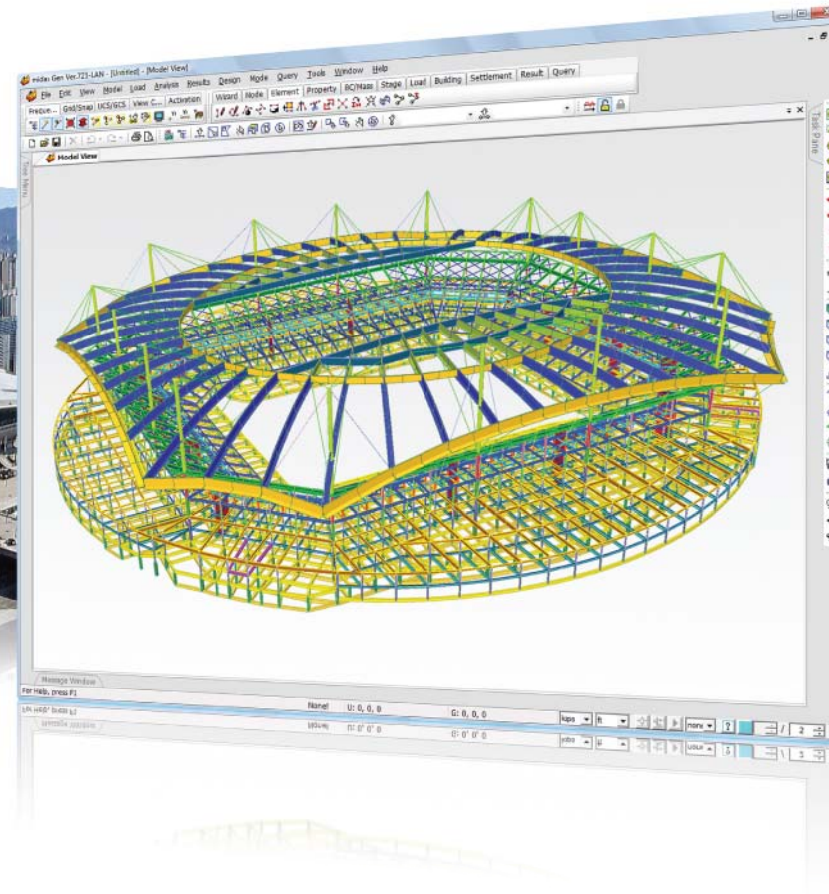
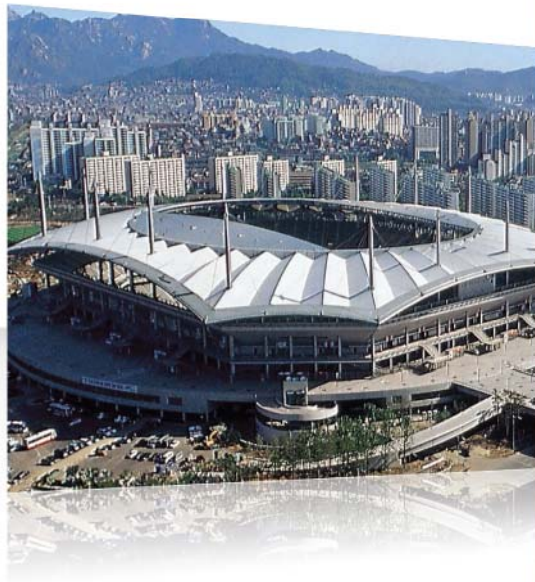
# Seoul World Cup Stadium in Korea

The Seoul World Cup Stadium, the largest soccer stadium in Asia, proudly exhibits its Korean roots.

The canopy is a unique spatial network of truss members suspended from 16 masts. The canopy structure is clad with a prestressed tensile membrane of PTFE coated fiberglass fabric and polycarbonate glazing resulting in the entire roof being either translucent or transparent.

## Overview

Site area	216,712 m <sup>2</sup>
Building area	59,777 m <sup>2</sup>
Floor area	155,674 m <sup>2</sup>
Capacity	65,856 seats
Floors	7 floors – B1 to 6
Structure	Steel frame and reinforced concrete structure PC structure Steel frame truss and cable structure
Type	Soccer stadium
Project cost	150 mil. USD
Duration	1998.10.20–2001.12.27
Architect (Design)	Beyond Space Group and 6 other firms
Contractor	Samsung Engineering and 5 other firms
CM firms	Hanmiparsons and 4 other firms





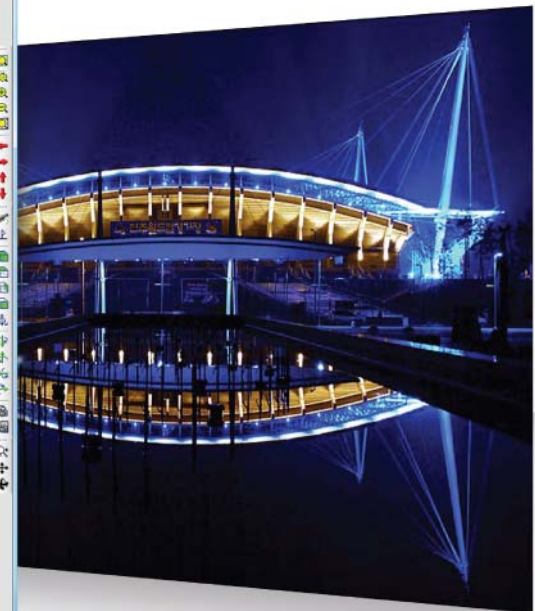
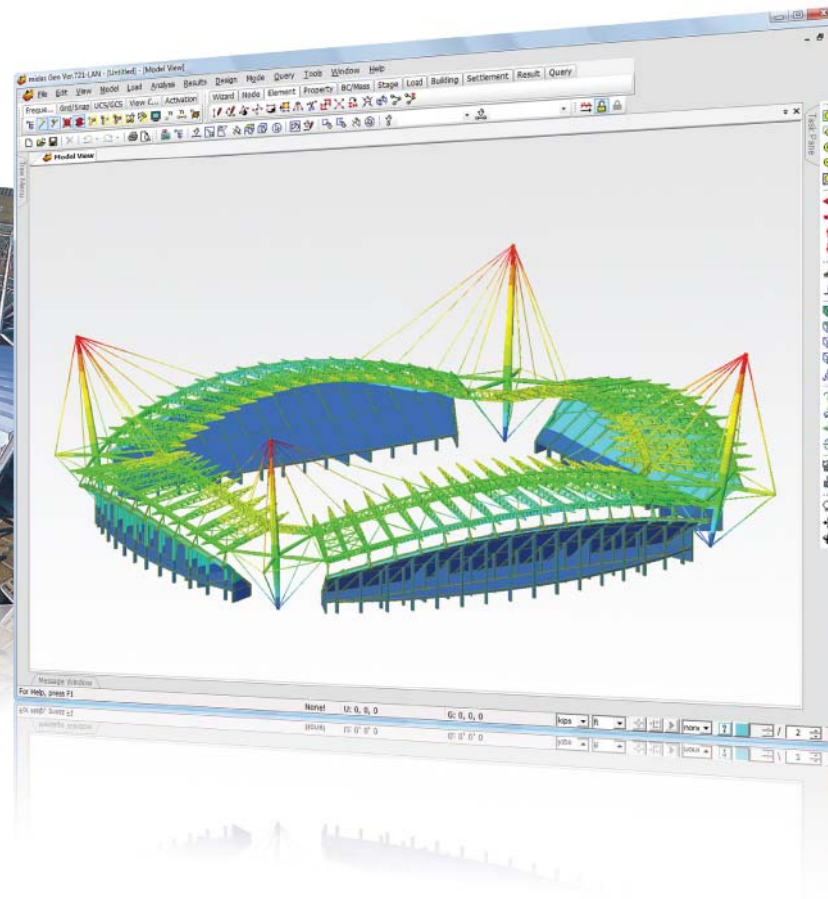
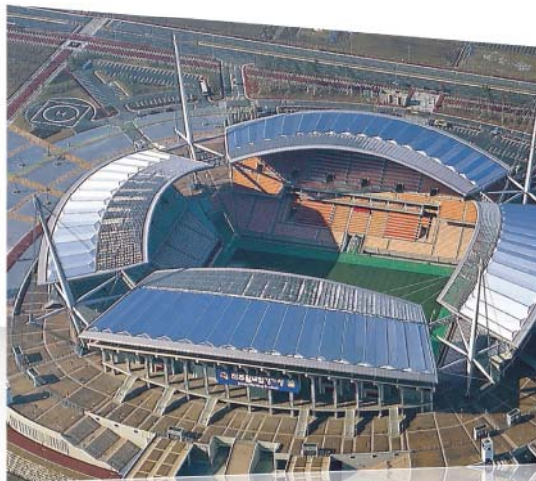
# Jeonju World Cup Stadium in Korea

The unique design comes from the Korean traditional fan, known as Hapjukseon in Korean.

This fan (as seen in the picture below) represents the beauty of traditional Korean designs. The design of the stadium gives visitors a dramatic feeling as the rows of the stadium seems to blend effortlessly into field.

## Overview

Site area	480,326 m <sup>2</sup>
Building area	52,249 m <sup>2</sup>
Floor area	90,667 m <sup>2</sup>
Capacity	43,348 seats
Floors	7 floors – B1 to 6
Structure	Steel frame and reinforced concrete structure PC structure Steel frame truss and cable structure
Type	Soccer stadium
Project cost	112 mil. USD
Duration	1999.2.19–2001.10.18
Architect (Design)	POS-A.C. and 2 other firms
Contractor	Sungwon Corp. and 2 other firms
CM firms	ITM Corp. and 4 other firms



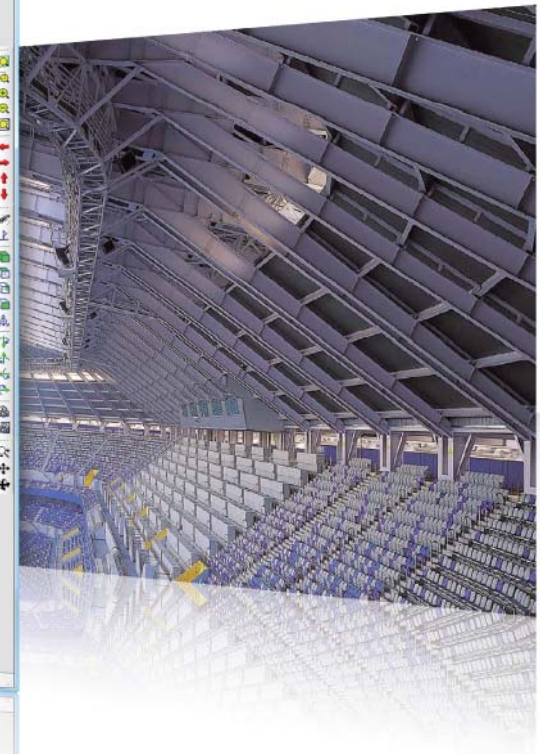
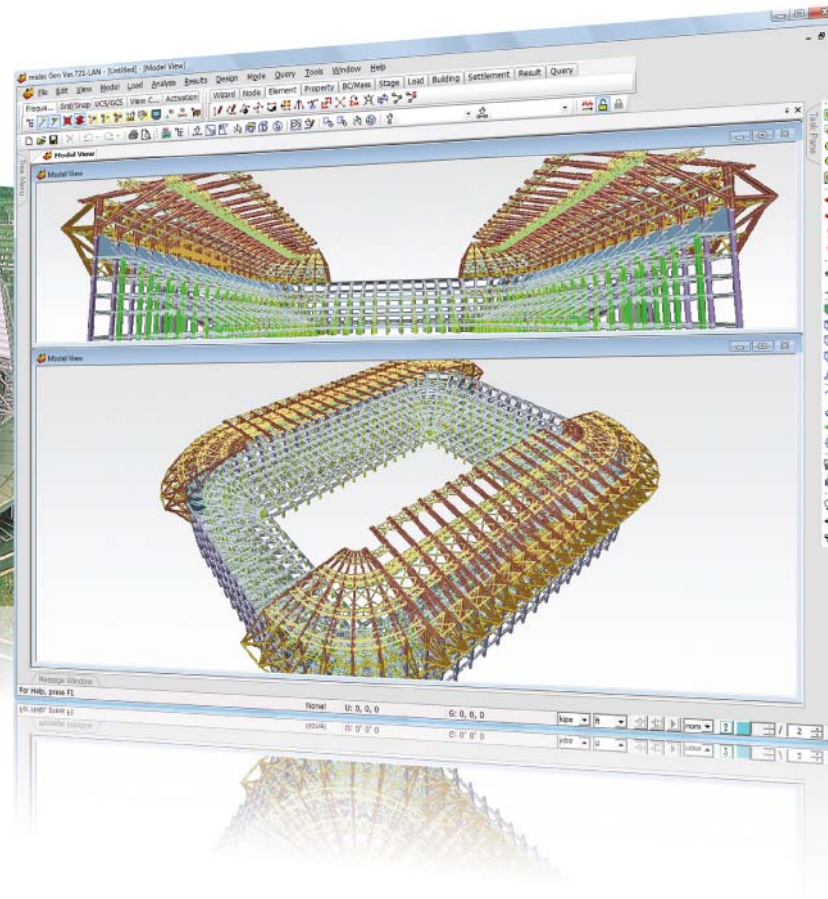
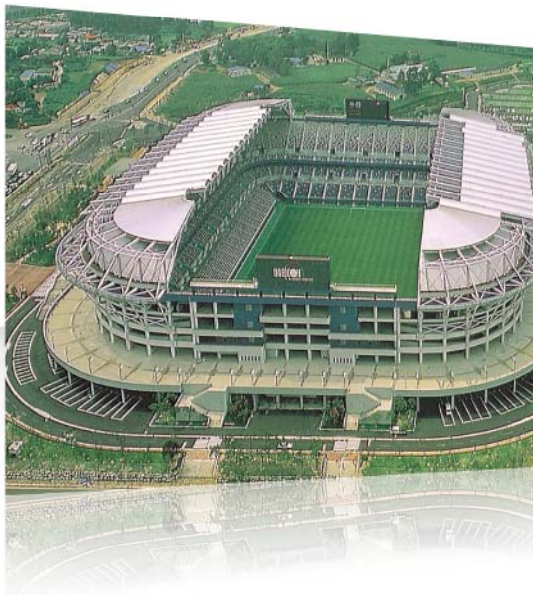
# Daejeon World Cup Stadium in Korea

The Daejeon Stadium is unique in that it is the only one of the World Cup stadia, and indeed the first stadium in Korea to feature a movable roof. As such, it aims to be a host to sporting events in all weathers.

