Created to be Creative
Integrated Design System for Building and General Structures

MIDAS Information Technology Co., Ltd.
About midas Gen

Features

Comprehensive Design
• Concrete: ACI318, Eurocode 2, BS8110, IS456, IS13920, CSA-A23.3, GB50010, AU-WSO, TWN-WSO, AK-WSO, KSWS-USD & KIDD-USD
• SRC: SSRC, JGUT38, EC2028, AU-SRC, TWIN-SRC, AK-SRC, KS-SRC & KIDD-CFT
• Footing Design: ACI318, BS8110

Wind & Seismic loads auto-Generation
• Wind load: IBC, UBC, ANSI, Eurocode 1, BS8399, IS875, NBC, GB, Japan, Taiwan & Korea
• Seismic Load: IBC, UBC, ATC 3-02, Eurocode 8, IS1880, 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 (depth 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
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for building and general structures

Table of Contents

01. World Venues
- Beijing 2008 Olympic (China)
  - National Stadium
  - National Aquatics Center
  - Basketball Gymnasium
- Beijing University of Technology Gymnasium
- 2002 FIFA World Cup (Korea)
  - Seoul Stadium
  - Jeonju Stadium
  - Daegu Stadium
- Lingnan Mingzhui Stadium (Foshan, China)
- Juzhou Stadium (Mianyang, China)
- Yantai University Gymnastics (Yantai, China)

02. Airports
- Incheon Intl. Airport Transportation Center (Incheon, Korea)
- Terminal 3 at Beijing Capital Intl. Airport (Beijing, China)

03. Buildings for Arts
- Grand National Theatre of China (Beijing, China)
- Erdos Museum Mongolia (Erdos, China)
- National Maritime Museum (Lingshui, China)

04. Buildings for Office and Residence
- Burj Dubai (Dubai, UAE)
- Moscow City Palace Tower (Moscow, Russia)
- The A Adelis (Iluan, Korea)
- Guangzhou Twin Tower (Guangzhou, China)
- 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 tonnes. 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 m²
- Floor area: 250,000 m²
- Capacity: 91,000 seats
- Height: 68.2 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 host 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 structure of water in the state of aggregation of FOAM.
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.
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.
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.
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.

<table>
<thead>
<tr>
<th>Overview</th>
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<tbody>
<tr>
<td>Site area</td>
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<td>Building area</td>
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<td>Floor area</td>
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<td>Capacity</td>
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<td>Floors</td>
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<td>Structure</td>
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<tr>
<td>Type</td>
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<tr>
<td>Project cost</td>
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<tr>
<td>Duration</td>
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<tr>
<td>Architect (Design)</td>
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<tr>
<td>Contractor</td>
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<td>CM firms</td>
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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.

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<thead>
<tr>
<th>Overview</th>
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<tbody>
<tr>
<td>Site area</td>
<td>172,378 m²</td>
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<tr>
<td>Building area</td>
<td>34,851 m²</td>
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<td>Floor area</td>
<td>100,397 m²</td>
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<td>Capacity</td>
<td>65,856 seats</td>
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<tr>
<td>Floors</td>
<td>6 floors – 81 to 5</td>
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<tr>
<td>Structure</td>
<td>Steel frame and reinforced concrete structure</td>
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<tr>
<td></td>
<td>PC structure</td>
</tr>
<tr>
<td></td>
<td>Cantilever steel frame truss structure</td>
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<tr>
<td>Type</td>
<td>Soccer stadium</td>
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<tr>
<td>Project cost</td>
<td>94 mln. USD</td>
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<tr>
<td>Duration</td>
<td>1998.12.17~2001.3.30</td>
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<tr>
<td>Architect (Design)</td>
<td>YOOGSHIN Architects &amp; Engineers</td>
</tr>
<tr>
<td>Contractor</td>
<td>Hyundai Development and 92 other firms</td>
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<tr>
<td>CM firms</td>
<td>YOOGSHIN Architects &amp; Engineers and 2 other firms</td>
</tr>
</tbody>
</table>
Foshan Lingnan Mingzhu Stadium in China

2008 International Architecture Awards for the Best New Global Design

The dome structure of the main stadium was designed to be a 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 m² |
| Building area | 161,877 m² |
| 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.

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<tr>
<td>Architect (Design)</td>
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</table>
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.
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.
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.
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.
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.*

Burj Khalifa in UAE

Burj Khalifa 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.
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.
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.
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.
Gate of the Orient in China

This 86-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 prefect symbol of China, marking the country as the forefront of development in the Far East.

Overview

- Site area: 24,000 m²
- Building area: 460,000 m²
- Height: 301 m
- No. of floors: 69
- Function / Usage: Hotel, Office, Shopping and Residential Building
- Duration: 2004 – 2008
- Architect (Design): RMJM
- Contractor: Shanghai Construction Group
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