



NorthGlass Online



NorthGlass "WeChat"

**NorthGlass (Tianjin)**

No.20,Baozhong Lane, Energy-saving environmental Industrial Zone, Baodi District, Tianjin, China

Tel: +86-22-59280088 Fax: +86-22-59280066

E-mail: [tngsales@northglass.com](mailto:tngsales@northglass.com)

Official Website: [www.northglass.com](http://www.northglass.com)

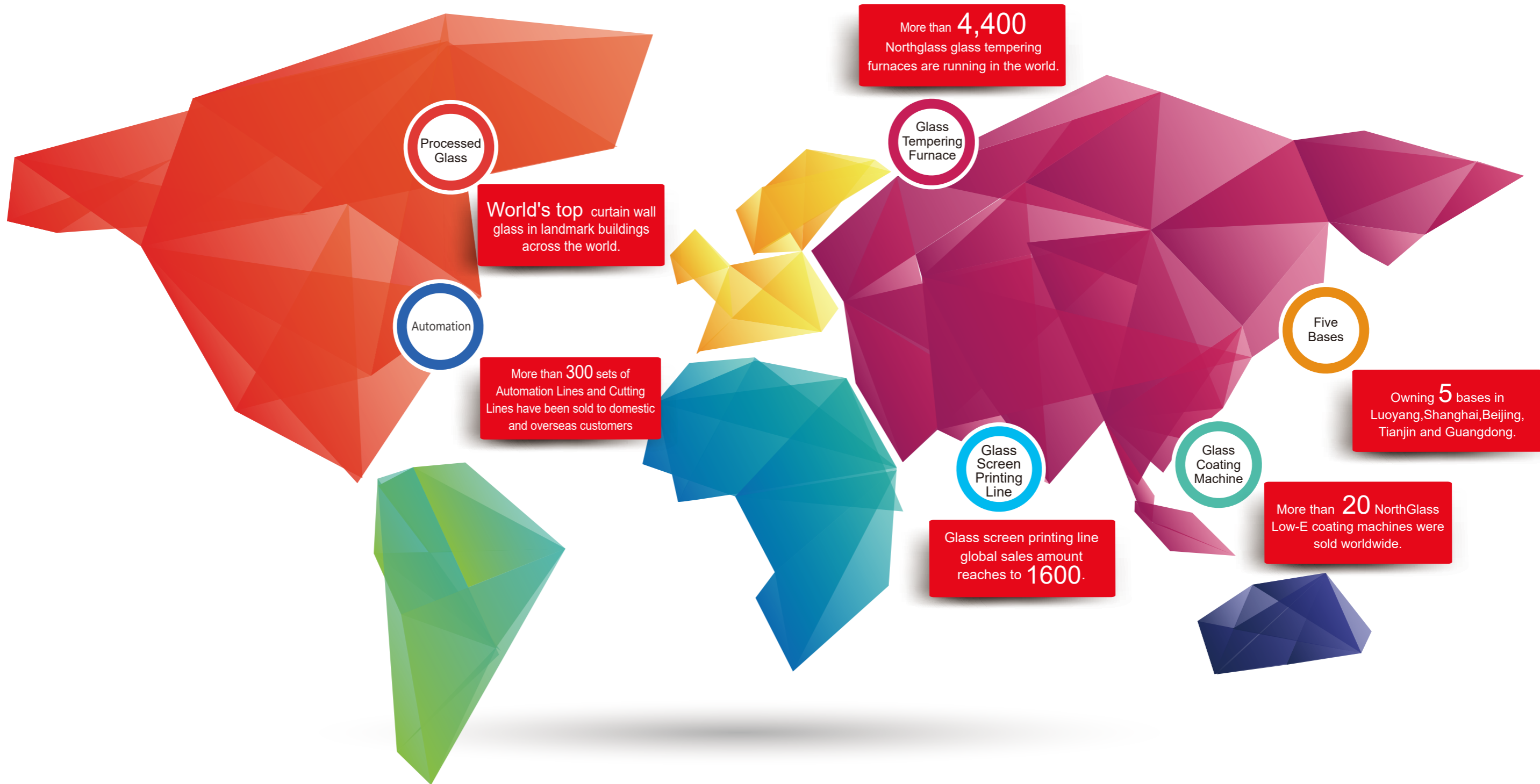
Glass BU Website: [glass.northglass.global](http://glass.northglass.global)

