

World Wide Diversity in...

# Fabric Architecture



**Big Span** Structures, LLC.

[www.bigspans.com](http://www.bigspans.com)



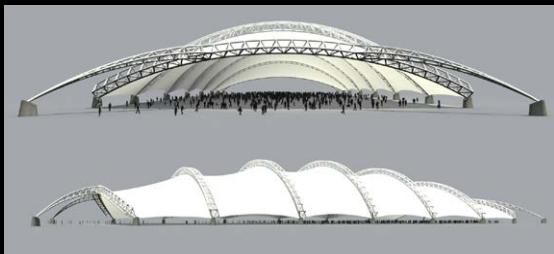
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# CURRENT PROJECTS



**Insurance Institute  
of Highway Safety**  
Ruckersville, VA  
300' w x 700' l x 120' h



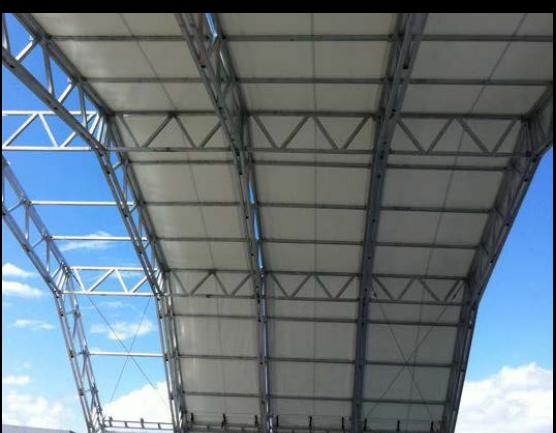
**Tata Steel & Mineral,  
Canada**  
DSO Timmins Project  
Labrador, CA  
350' w x 600' l x 160' h



**Indian River Charter  
High School**  
Vero Beach, FL  
60' w x 113' l x 35' h



**Port Everglades Terminal**  
Port Everglades, FL  
90'w x 40'l x 30'h



**LaCarpa**  
Cayey, Puerto Rico  
400' w x 1000' l x 75' h



# TENSILE STRUCTURES

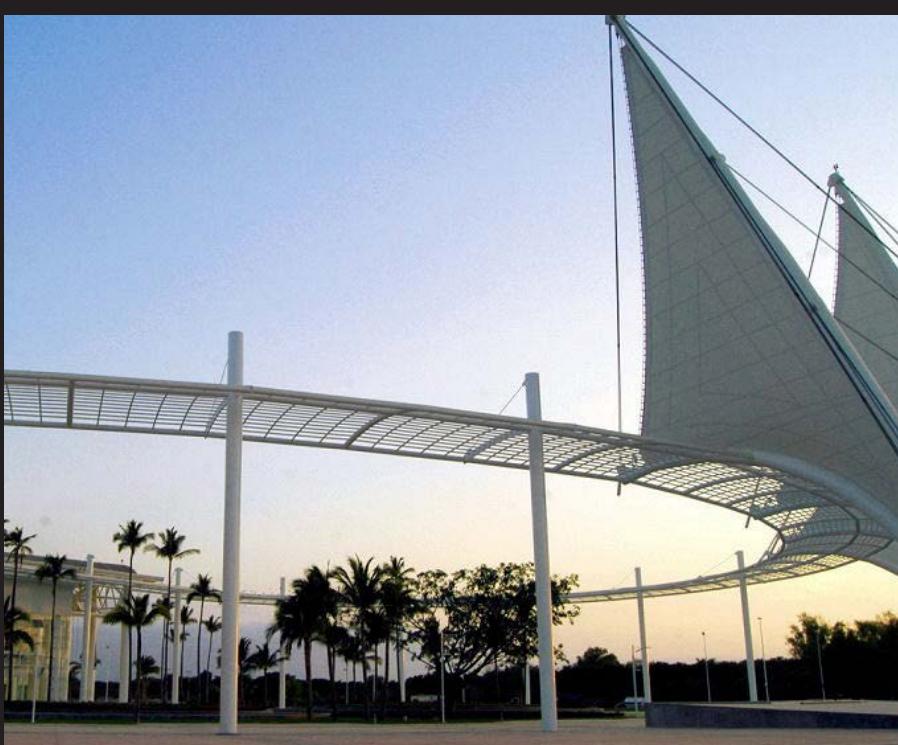
## World Largest Fabric Structures

DESIGN – ENGINEERING – MANUFACTURING



The basic types of tension structures are cable domes, mast supported, arch supported, radial tent and saddle roofs.

Tension structures can economically span large distances without internal obstructions and without the need for any mechanical systems. Architecturally, these structures are more visually pleasing since there are many different dynamic shapes that can be built.