The 40,407-seat Stadium is equipped with the state-of-the-art broadcasting facilities and communication facilities for use in a variety of sporting and concert-type events, or any kind of large scale of gathering.

## Overview

Site area	172,378 m <sup>2</sup>
Building area	34,851 m <sup>2</sup>
Floor area	100,597 m <sup>2</sup>
Capacity	65,856 seats
Floors	6 floors – B1 to 5
Structure	Steel frame and reinforced concrete structure PC structure Cantilever steel frame truss structure
Type	Soccer stadium
Project cost	94 mil. USD
Duration	1998.12.17–2001.9.30
Architect (Design)	YOO SHIN Architects & Engineers
Contractor	Hyundai Development and 52 other firms
CM firms	YOO SHIN Architects & Engineers and 2 other firms





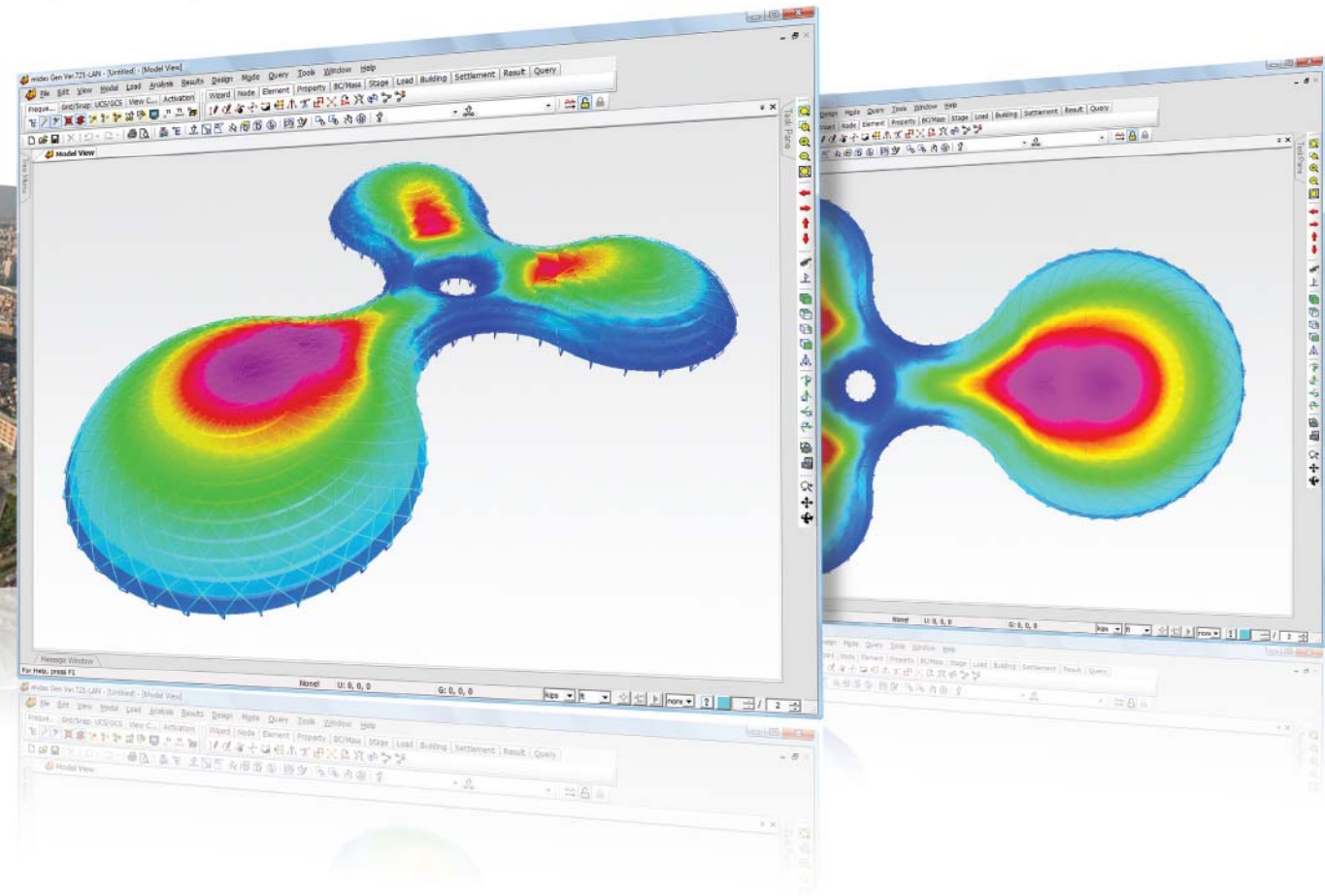
# Foshan Lingnan Mingzhu Stadium in China

## Overview

Site area	122,152 m <sup>2</sup>
Building area	223,000 m <sup>2</sup>
Capacity	9500 seats
Function / Usage	Stadium / Arena
Project cost	550 mil. USD
Architect (Design)	Mitsuru Senda Environment Design Institute, Japan Architectural Design & Research Institute of Guangdong
Contractor	Guangzhou 3rd Construction & Engineering Co., Ltd.

### 2008 International Architecture Awards for the Best New Global Design

The dome structure of the main stadium was designed to be both architectural and engineering marvel. Arched members are precisely arranged to create ringed assemblies which ascend to form the dome structure. These arched members are also configured to support the central and lateral pillars of the oblique structures. The dome is inherently stable against wind or seismic loads.



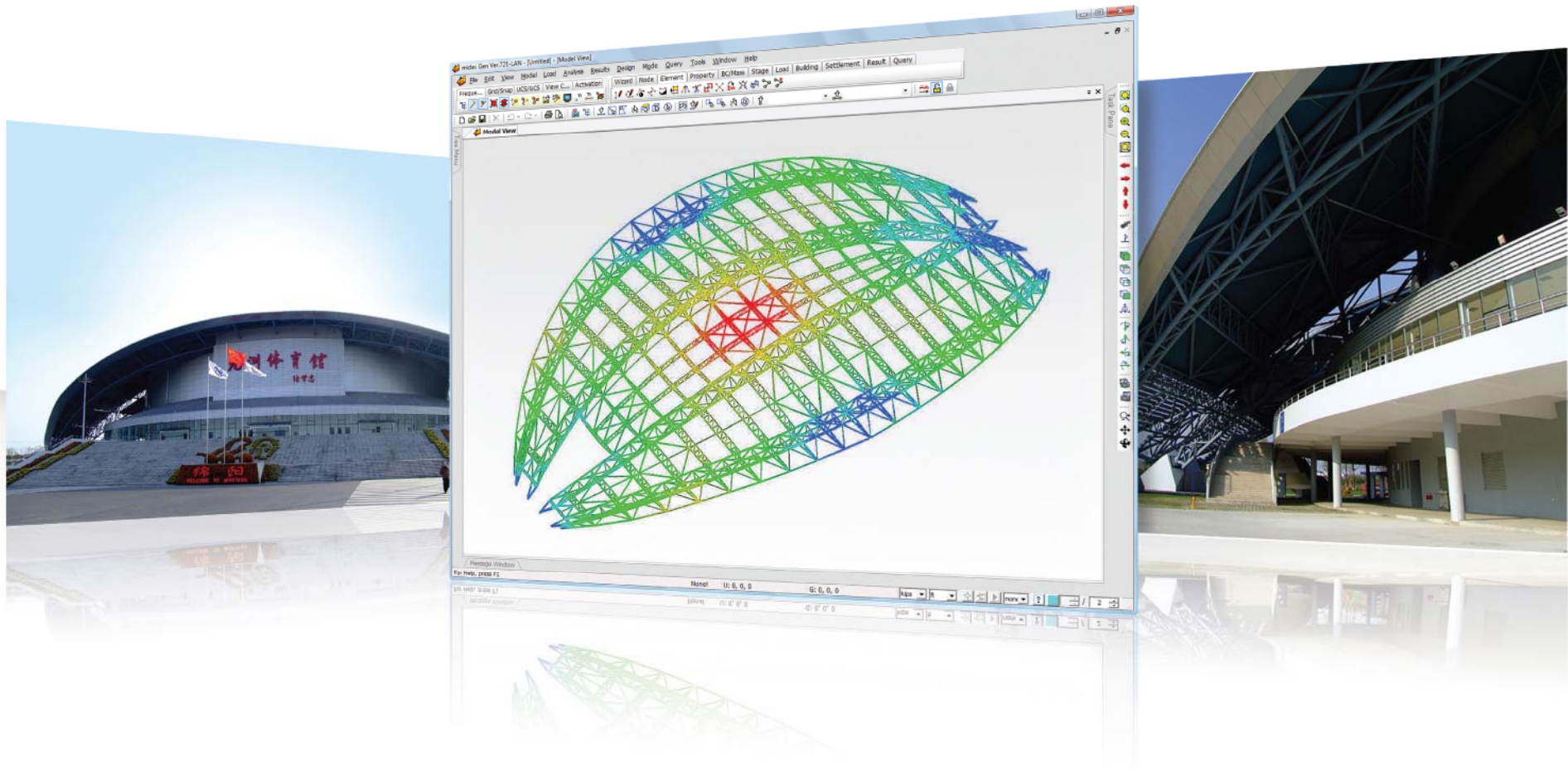
# Jiuzhou Stadium in China

Located in the south-west region of China, Jiuzhou Stadium is a first-class and modern landmark. This gymnasium serves as a national multi-purpose fitness, leisure and entertainment facility. As it seemingly embraces the natural beauty of the landscape, it currently attracts many visitors who search for both sport and leisure.

On May 12th, 2008, in the aftermath of the Sichuan earthquake that rocked the region, Jiuzhou Stadium became the temporary housing of more than 20,000 survivors.

## Overview

Site area	829,620 m <sup>2</sup>
Building area	161,877 m <sup>2</sup>
Capacity	6,000 seats
Function / Usage	Stadium / Arena
Project cost	150 mil. USD
Architect (Design)	Beijing Institute of Architectural Design



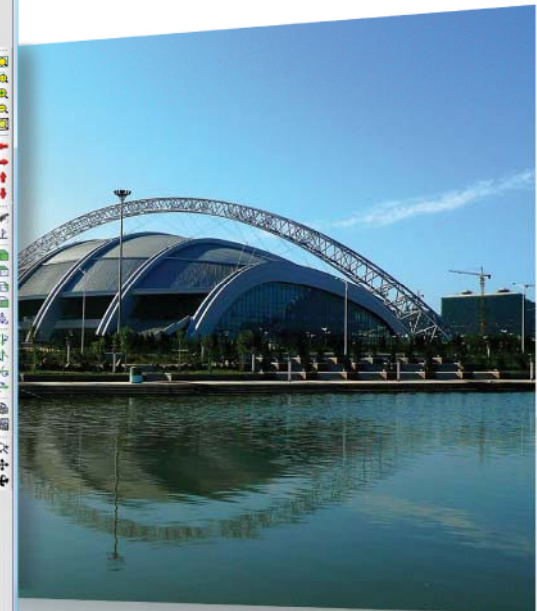
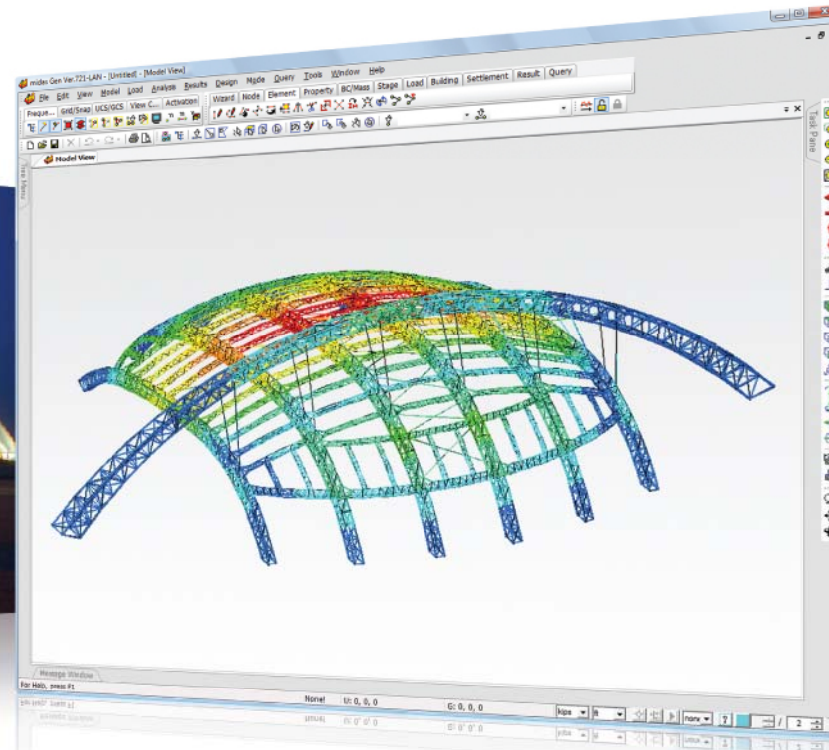


# Yantai University Gymnasium in China

Yantai University Gymnasium is a majestically engineered, multi-functional facility. To support the super arches, massive concrete footing platforms were designed. These concrete footings required detailed analysis in accordance with the specific conditions of the construction site to formulate a practical construction plan.