Multilingual Website: [www.north-glass.com](http://www.north-glass.com)

Stock Code: 002613

2018.08 Printed 4<sup>th</sup> Edition

**Processed Glass**



### NorthGlass Company Profile

Luoyang North Glass Technology Co., Ltd., simply called as "North-Glass", was established by Mr. Gao Xueming, Chairman of the board, in Luoyang National High & New Technology Development Zone on 18th, May, 1995. In 2011, North-Glass created a precedent in glass deep processing machine industry, going public at Shenzhen Stock Exchange (stock code: 002613). Today, NorthGlass has developed into a high-tech industry group integrating in R&D, manufacturing, sales and service with continuous innovation capability, composed by 5 bases respectively in Luoyang, Shanghai, Tianjin, Beijing and Guangdong.

Adhering to the enterprise spirit of "Innovating forever, Striving for success", NorthGlass independently developed her main products of glass tempering furnace, coating line and upscale processed glass as the core competitiveness. Furthermore, NorthGlass has also expanded her product series with general fans and HVLS industrial fans, glass processing automation system, glass storage system, glass cutting machine, cutting-breaking-grinding-drilling automation line, screen printing machine, automotive glass pre-processing line, etc., up to now more than 300 product models in total.

NorthGlass is one of the strongest and leading manufacturers and technology R&D enterprises in the field of glass deep-processing machinery industry. The annual sales of major product, flat/bent glass tempering furnace, is ranking stable forefront of the worldwide industry within last 17 years since 2002 when the sale amount of furnaces exceeded 100 sets. Accumulatively more than 4400 NorthGlass glass tempering furnaces are running around the world. The coating line developed and produced by NorthGlass is becoming one of the global leading suppliers in glass coating industry and led to a rapid development of coated glass business in China.

Another mainstay product for North-Glass is upscale deep-processed glass, which has been widely applied in a lot of famous architectural projects all over the world, for example "Sun Valley" & "Shiliupu Pier" of EXPO 2010 Shanghai, "Bird Nest" & "Water Cube" of Olympic Games 2008 Beijing, China National Center for the performance arts, New Beijing South Railway Station, Beijing Capital International Airport (Phase III), Shanghai Tower, Abu Dhabi International Airport, Singapore Changi Airport, Vietnam APEC Exhibition Center, main venue of Xiamen BRICS summit, main venue of SCO summit, Deqing forum place of UN Global Geographic Information Management, LA Oceanwide Plaza, US Oracle Headquarters, Leadenhall Building in London, etc.

Meanwhile, NorthGlass is also one of two qualified architectural glass suppliers for the most famous electronics company in the world, for its dozens of retail stores in the world as well as new Headquarters Building in Silicon Valley of USA.

NorthGlass's products have been sold in whole China, moreover exported to more than 100 countries and regions in the world, such as USA, UK, Germany, France, Switzerland, Russia, Japan, India, Brazil, Argentina, Saudi Arabia, Egypt, Turkey, etc., covering all continents of Asia, Europe, North America, South America, Africa, Oceania, etc., via NorthGlass's complete domestic and international

sales and service network.

NorthGlass has more than 20 sets of advanced production testing lines and labs, obtaining the certifications of ISO9001, 3C, CE, UL, etc., and has applied and owned more than 100 patents. NorthGlass is awarded as "the Top Hundred Enterprises of Henan", "the Meritorious Enterprise of Henan" and "the Meritorious Enterprise of Luoyang". In July 2017, "NorthGlass" was recognized as one of China Famous Trademarks in China. The Chairman of NorthGlass Board, Mr. Gao Xueming, was also awarded as "the Representatives of the 30 years of reform and opening up of the national building materials industry".

# NorthGlass History

In 1994, NorthGlass produced the first Made-in-China "Horizontal Roller Hearth Flat/Bent Glass Tempering Furnace".