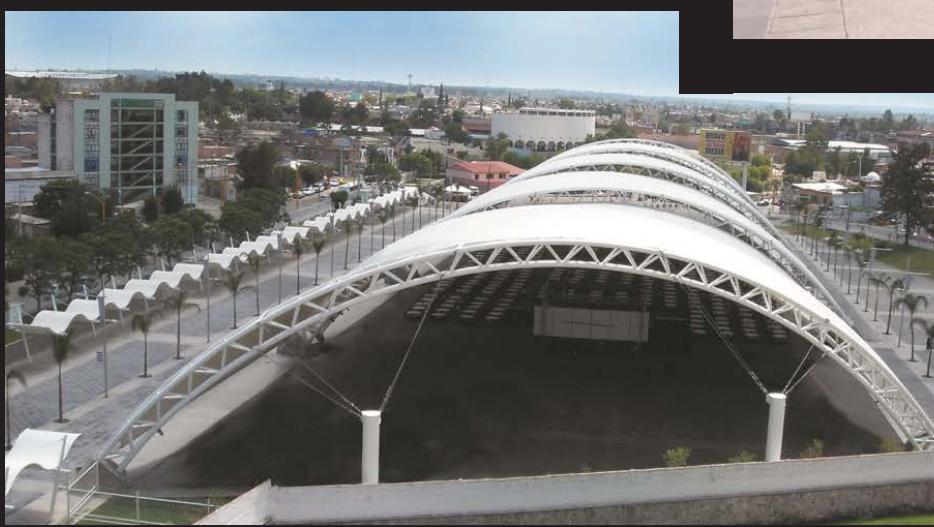
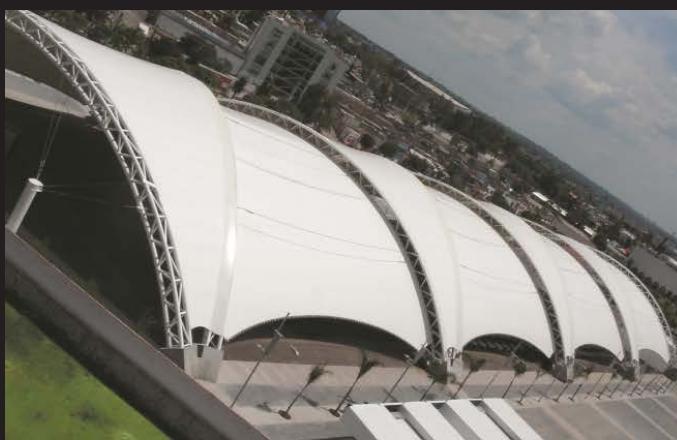
Convention Center (Puerto Vallarta, Mexico)



San Marcos (2007)

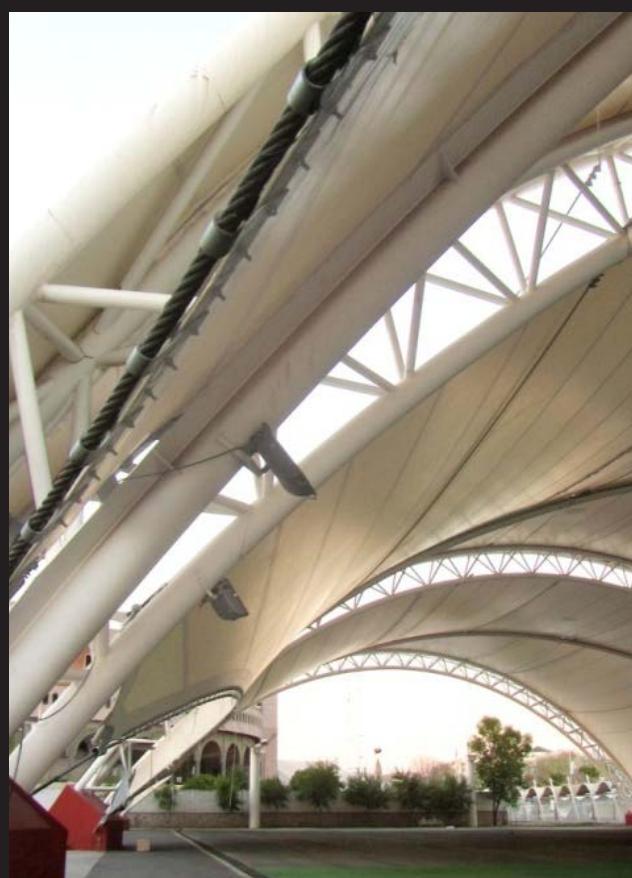
# Multi-Use

Fabric structures have been utilized for expansion of existing businesses, to accommodate large traveling pavilions for major marketing programs, for exposition centers to accommodate additional exhibitors or entire trade shows, as emergency replacement of damaged or destroyed facilities, and many other supplemental building uses.



**Big Span Structures can develop the right solution for your unique construction needs such as:**

- Large clear span climate-controlled sites.
- Traveling temporary and permanent pavilions.
- Expo centers.
- Temporary offices.
- Retail spaces.
- Auto dealership lot / inventory protection, showrooms.
- Airline terminals.