## Overview

Site area	50,980 m <sup>2</sup>
Building area	8728 seats
Structure	Reinforced concrete frame and steel structure
Function / Usage	Stadium / Arena
Architect (Design)	Yantai Qingquan Architecture Building Material Co., Ltd

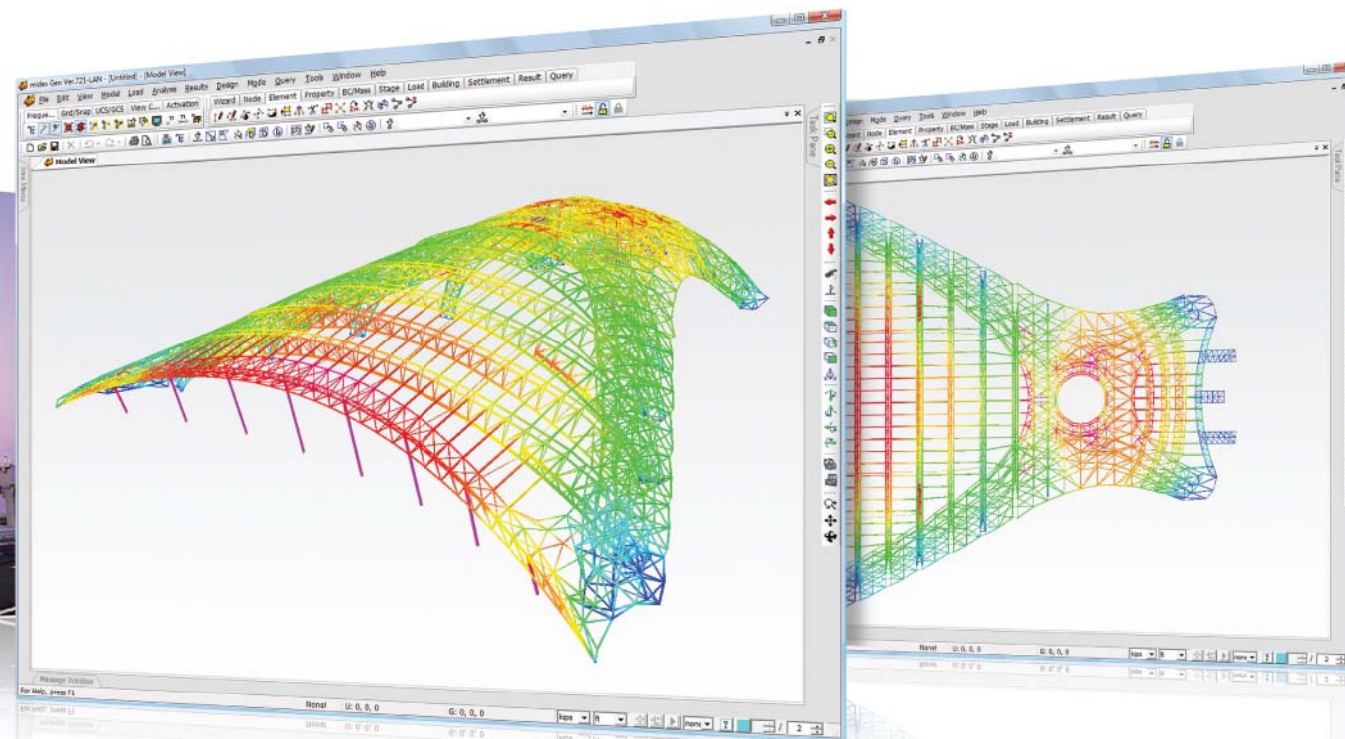


# Incheon International Airport Transportation Center in Korea

The Incheon International Airport Transportation Center is an icon of dynamism, embracing culture and flight, and invoking the future. The structural form and composition symbolizes flight and dynamism. The steel truss structure rises from the ground and vaults over the hall. The long graceful curves of the skeletal roof express the fluid form of a plane in take-off. Resting on top is the futuristic pod-like flight control centre. With its glass belly, it acts as an aerofoil for the natural ventilation of the interior hall below.

## Overview

Site area	250,000 m <sup>2</sup>
Floor area	76,181 m <sup>2</sup>
Floors	6 (above ground)
Structure	Truss roof
Function / Usage	Railroad station
Duration	Completed in 2002
Architect (Design)	Terry Farrell & Partners
Contractor	Samsung, Hyundai and Daewoo Engineering & Construction Co., Ltd.



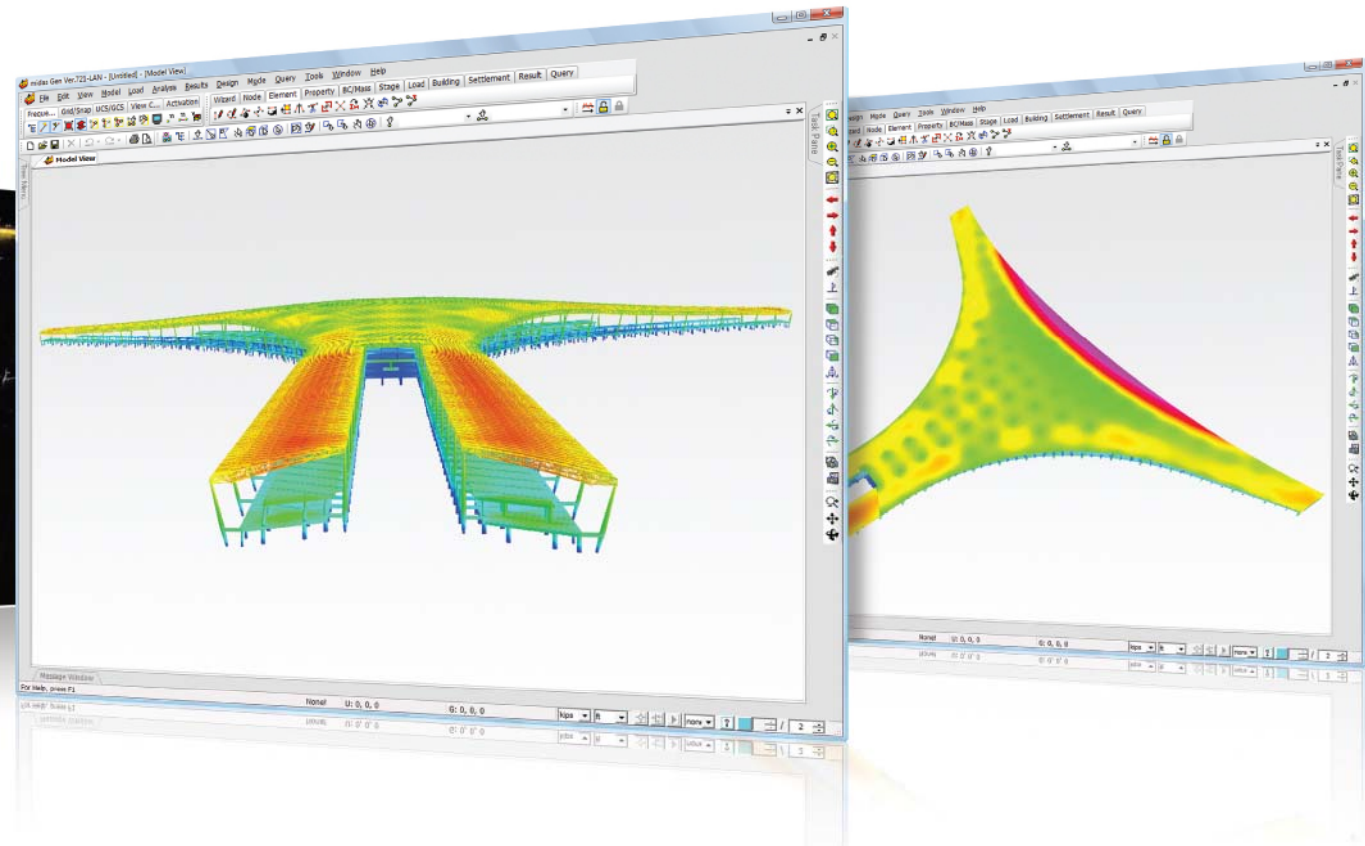
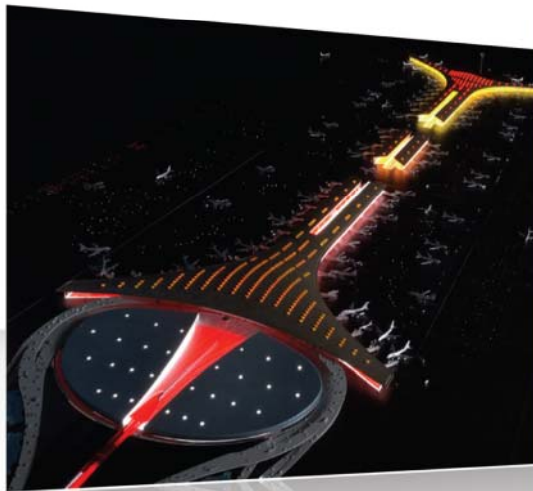


# Terminal 3 at Beijing Capital International Airport in China

This new terminal is arguably the largest and most advanced airport building in the world – a celebration of aviation and poetry in flight. With its dragon-like form and traditional Chinese colors and symbols, it has become an awe-inspiring gateway to Beijing.

## Overview

Site area	1,300,654 m <sup>2</sup>
Building area	986,000 m <sup>2</sup>
Capacity	50 million passengers per year
Project cost	3.65 bil. USD
Architect (Design)	Foster and Partners, and Arup

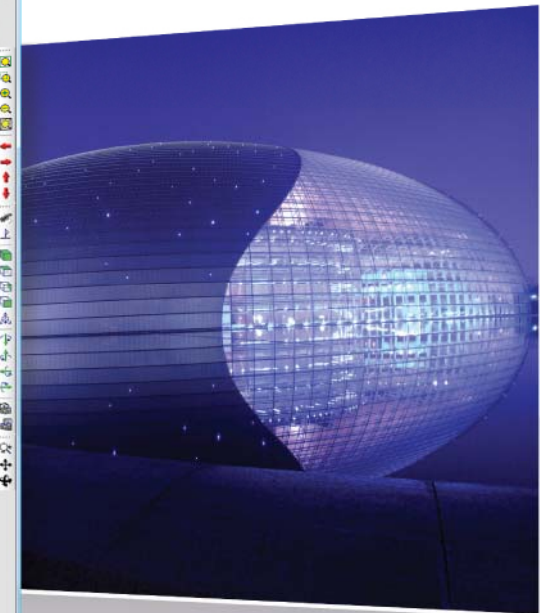
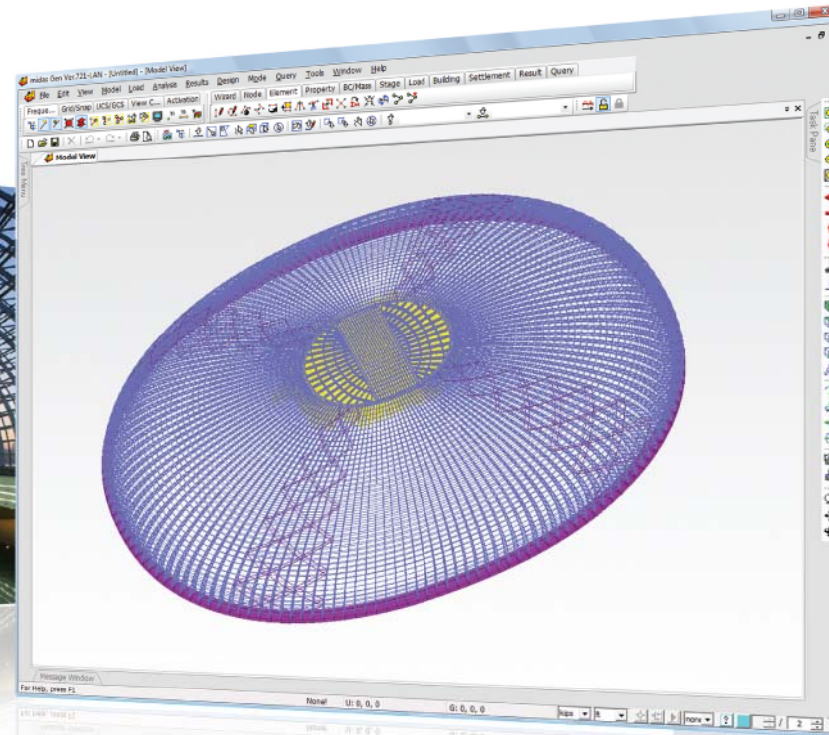
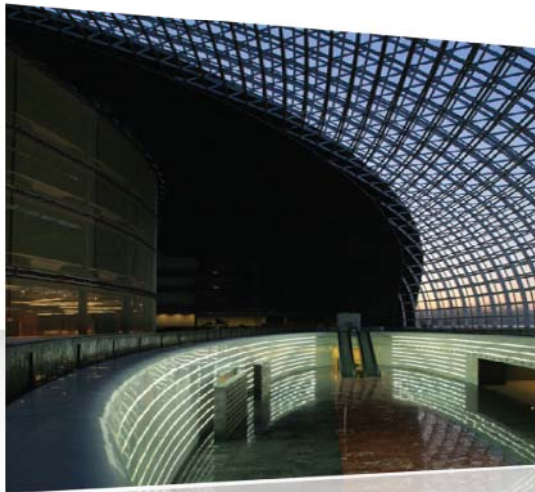


# Grand National Theater in China

The National Centre for the Performing Arts, colloquially described as "The Egg," is an iconic opera house located in Beijing, China. The theater sits in the center of a mirror-like, artificial lake and is encased with a titanium accented glass dome. This simple design captures a breathtaking awe which can be immediately recognized worldwide.