In 1999, a wholly owned subsidiary "Beijing North Glass Safety Glass Co., Ltd." was established.

In 2005, a holding subsidiary "Shanghai North Glass Technology Industrial Co., Ltd." was established.

In 2008, a wholly-owned subsidiary "Shanghai North Glass Coating Technology Industrial Co., Ltd." was established, by which North Glass took on the mission of filling the blank of domestic commercial coating lines.

In 2009, the most famous electronics company in the world decided to build their Asian flagship retail store in Shanghai, and therefore started the cooperation with NorthGlass of supplying high quality architectural glass for totally 77 stores up to now.

In 2011, NorthGlass went public at Shenzhen Stock Exchange, simply called as "NorthGlass Corp." with stock code 002613.

In 2012, a holding subsidiary "Tianjin North Glass Industrial Technical Co., Ltd." was established with a total investment of 500 million RMB, which rapidly becomes one of the worldwide high quality architectural glass suppliers.

In 2015, NorthGlass merged Shenzhen Juisun and Dongguan Byronic to a new holding joint venture subsidiary "Guangdong North Glass Juisun Glass Technology Industrial Co., Ltd.", which expands NorthGlass product scope into the fields of glass screen printing machine and cutting-breaking-grinding-drilling automation line.

In 2015, NorthGlass celebrated the 20th Anniversary and changed the new LOGO.

In 2016, NorthGlass launched the industrial fund "NorthGlass Fund" together with Lianxun Capital, established a new company "Beijing North Glass SiNest Technology Co., Ltd.", and took the first step into the field of environmentally-friendly building materials for prefabricated house.

In 2017, a holding subsidiary "Guangdong North Glass Electronic Glass Co., Ltd." was established, which expands NorthGlass product scope into the field of electronics glass industry.

In 2018, a holding subsidiary "Beijing North Glass Curtain Wall Technology Co., Ltd." was established, which focus on the R&D, sales and service of high quality architectural glass.

In 1995, "Luoyang North Glass Technology Co., Ltd." was established.

In 2004, NorthGlass developed the new generation glass tempering furnace with "Super Flat & Spotless" technology, which changed the old knowledge that tempered glass must have inherent defects of recognizable iridescence and distortion and brought a new quality concept to worldwide tempered glass industry.

In 2007, a holding subsidiary "Luoyang NorthGlass Taixin Fan Technology Ltd." was established, which expands NorthGlass product scope into fan industry.

In 2008, the first Low-E glass coating line independently developed by Shanghai North Glass Coating Technology Co., Ltd. was put into commercial production, which filled the blank of Chinese Low-E coating lines with commercial production.

In 2010, NorthGlass successfully developed the first super-large bent glass tempering furnace, which can produce the bent tempered glass with size up to 18 meters height and 3.6 meters bent edge. This furnace pushes the world's glass tempering technology to a new high level.

In 2014, as NorthGlass subsidiary, Tianjin NorthGlass Industrial Technical Co., Ltd. signed the contract with the most famous electronics company in the world, to provide the special architecture structural glass to their new headquarters office building.

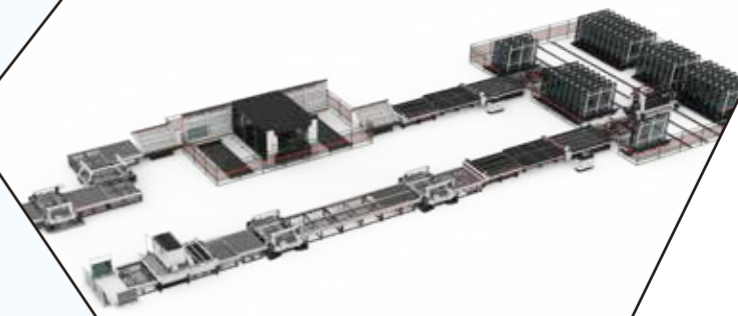
In 2015, a holding subsidiary "Shanghai North Glass Automation Technology Co., Ltd." was established, which opens a new chapter of Industry 4.0 in glass deep processing industry in China.