## Overview

Building area	12,000 m <sup>2</sup>
Capacity	5,452 people
Function / Usage	Opera house
Project cost	4.7 bil. USD
Duration	Dec. 2001 ~ Dec. 2007
Architect (Design)	Paul Andreu



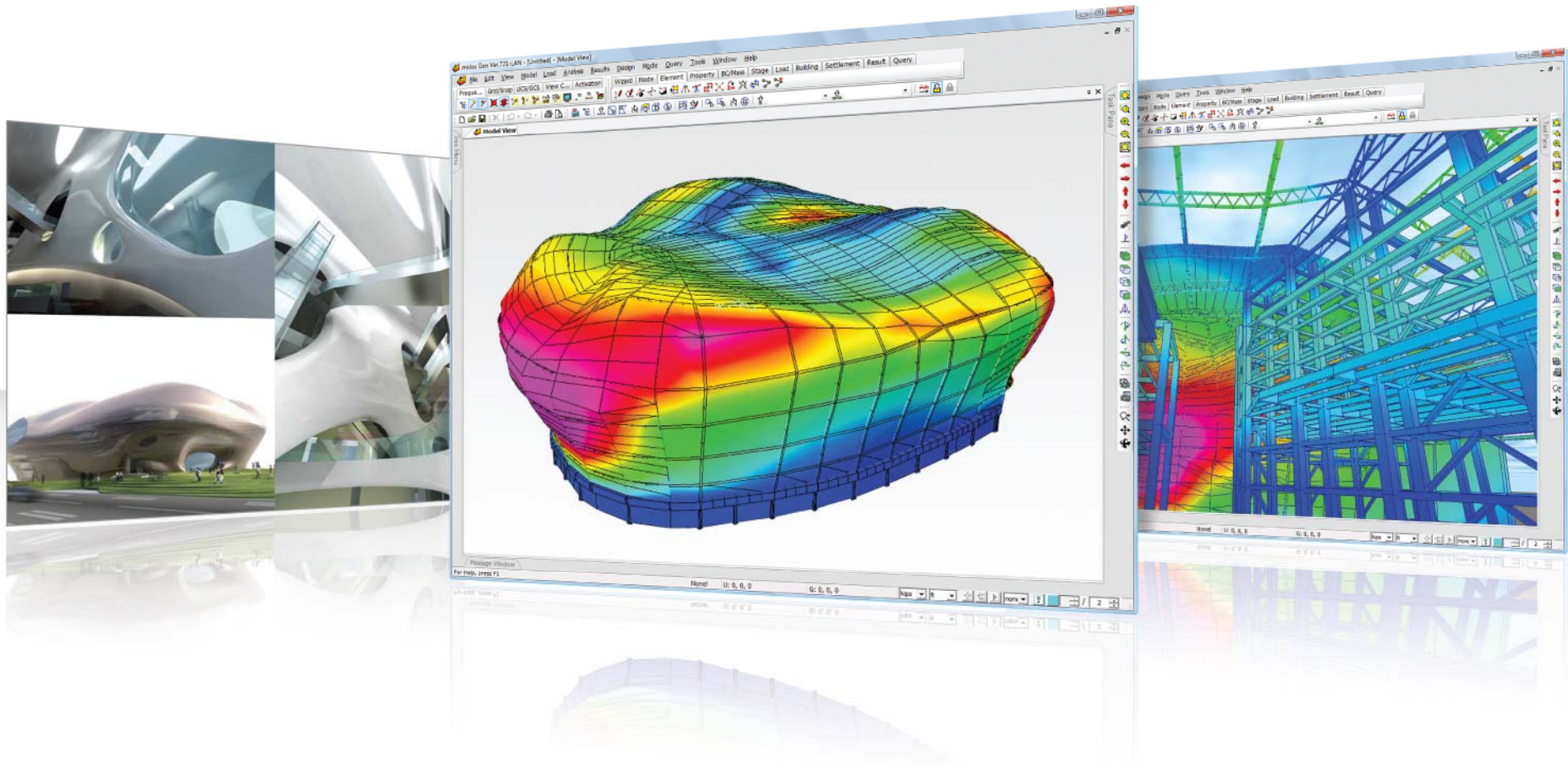


# Erdos Museum in Mongolia

Located in a fast-developing city, Erdos Museum is a natural, irregular nucleus that contrasts the growing city landscape. Encircled by reflective metal louvers, this unique design completely separates the interior setting from the outside. From the exterior, the louvers create an artistic, fragmented reflection of the museum's environment.

## Overview

Site area	27,760 m <sup>2</sup>
Building area	41,227 m <sup>2</sup>
Structure	Glass dome and steel structure
Function / Usage	Museum
Architect (Design)	MAD



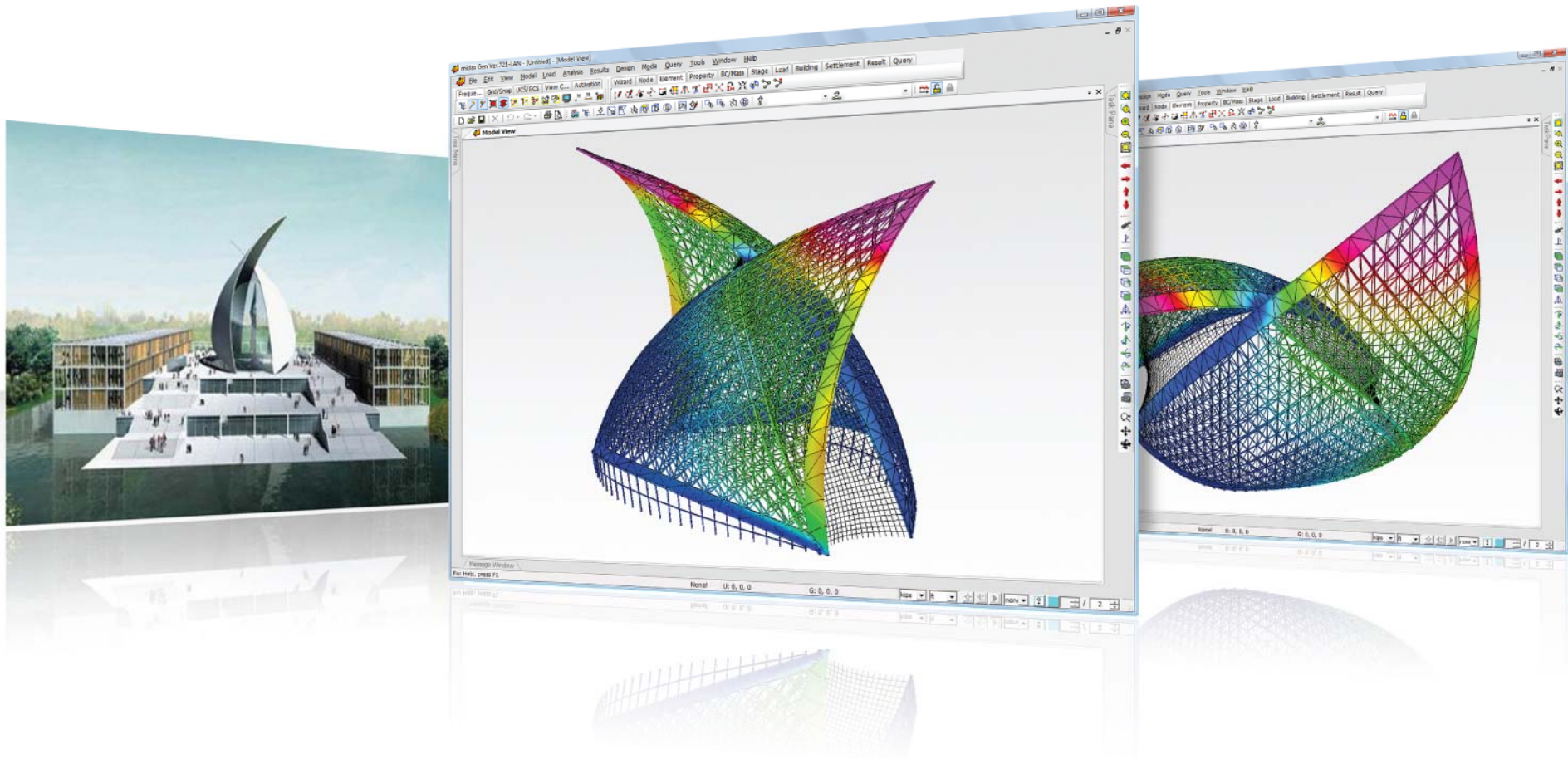
# Maritime Museum in China

The architectural design exhibits an exterior that is both simple and dramatic, drawing on the dynamic quality of navigation. The design also serves to integrate artistic, cultural and environmental elements within the overall theme of navigation. High tech elements are incorporated including DLP projection systems, infrared sensors, acoustic control and water curtain technology to merge dramatic, artistic and environmental displays. The museum's interior design captures the long heritage of the nation's maritime past.\*

\*Source: <http://www.mmc.gov.cn/en/brief.html> (Retrieved March 26, 2009)

## Overview

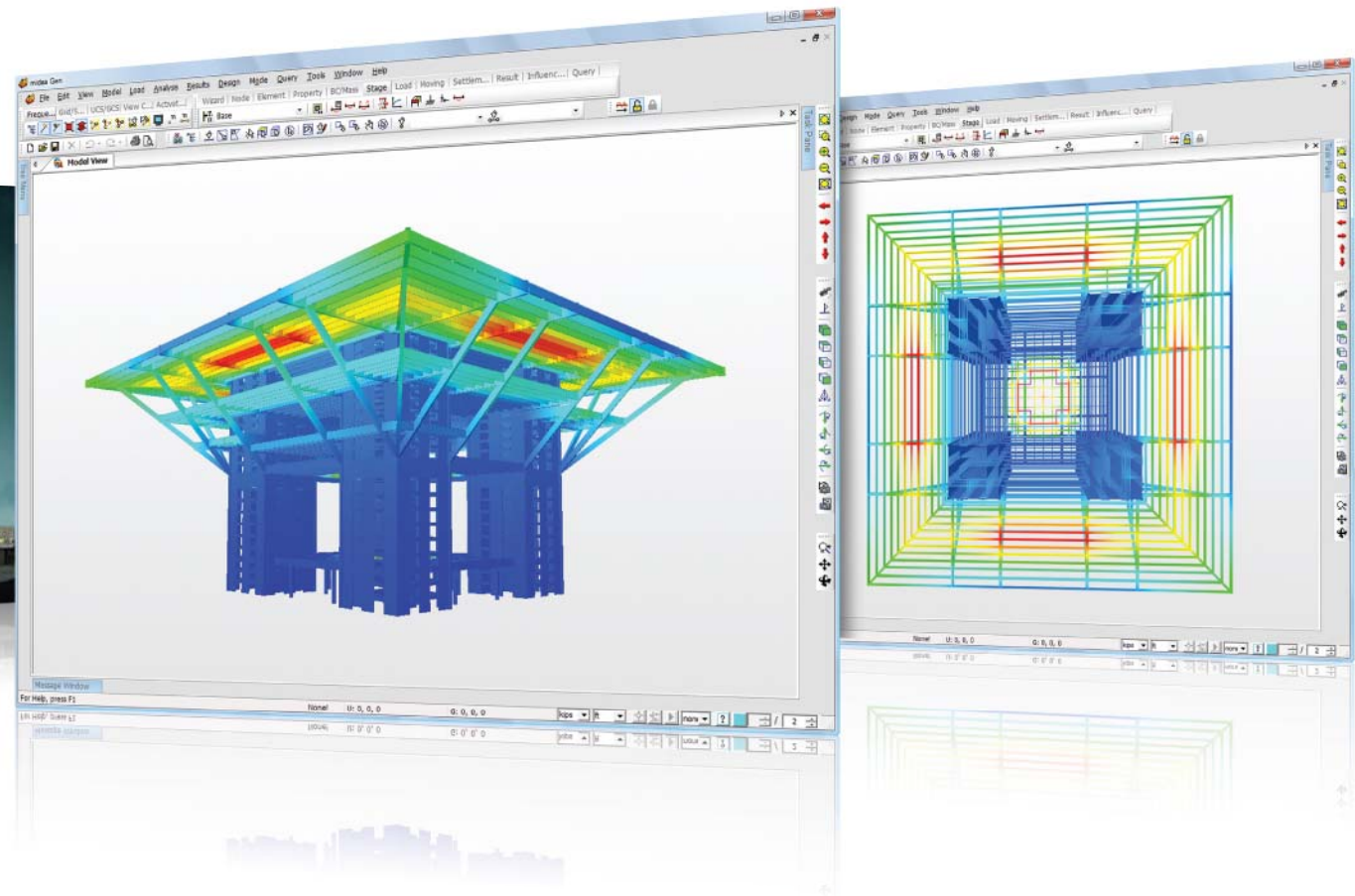
Site area	25,000 m <sup>2</sup>
Floor area	46,400 m <sup>2</sup>
Structure	Shell Structure
Function / Usage	Museum
Project cost	732 mil. USD
Architect (Design)	GMP Hamburg
Contractor	The Shanghai Lingang New City Development (Group) Co. Ltd.





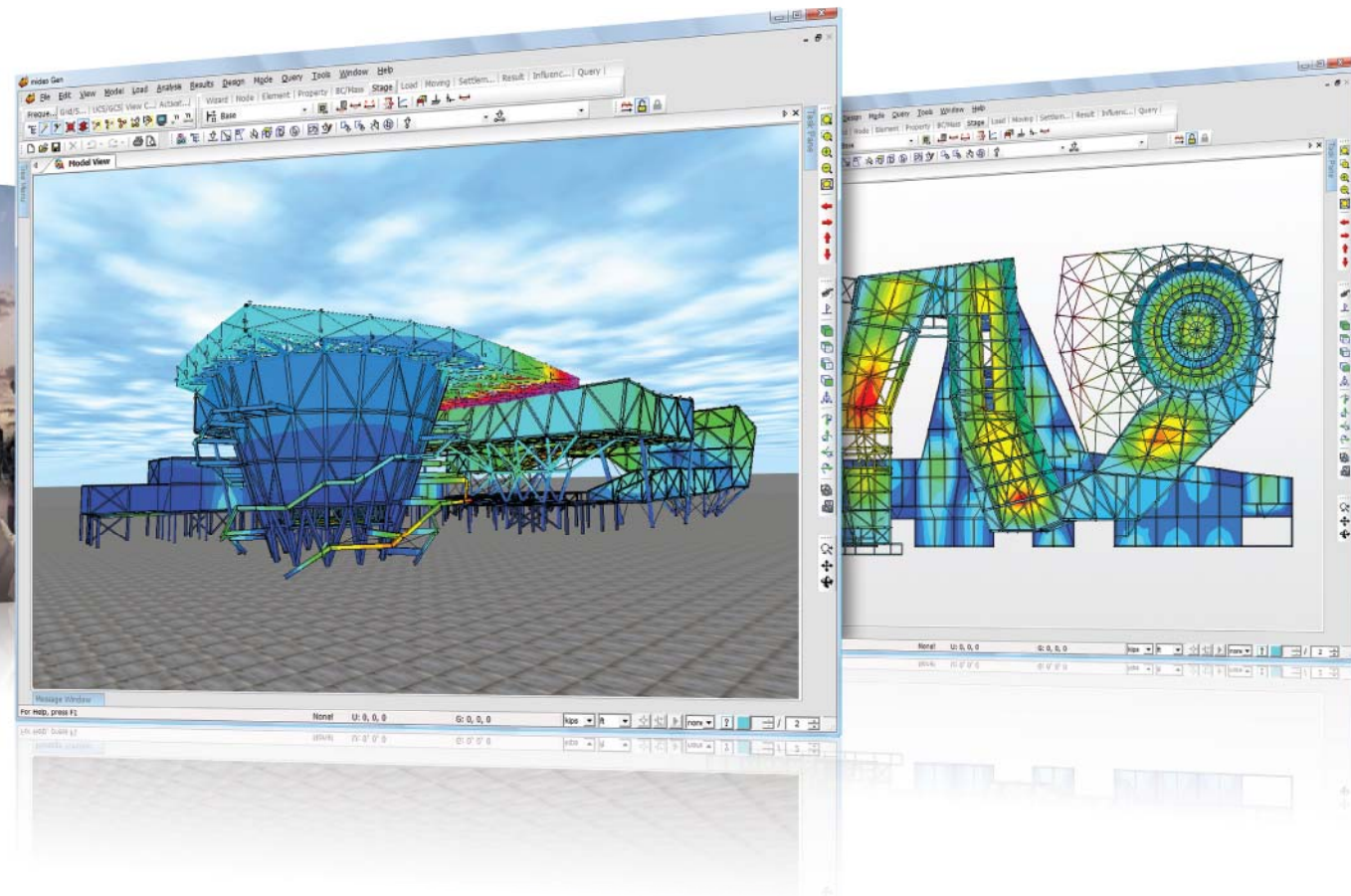
# China Pavilion Oriental Crown

The China Pavilion is designed with the concept of "Oriental Crown." The traditional Chinese wooden structure element, Dougong brackets, is introduced. Its main colour is "Gugong (Forbidden City) Red" which represents the taste and spirit of Chinese culture. The China Pavilion consists of the 47,000-square-meter Chinese national pavilion, 38,000-square-meter Regional joint pavilion and 3,300-square-meter pavilion of Hong Kong, Macao and Taiwan.



# Germany Pavilion

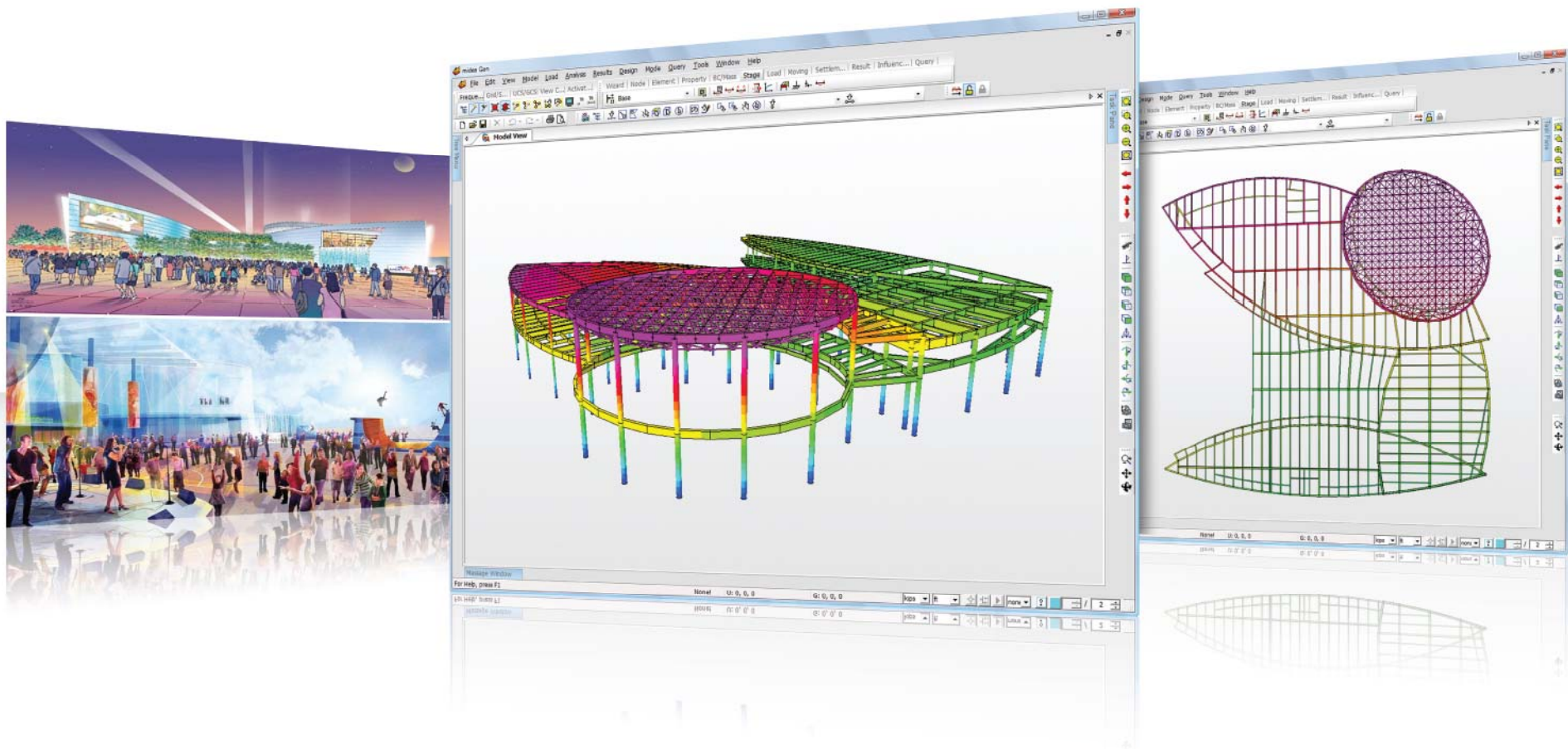
The 6,000-square-meter Germany Pavilion, named "Balancity," will showcase typical urban life in Germany and introduce how the country's products help solve urbanization problems. The German government invested 30 million euros (US\$47.34 million) in the pavilion, said Dietmar Schmitz, commissioner general of the German Section in the Expo. Some German companies will also contribute.





# USA Pavilion

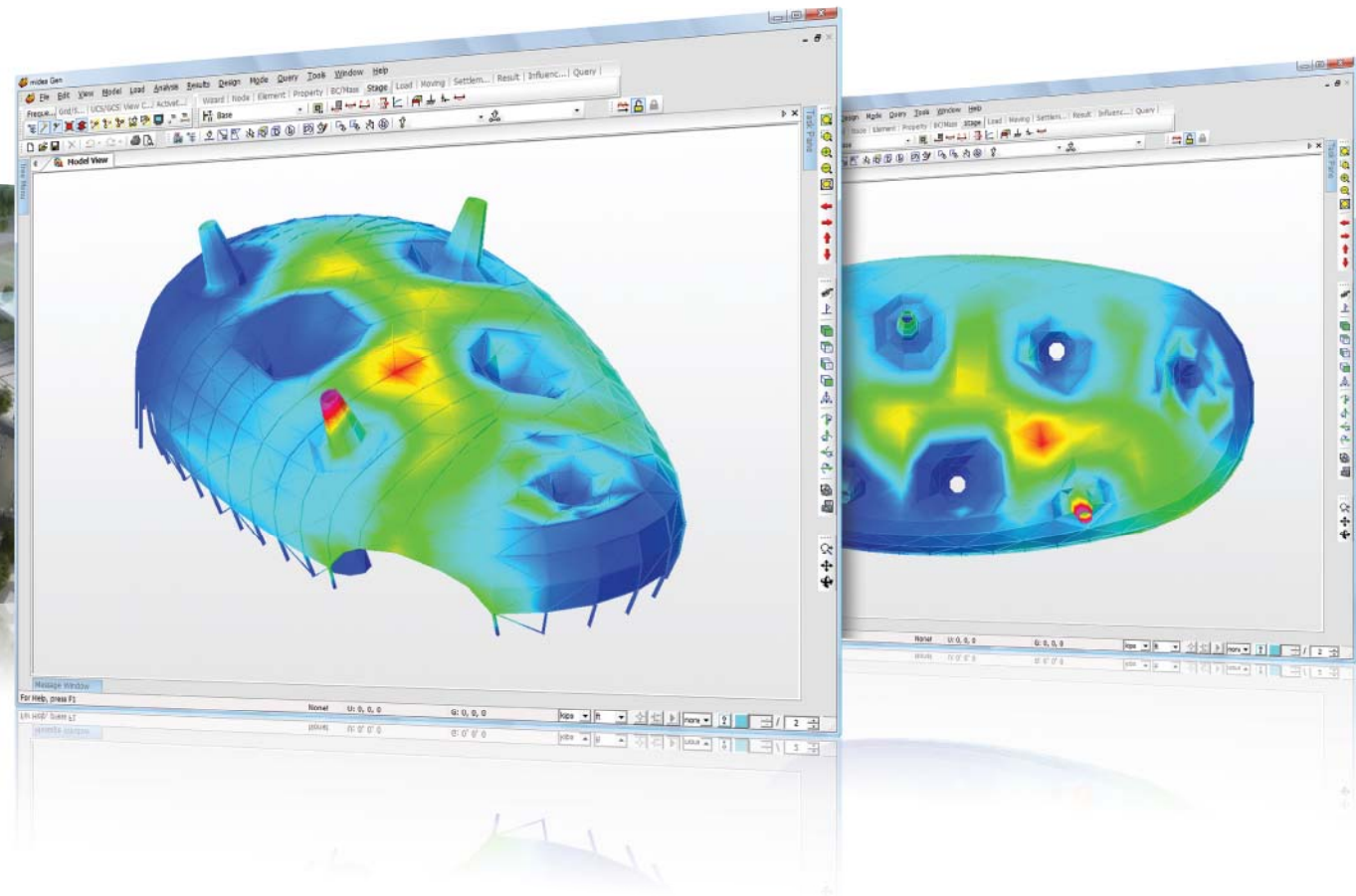
USA is expected to make their presence felt when they introduce their pavilion which covers an area of 6,000 square meters. The latest images of the USA Pavilion concept embraces a post-industrial Earth-in-the-balance effect equipped with the latest technology. Some of the technology that will be showcased includes: green building materials and process; sustainable procurement and agricultures;



# Japan Pavilion

Japan Pavilion has secured a 6,000-square-meter plot at the Expo site. The 24-meter-high pavilion is the largest the country has ever built for a World Expo. It is also one of the largest pavilions at Expo 2010.