In 2016, Luoyang NorthGlass Fan Corporation firstly adopted the advanced Tri-Variate Movement Theory into the design of centrifugal fan, successfully completed the task of providing the transformer cooling fan to China's latest Renaissance EMU high speed trains with own national standard.

In 2017, NorthGlass successfully developed the bent glass tempering furnace to produce super-large size cylindrical tempered glass with arc length up to 8m and height up to 4m, as well as the full convection flat tempering furnace to produce flat tempered glass with glass length up to 20m, which provide broader design space to the architects.

In 2018, a holding subsidiary "Zhuhai North Glass Electronic Glass Co., Ltd." was established, which focus on the R&D and production of large-size touch screen panel glass.

◀ Processed Glass

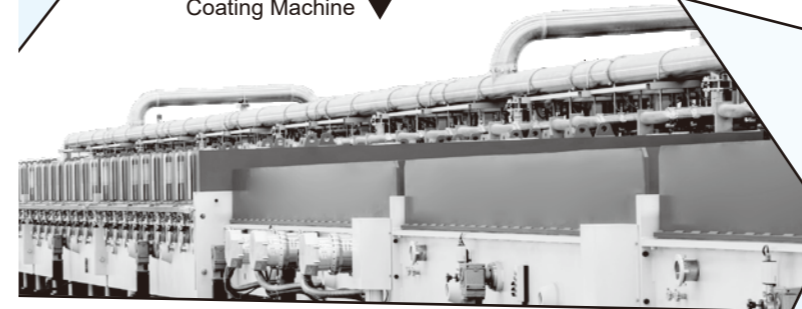


Glass Automation System ▲

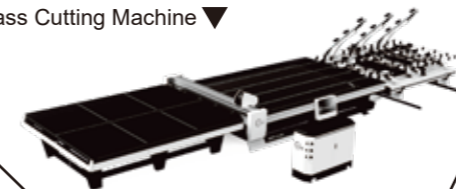
Glass Tempering Furnace ▼



Coating Machine ▼



Glass Cutting Machine ▼



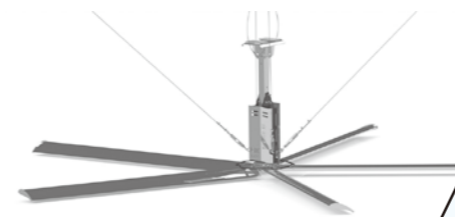
Glass Storage System ▼



▼ Cutting-Breaking-Grinding-Drilling Automation Line



HVLS Fan ▼



General Fan ▼



▲ Glass Screen Printing Line



# Five Bases

## Luoyang NorthGlass

Full name of "Luoyang North Glass Technology Co., Ltd.", the headquarters and parent company of NorthGlass

## Tempering Furnace Business Unit

with main products of flat and bent glass tempering furnaces. Cumulatively over 4400 furnaces have been sold to more than 100 countries and regions all over the world since 1995. In 2010, a flat/bent tempering furnace was developed to produce super-oversized tempered glass with the size of 3.6 x 18 m for the headquarters of the most famous electronics company in the world. All furnaces are classified into three series to meet different customer needs: Top series, Advanced series and Basic series.

## Luoyang Glass Business Unit

Main products include Low-E coated glass, "Super Flat & Spotless" tempered glass, curved tempered glass with super-long arc length, SGP laminated glass, screen printed glass, etc. It has the most complete kit factory in Middle West regions with the strongest processing capability of high quality architectural glass. Supplying oversized curtain wall glass for well-known landmark buildings, such as Xi'an Twin Towers, China Railway Center-of Xi'an, etc..

## Luoyang North Glass Fan Technology Co., Ltd.

Main products include general fan, high-speed train cooling fan, convection hot fan, motor sweeper fan, HVLS fan, etc.. Tri-Variate Movement centrifugal fan was designed to be in line with Chinese national standard as transformer cooling fan for high-speed train.