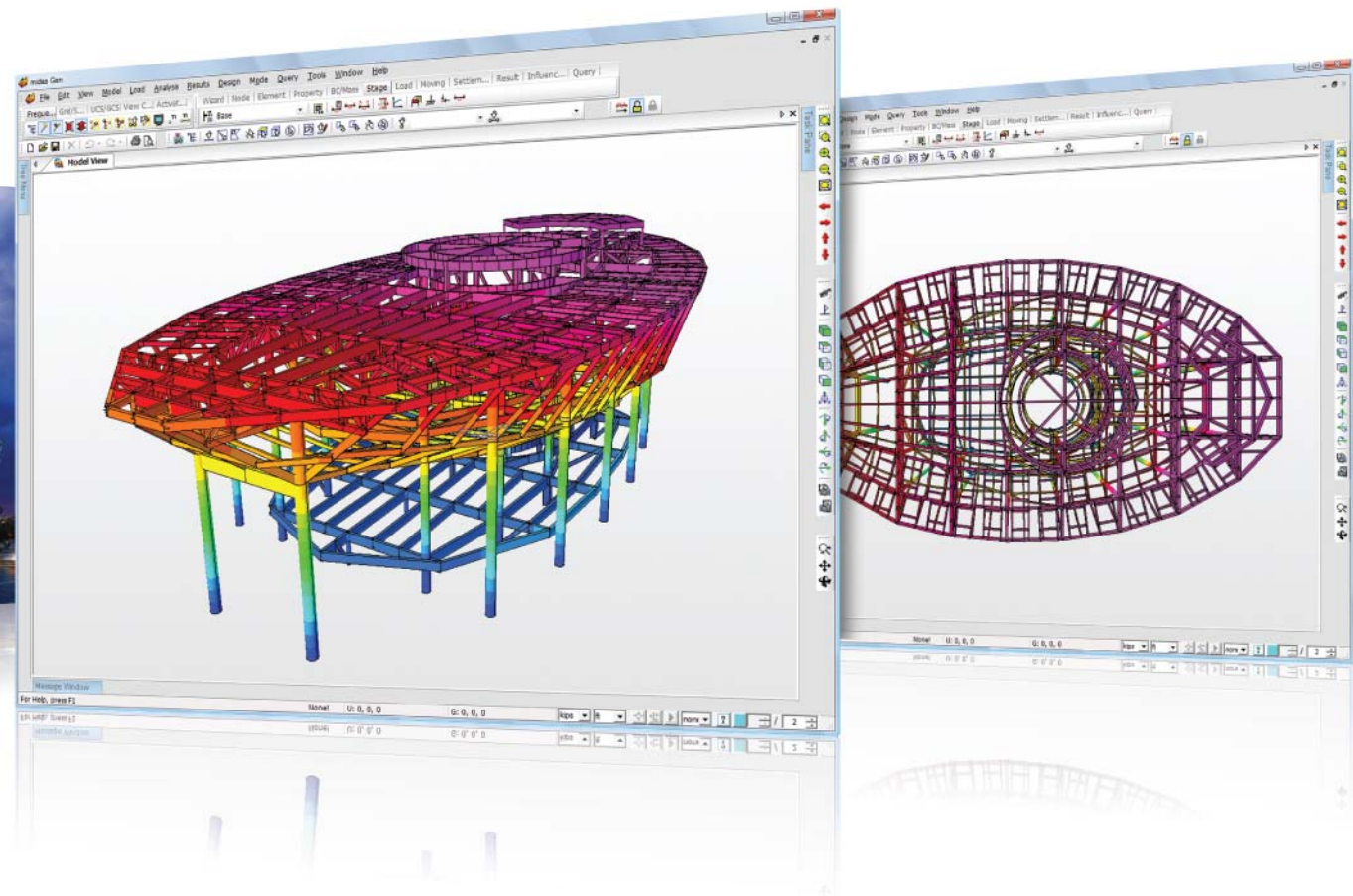
The pavilion will be divided into past, present and future exhibits. The country's semi-circular pavilion will make efficient use of natural resources with solar energy collection batteries and a double-layer membrane that can filter sunshine to coincide with its interpretation of how technology can better our lives.





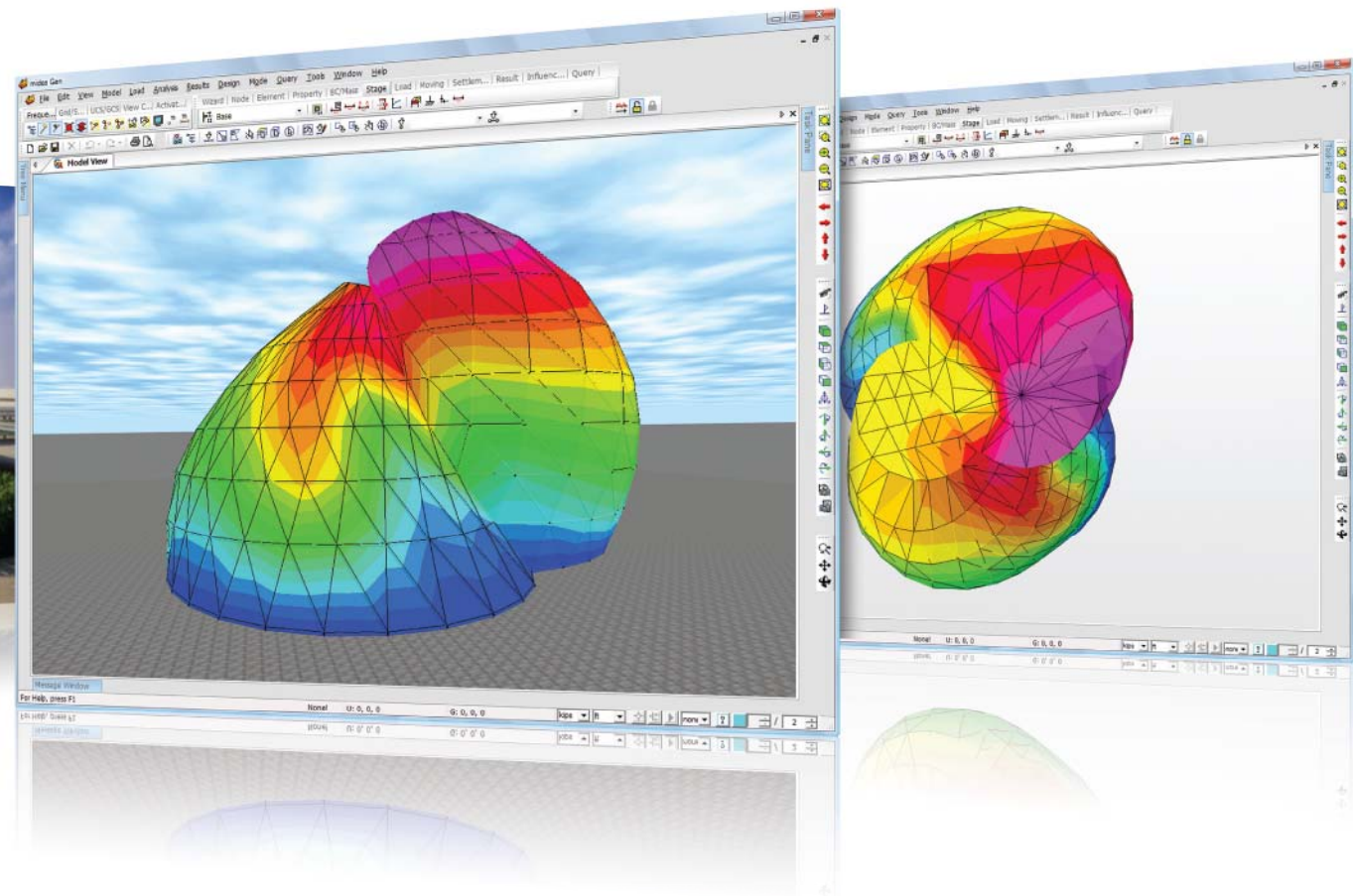
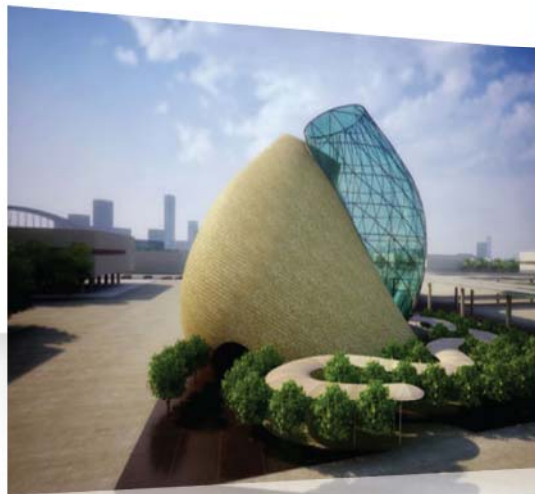
# Saudi Arabia Pavilion

The Saudi Arabia Pavilion grows up as an elegant palace shining in the grand burning desert. The floating curved roof brings the thousands of audience to walk through the desert, date palms and rivers, to arrive at the curved main entrance at the south of the building. The natural condition and historical development of Saudi Arabia is represented by the stretched landscape inside and outside, and the curved slope and the hourglass in the central area as well.



# Israel Pavilion

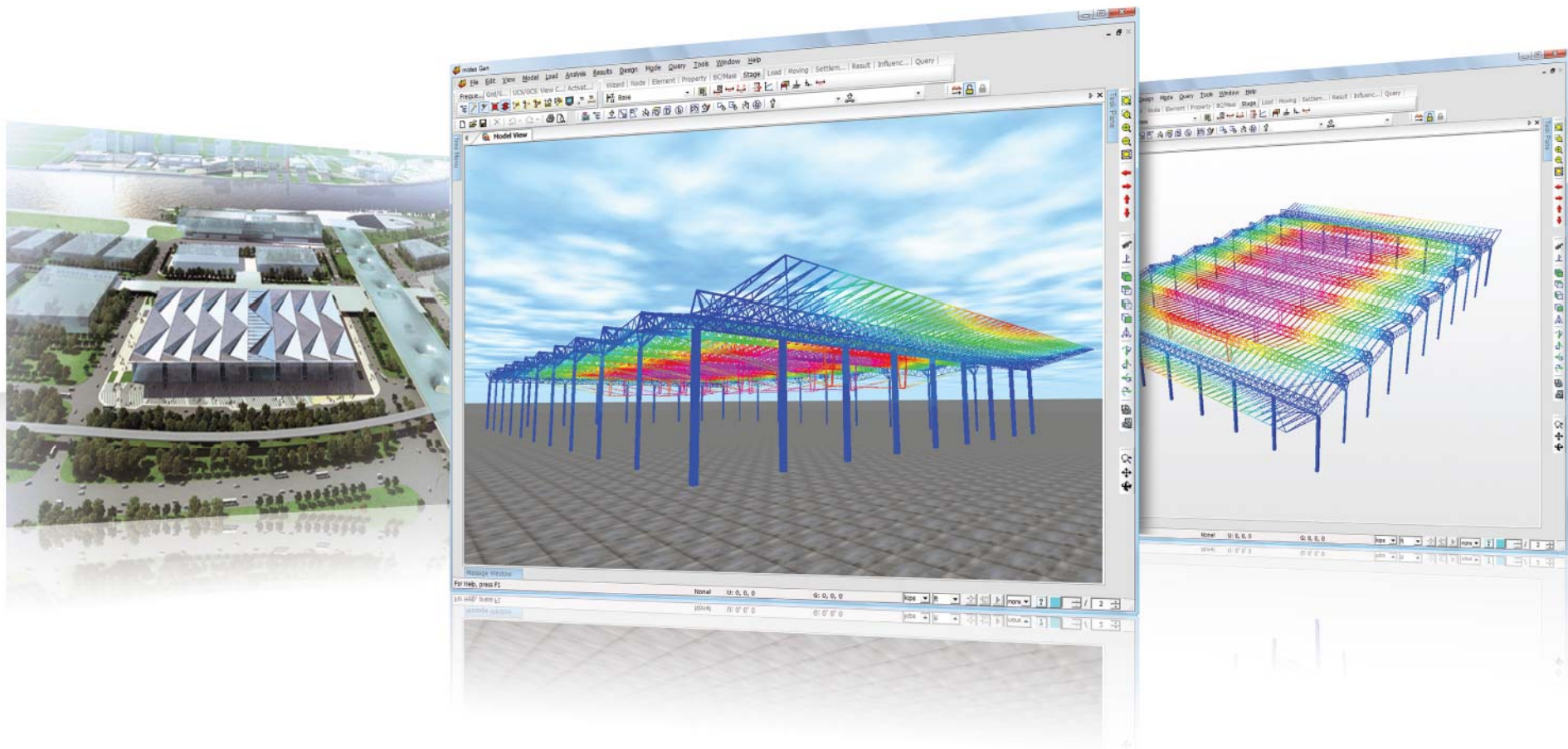
The pavilion consists of three areas - Whispering Garden, Hall of Light and Hall of Innovations. The Whispering Garden is a green orchard that greets visitors as they enter the building. Some facilities will be installed to make the trees begin to “whisper” in both English and Chinese when visitors walk close to them, Haim Z. Dotan, chief designer of the pavilion, told Shanghai Daily. The hall of Light includes a 15-meter high screen. It will display films highlighting the country's innovations and technological achievements.





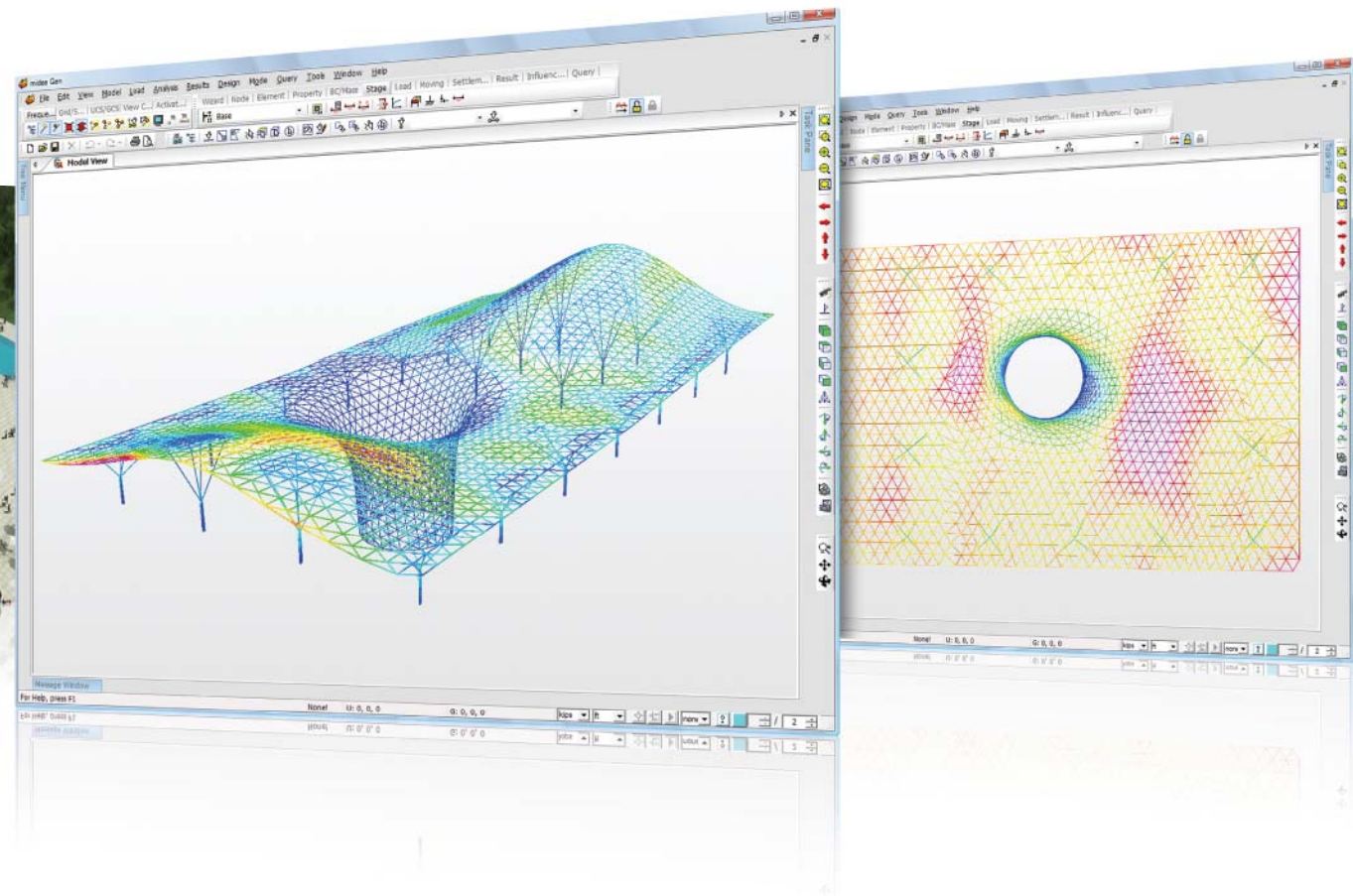
# Theme Pavilion

The green and energy-efficient Theme Pavilion will cover 80,000 square meters above ground, and another 40,000 square meters underground. Exhibitions will cover 70,000 square meters. The major exhibition hall covers 30,000 square meters, without supporting pillars. The Theme Pavilion will be Shanghai's second-largest exhibition hall, after the New International Expo Center in Pudong, which has 100,000 square meters of exhibition areas.



# Sunshine vale of the Axis

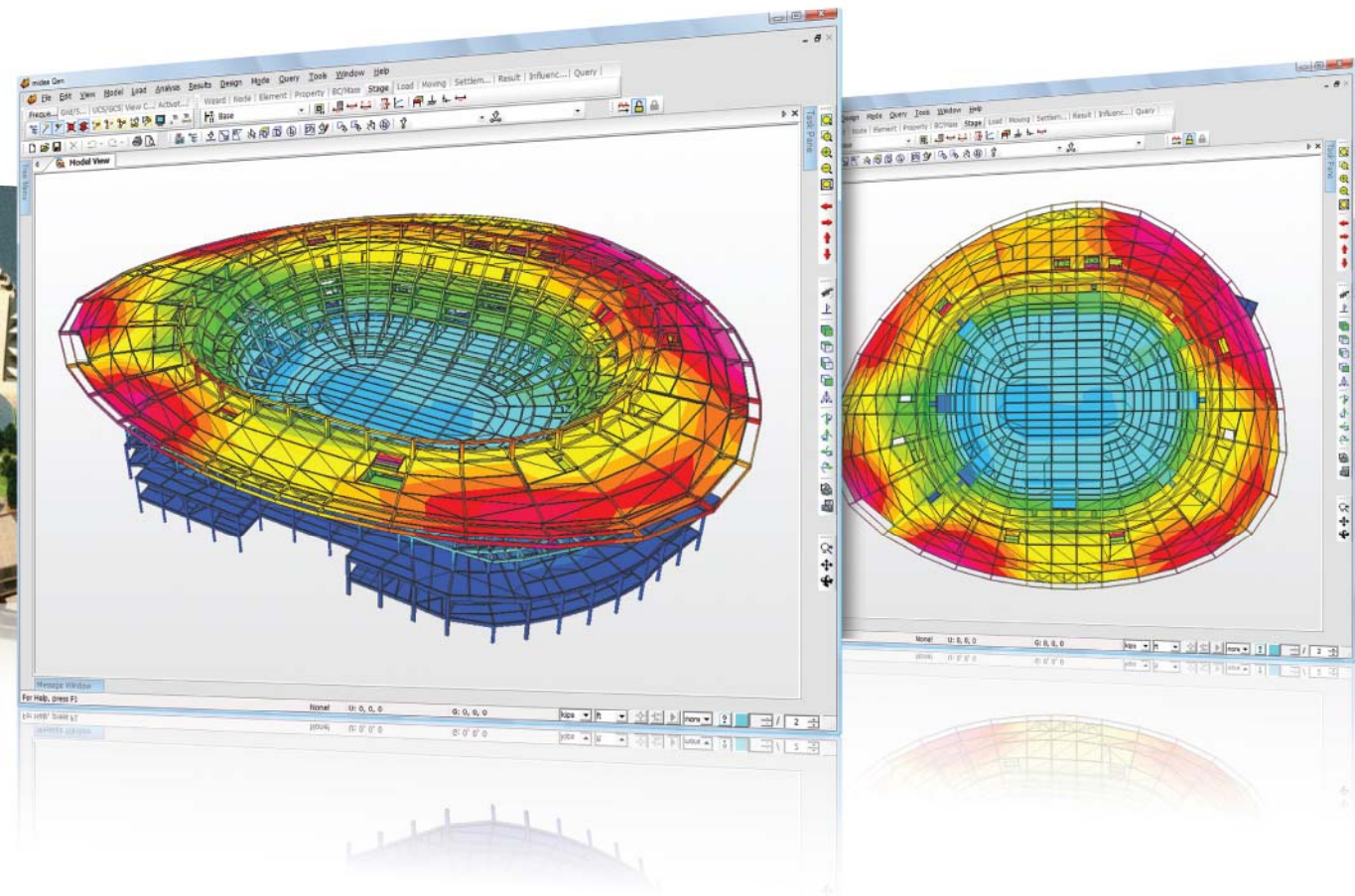
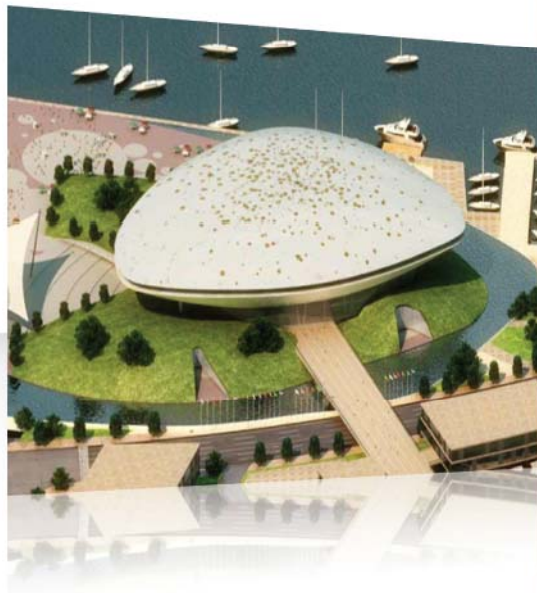
This "Sunny Valley" can collect rainfall and disperse sunshine into the underground level of the boulevard, said Ding Hao, deputy director general of the Bureau of Shanghai World Expo Coordination. Six of these horn-like structures will be built along the one-kilometer boulevard. It will also use river water for cooling. This can save 432,000 kilowatt hours of electricity and reduce carbon dioxide emissions by 432 tons every year. The Expo Boulevard is one of the gateways to Expo Park. The 2.4 million square meters construction is the largest in the park.





# Performing Art Center

The performance center, which will hold most of the 20,000 Expo performances during the six-month Expo, was the last of the five permanent Expo buildings to start construction when work began in December 2007. The other four are the China Pavilion, Theme Pavilion, Expo Center and Expo Boulevard. The 126,000-square meter center will be the largest comprehensive performance arena in China. It will have two floors underground and four above ground. The seating configuration of the main auditorium, which has a center stage, can be changed to accommodate 4,000, 8,000, 12,000 or 18,000 seats depending on the requirements of the performance and the audience size.

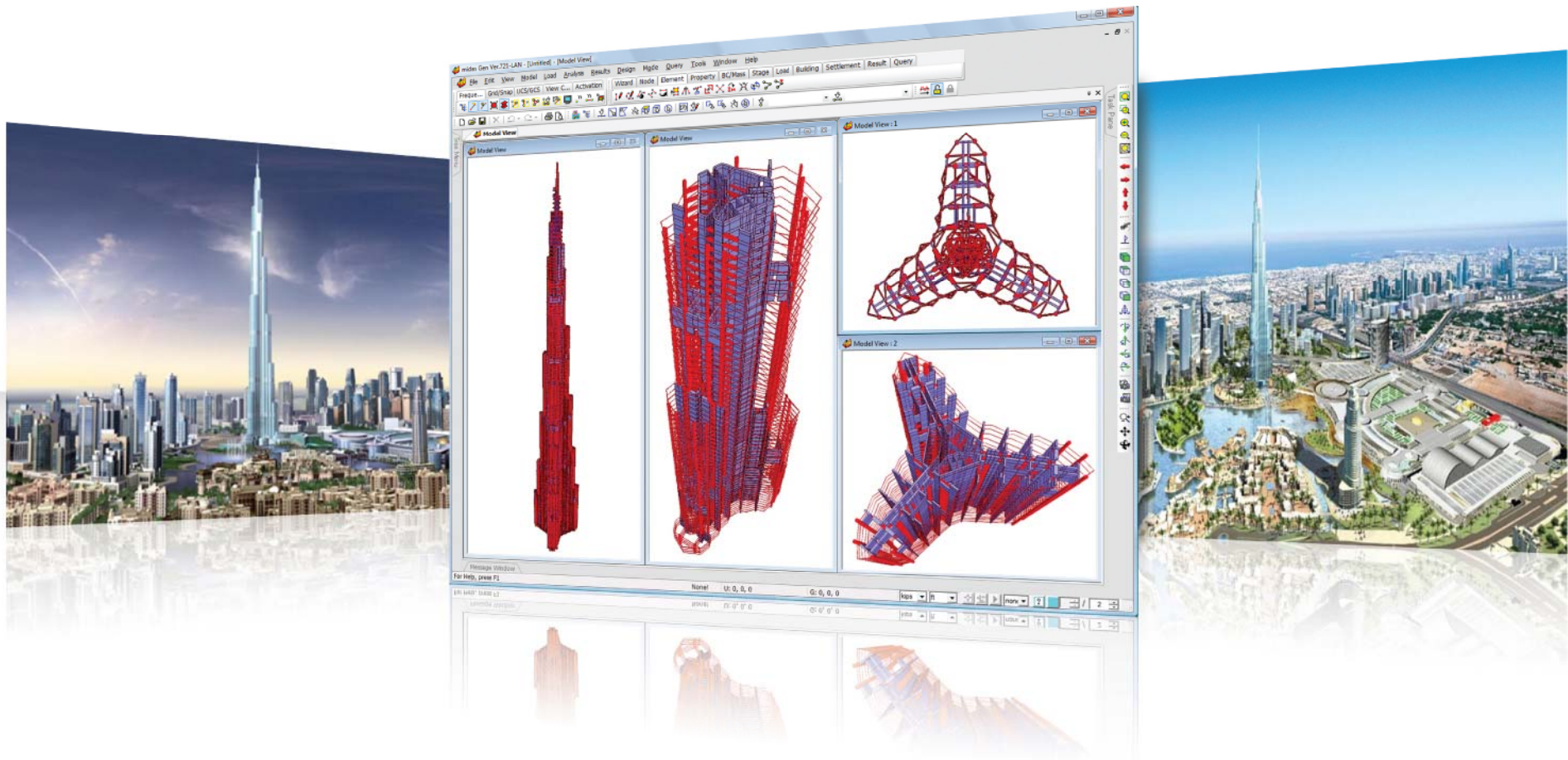


# Burj Dubai in UAE

Burj Dubai is the tallest building in the world and will be completed in 2009. The structural system consists of a "buttressed" core and perimeter columns, with a six-sided central core, or hexagonal hub. The result is a tower that is extremely stiff torsionally. The primary structural system is reinforced concrete. To account for the time-dependent concrete effects, a comprehensive construction sequence analysis incorporating the effects of creep and shrinkage was utilized to monitor and adjust for the time-dependent behavior of the structure.