**Shanghai NorthGlass**, full name of "Shanghai North Glass Technology Industrial Co., Ltd." **Shanghai North Glass Coating Technology Industrial Co., Ltd.**, is a specialized vacuum coating equipment manufacturer with rich experience in large surface vacuum coating technology, focus on the R&D, manufacture and service of large surface vacuum coating lines, special coating equipment for automotive glass and display panel, sputtering cathode and its core components (end block, magnet bar). **Shanghai Coated Glass Business Unit**, is a company mainly engaged in the production of oversized coated glass.

**Shanghai North Glass Automation Technology Co., Ltd.**, engaged in R&D and manufacture of glass storage, cutting, grinding, cleaning and complete automation solutions for glass processing factory. **Shanghai Glass Business Unit**, with NorthGlass' s strong support of R&D and equipment manufacturing capabilities, using NorthGlass' s new generation tempering furnaces to produce different types of special glass, such as irregular shape glass, dual curvature glass, convex curved glass, ultra-wide glass, super thick glass, etc. Its main projects includes Shanghai Tower skirt building, Shanghai Disney Tomorrowland, etc.. **Shanghai Equipment Manufacturing Business Unit**, is a comprehensive manufacturing center equipped with various types of manufacturing machines for multiple processes of riveting, welding and machining.



**Tianjin NorthGlass**, full name " Tianjin North Glass Industrial Technical Co., Ltd." With a total investment RMB 500 million and production plant area 100' 000 sqm, Tianjin NorthGlass is a new glass deep-processing enterprise owning advanced technologies and professional R&D team, who is becoming one of the world' s specialist suppliers of super oversized tempered, laminated, insulated, digital printed glass with top level quality. Their representative projects include the headquarters and dozens of stores of the most famous electronics company in the world, National Bank of Kuwait, etc.. Tianjin NorthGlass' s all production equipments, such as Low-E coating line, flat/bent glass tempering furnaces, CNC work center, laminating line, insulating line, etc., are able to produce super-oversized curtain wall glass and structural glass with the length of 18m.

**Beijing NorthGlass**, full name " Beijing North Glass Curtain Wall Technology Co., Ltd. " formerly called as " Beijing North Glass Safety Glass Co., Ltd.", is currently a company dedicated in marketing, customer service and technology development and research.



## Guangdong NorthGlass

**Guangdong NorthGlass and Juisun Technolgy Industry Co., Ltd.** with main products of glass screen printing line and automatic production line integrated with functions of cutting, breaking, grinding and drilling. Bringing together the superior resources of NorthGlass and Juisun, Guangdong North Glass is committed to building the first-class Chinese pre-processing equipment for automotive and industrial glass industries.

**Guangdong North Glass Electronic Glass Co., Ltd.** Main products include panel glass for tablet PC, laptop, automotive display, smart furniture, etc. These products have been applied in electronic products of HP, Lenovo, Huawei, Samsung, etc..

**Zhuhai North Glass Electronic Glass Co., Ltd.** a subsidiary wholly-owned by Guangdong North Glass Electronic Glass Co., Ltd., with main products of touch screen glass for educational services, interactive whiteboard, multimedia blackboard, LCD advertising player, etc.. Currently these products have been applied in electronic products of Seewo, HiteVision, Hisense, Smart, Promethean, etc..

# Toughened Glass

With dimensions of 3.6m x 18.0m and “Roller Waves” of less than 0.08mm, NorthGlass Toughened Glass is the largest and highest quality heat treated glass available in the world. By making use of our parent company’s unique tempering machines, anisotropies are maintained at an absolute minimum, resulting in unparalleled levels of clarity. Northglass is a glass supplier who is committed to maintaining exceptionally high standards of quality.

The strength and safety characteristics of Fully Toughened Glass are guaranteed by processing temperatures greater than 600°C and a subsequent rapid cooling cycle.

NorthGlass Toughened Glass offers highest resistance to bending, impact loads, live loads and thermal shock. Fully toughened glass with its unique breakage pattern also ensures that the glass meets industry relevant safety characteristics.

NorthGlass Heat soak provides a decreased risk of spontaneous breakage as it is heat-soak tested for nickel-sulfide inclusions in accordance with appropriate standards.

**FT:** fully toughened  
**HS:** heat strengthened  
**FTH:** fully toughened and heat soak tested

Maximum Size:  
Flat Tempered 3600mm x 18000mm  
Curved Tempered 3600mm x 18000mm

The representative cases of NorthGlass:  
National Center of Performing Arts  
Leadenhall Building  
One Blackfriars Road in London

# Laminated Glass

Laminated Glass consists of multiple layers of glass laminated together with highly tear resistant interlayers. The choice of interlayer depends on the application. Stiff interlayers are generally preferred for structural glass applications while softer interlayers demonstrate advantages for noise reduction or in the event of bomb blast.

NorthGlass Laminated Glass can be laminated using float glass, heat strengthened or fully toughened glass. With a maximum dimension of 3.6m x 18.0m or 4.0m x 8.0m, NorthGlass provides the largest laminated glass units in the world.

Maximum Size: 3600mm x 18000mm  
Minimum Size: 300mm x 300mm

The representative cases of NorthGlass:  
Abu Dhabi International Airport  
Beijing Phoenix Center  
Manchester City Hall  
Bloomberg Building



# Curved Glass

Curved Glass is an essential element of modern, free form architecture. To meet the current market requirements NorthGlass Curved Glass is produced by using three different production processes. This enables NorthGlass to produce curved glass of the highest quality and best safety characteristics for each individual project.

Depending on the glass build up, coatings and bending geometry, dimensions of 3.6m x 18.0m are achievable.

- FT or HS** : cylindrical curved, heat strengthened glass.
- AN** : annealed, gravity bent glass.
- CB** : cold bend glass which is bent during the lamination process.

Maximum Size: 3600mm x 18000mm (convex)  
 8000mm x 4000mm (convex)  
 2440mm x 5000mm (concave)  
 3600mm x 3200mm (concave)

Minimum Size: 600mm x 400mm  
 Minimum radius of curvature: 600mm  
 Thickness: 4mm-19mm

The representative cases of NorthGlass:  
 EXPO Shiliupu Pier, Guangzhou Opera House  
 National Aquatics Center-Water Cube  
 Shanghai Culture Center, Beijing Junhao Center Square



# Insulating Glass

To protect the environment and to comply with national building regulations, Insulating Glass Units are a necessity of modern glass architecture. NorthGlass Insulating Glass Units, can be provided as double glazed or triple glazed. In combination with our High-Performance Coatings and Argon gas filling, U-Values of 0,50 W/m²K are achievable.

With our new production line for the assembly of Insulating Glass Units, NorthGlass can produce flat or curved, double or triple glazed units with a maximum dimension of up to 3.6m x 18.0m. Due to our unique assembly process, stepped glass edges can be established along all sides. Together with our strong focus on quality, NorthGlass is the leading supplier for oversized insulating glass units in the world.

Maximum Size: 3600mm x 18000mm  
 Minimum Size: 300mm x 300mm

The representative cases of NorthGlass:  
 Headquarters of the world's most famous consumer electronics company  
 Hong Kong Causeway Bay retail store of the world's most famous consumer electronics company



Wind Tunnel Cabin of "Quantum of the Seas" - Royal Caribbean International Cruise



Shanghai Suhe Bay Bulgari Hotel

# Printed Glass

Digital Printed Glass provides designers with additional architectural freedom. The variety of colours and patterns is infinite. The ceramic ink is then fired into the glass surface during the heat treatment. From there on the glass can be coated, curved, laminated or assembled into insulating glass units. The maximum dimensions are 3.3m x 18.0m.

Maximum Size: 3300mm x 18000mm  
Minimum Size: 300mm x 300mm  
Thickness: 3mm-19mm

The representative cases of NorthGlass:  
National Stadium-Brid's Nest  
National Aquatics Center-Water Cube  
Abu Dhabi International Airport  
Shanghai Tower



# Coated Glass

High performance coatings can not only improve the energy performance of the glass facade but provide a unique appearance to the building. With our in house coating line NorthGlass is able to provide clients with custom made coatings. With a total length of 260 m, NorthGlass operates the largest coating machine in the world and can make glass units with dimensions up to 3.3m x 18.0m.