## Overview

Height	705 m & yet higher
No. of floors	160
Location	Dubai, United Arab Emirates
Function / Usage	Office Building & Residential Building
Designer	Adrian D. Smith
Architect (Design)	Skidmore, Owings & Merrill
General contractor	Samsung Development



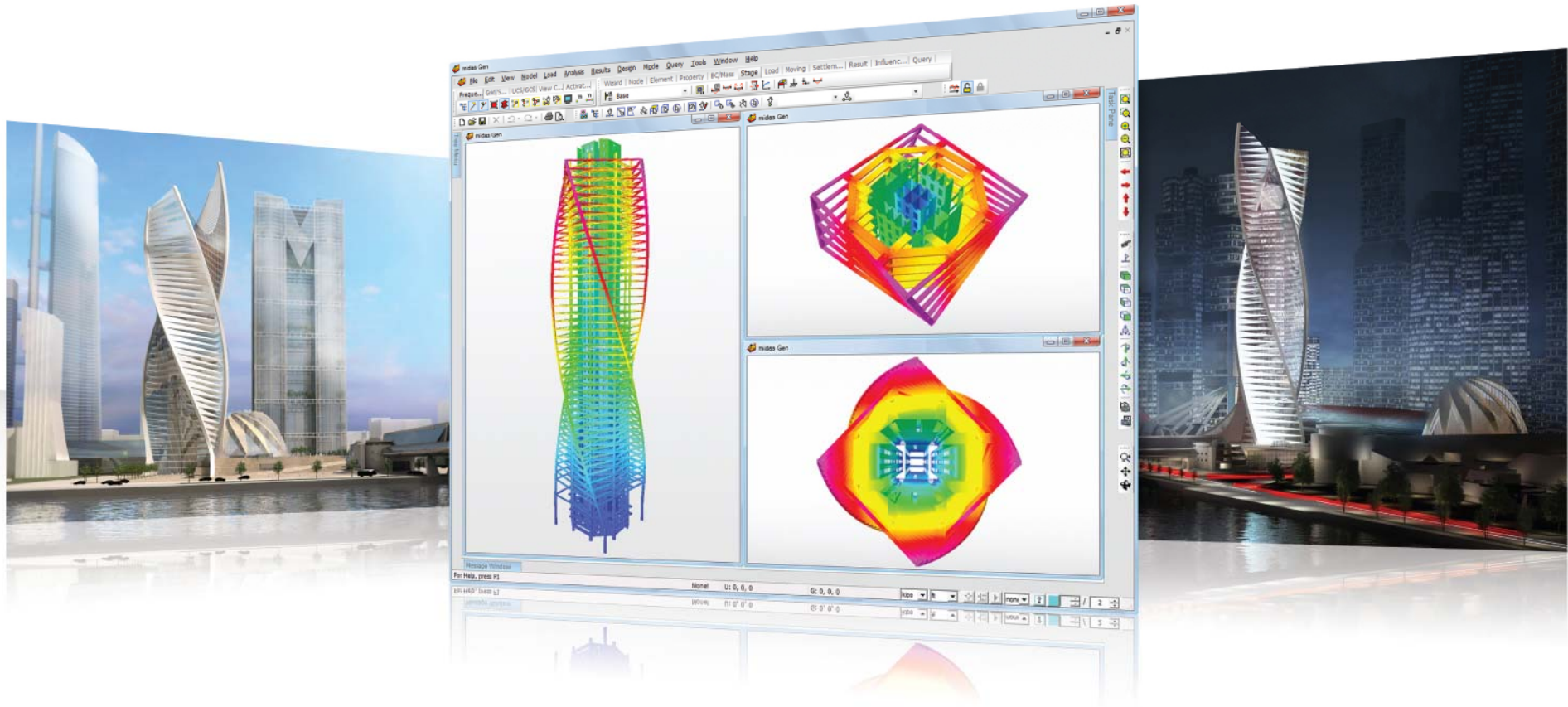


# Moscow City Palace Tower in Russia

The building, a twisting 46-storey tower that is due for completion in the summer 2011, will serve as a prominent entryway into the Moscow-City district occupying its southeastern plot, which connects to a completed pedestrian bridge. City Palace will contain about 1.8 million square feet of space, divided evenly between retail, administrative, and office functions, with a parking lot planned on three underground levels.

## Overview

Floor area	169,000 m <sup>2</sup>
Height	217 m
Floors	46 stories
Location	Moscow, Russia
Structure	Flat glass panes within the twisting concrete frame
Function / Usage	Retail / Office
Architect (Design)	RMJM

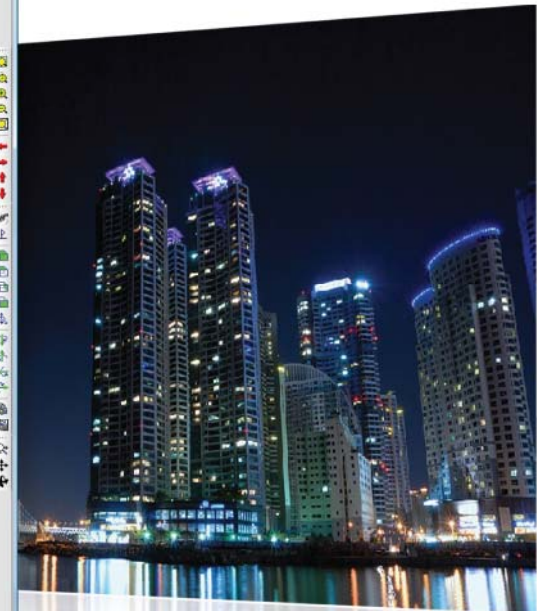
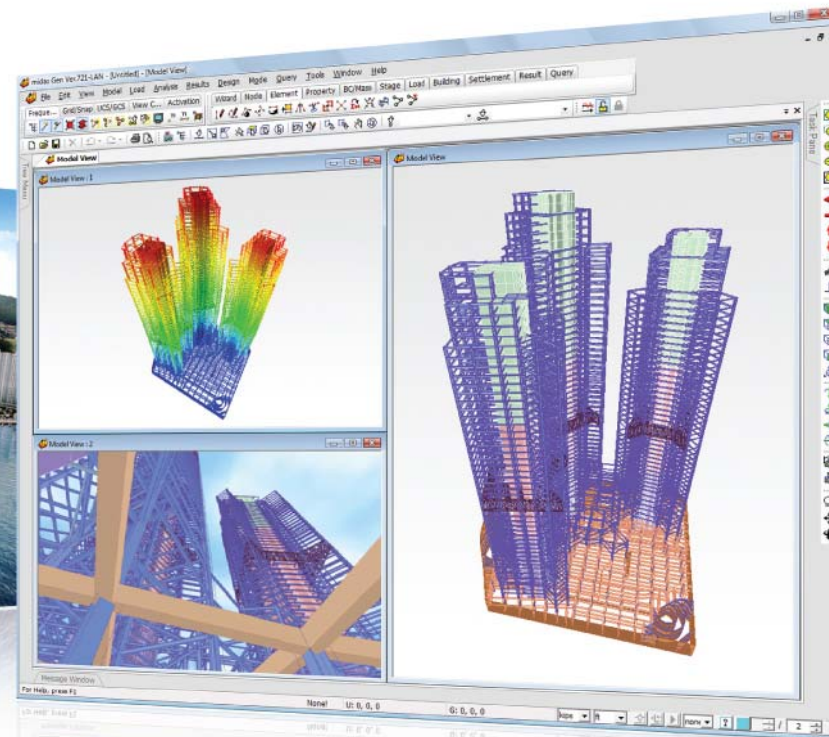


# The # Adelis in Korea

The # Haeundae Adelis comprises of three complete RC skyscrapers designed with new high strength concrete. Housing an indoor golf club, swimming pool, fitness center, and business facilities, it is also ideally located such that 90% of the residents have an ocean view of the Pacific.

## Overview

Floor area	13,069 m <sup>2</sup>
Building area	6,450 m <sup>2</sup>
Floor area	162,030 m <sup>2</sup>
Height	164.4 m
No. of floors	47
Location	Pusan, Korea
Function / Usage	Office Building & Residential Building
Structure	Reinforced Concrete Structure
Project cost	189.2 mil. USD
Duration	Apr. 2003 ~ Sep. 2006
Architect (Design)	ROSENWASSER-GROSSMAN, MIDAS IT
Contractor	POSCO E&C



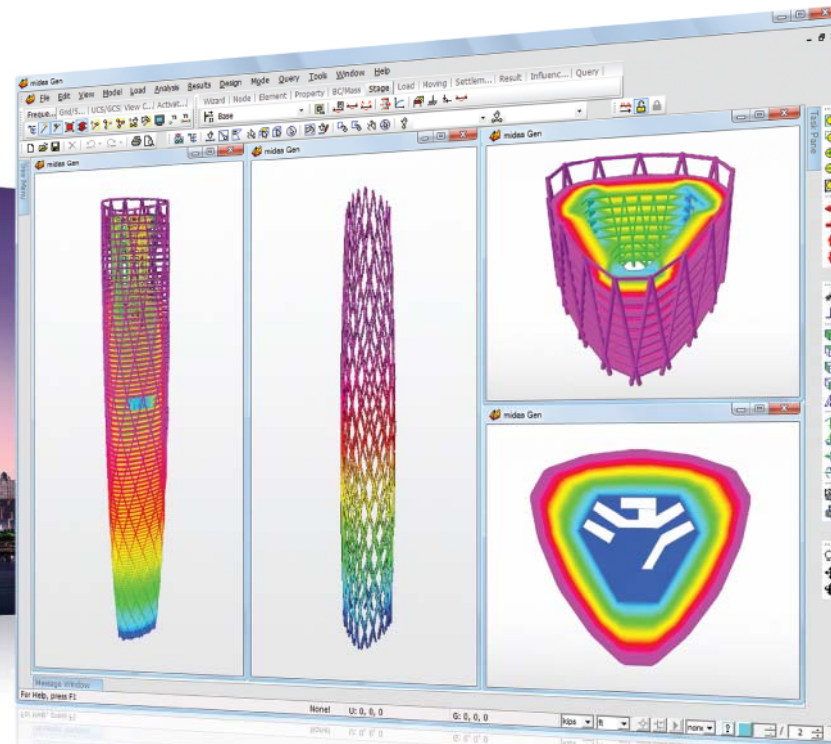


# Guangzhou Twin Tower in China

In most buildings the façade or its 'face' is the outward visual appearance or expression of a building. It forms the most significant manifestation of the building's 'architecture' to the outside world. However the façade must also perform a number of important roles for the actual occupants and owners of the building. Large high profile buildings and their facades increasingly must contribute positively towards more global issues such as long term sustainability and energy use.

## Overview

Height	432 m
No. of floors	107
Location	Guangzhou, China
Function / Usage	Office, Hotel, Restaurant and an Observation Deck
Architect (Design)	Wilkinson Eyre / Arup
General contractor	Guangzhou Municipal Construction Group Co., Ltd. China State Construction Engineering Corp.

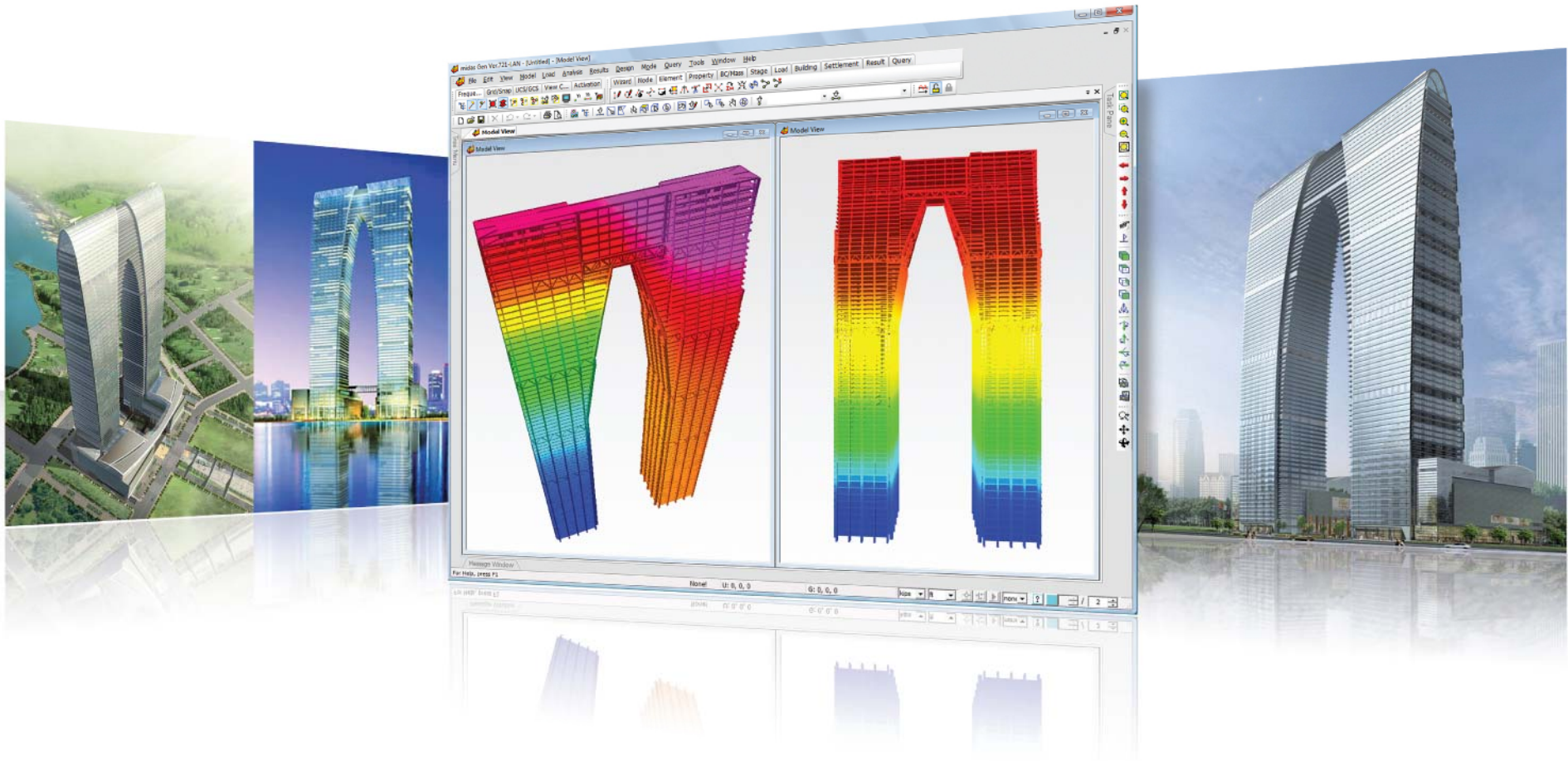


# Gate of the Orient in China

This 66-story building is composed of two main towers that unite to form an arch, symbolizing a gateway. The arch is an important symbol in Suzhou, where the 2,500-year-old Pan Gate also calls home. The Gate of the Orient is its modern equivalent. The simple geometry and vivid design are the perfect symbol of China, marking the country as the forefront of development in the Far East.

## Overview

Site area	24,000 m <sup>2</sup>
Building area	463,000 m <sup>2</sup>
Height	301 m
No. of floors	66
Function / Usage	Hotel, Office, Shopping and Residential Building
Duration	2004 - 2009
Architect (Design)	RMJM
Contractor	Shanghai Construction Group





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