Maximum Size: 3300mm x 18000mm  
Minimum Size: 300mm x 300mm

The representative cases of NorthGlass:  
Shanghai Natural History Museum  
Xi'an Greenland Center Twin-Tower  
SLAN Center Business Landmark  
National Bank of Kuwait  
Canadian-Manulife Building  
Shanghai Tower  
6 Shenton Way



National Stadium-Brid's Nest



National Bank of Kuwait



# The Representative Cases of NorthGlass



National Aquatics Center-Water Cube



Beijing APEC Conference Centre



Bloomberg Building



National Grand Theater

# The Representative Cases of NorthGlass



Hongkong Takio - phase 2A



US Austin Oracle Headquarters



The St.Regis Macao, Cotai Central



Guangzhou Central Tower

# The Representative Cases of NorthGlass



Shanghai Disney Resort-Tomorrow Land



Shanghai Tower



World Expo Museum



Canadian Manulife Building



Beijing South Railway Station



Hangzhou G20 Stadium

# The Representative Cases of NorthGlass



Van Gogh Museum in Amsterdam



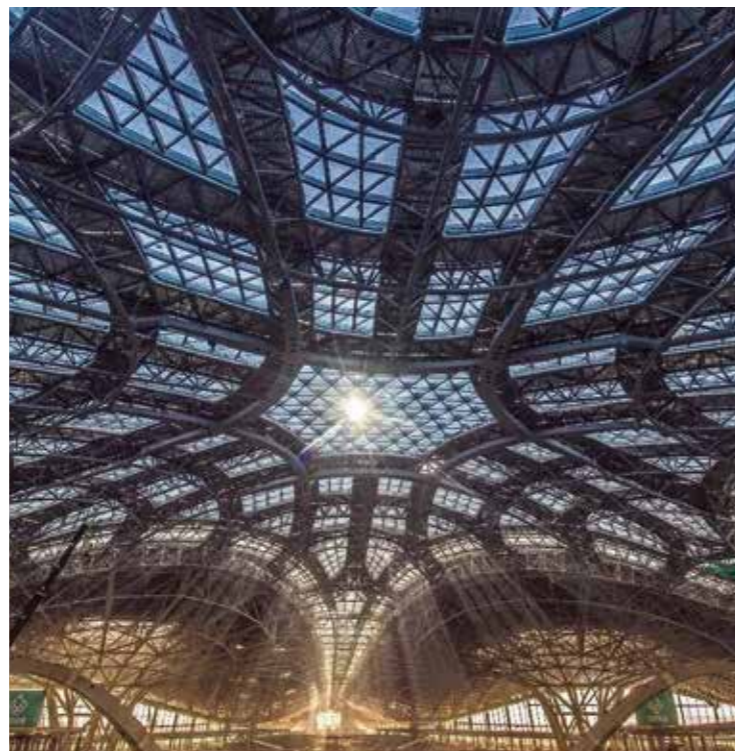
Sichuan Airlines Center



Shanghai Suhe Bay Bulgari Hotel



Phoenix TV Media Center



Beijing New Airport (Under Construction)



London Three Quays

# The Representative Cases of NorthGlass



Xiamen International Conference Centre



Beijing Central Park Plaza



Beijing Baoli International Building



Korean Lotte Tower



Suzhou Centre Podium Building

NorthGlass Facilities  
for Architectural Glass

Processing plant area  
200,000 m<sup>2</sup>

Data \ Facility	Tempering furnace	Coating line	Insulated line	Laminated line	DIP-TECH digital print
Quantity	19	3	11	8	1
Max. size (mm)	3600 x 18000 8000 x 4000	3300 x 18000	3600 x 18000	3600 x 18000	3300 x 18000

Data \ Facility	CNC	Grinding machine	Screen printing line	Autoclave	Heat soak furnace
Quantity	3	11	5	10	7
Max. glass size (mm)	3300 x 18000	100 (thick)	3300 x 6000	3600 x 18000	3600 x 18000