Zacatecas Design Concept

# STADIUM STRUCTURES

## World Largest Fabric Structures

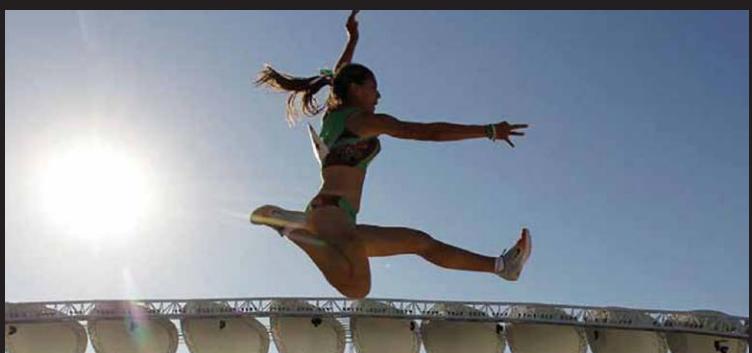
DESIGN – ENGINEERING – MANUFACTURING



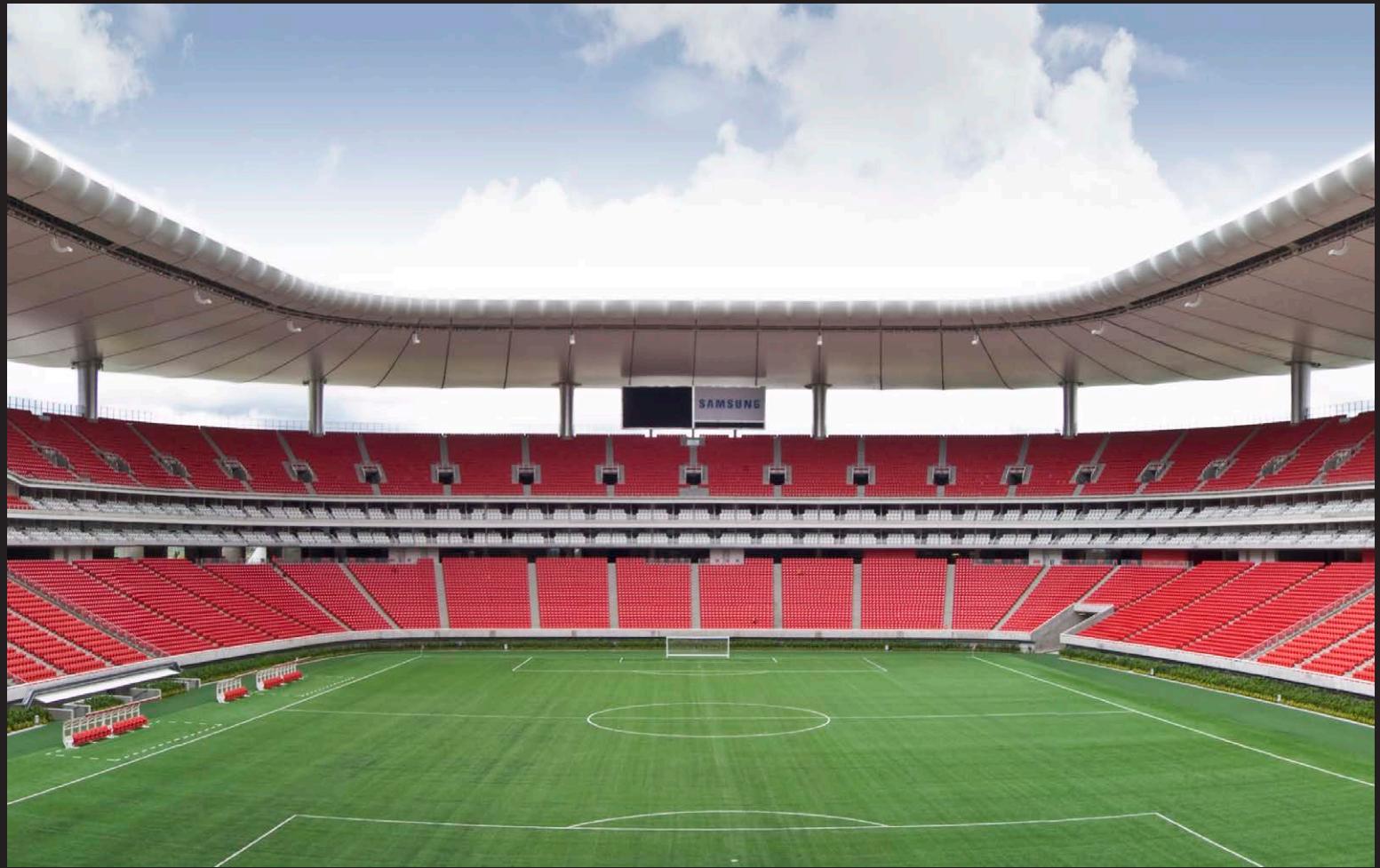
Fabric cladding on stadium structures remains a popular choice for sports arenas. Today's technology in fabric design allows for multiple variations in the product while keeping the structural integrity of the product. From day lighting a venue to lighting up the façade with multiple colors, Big Spans can design, engineer, & fabricate a state of the art venue to stand the test of time.



Victoria Aguascalientes (Mexico, 2006)



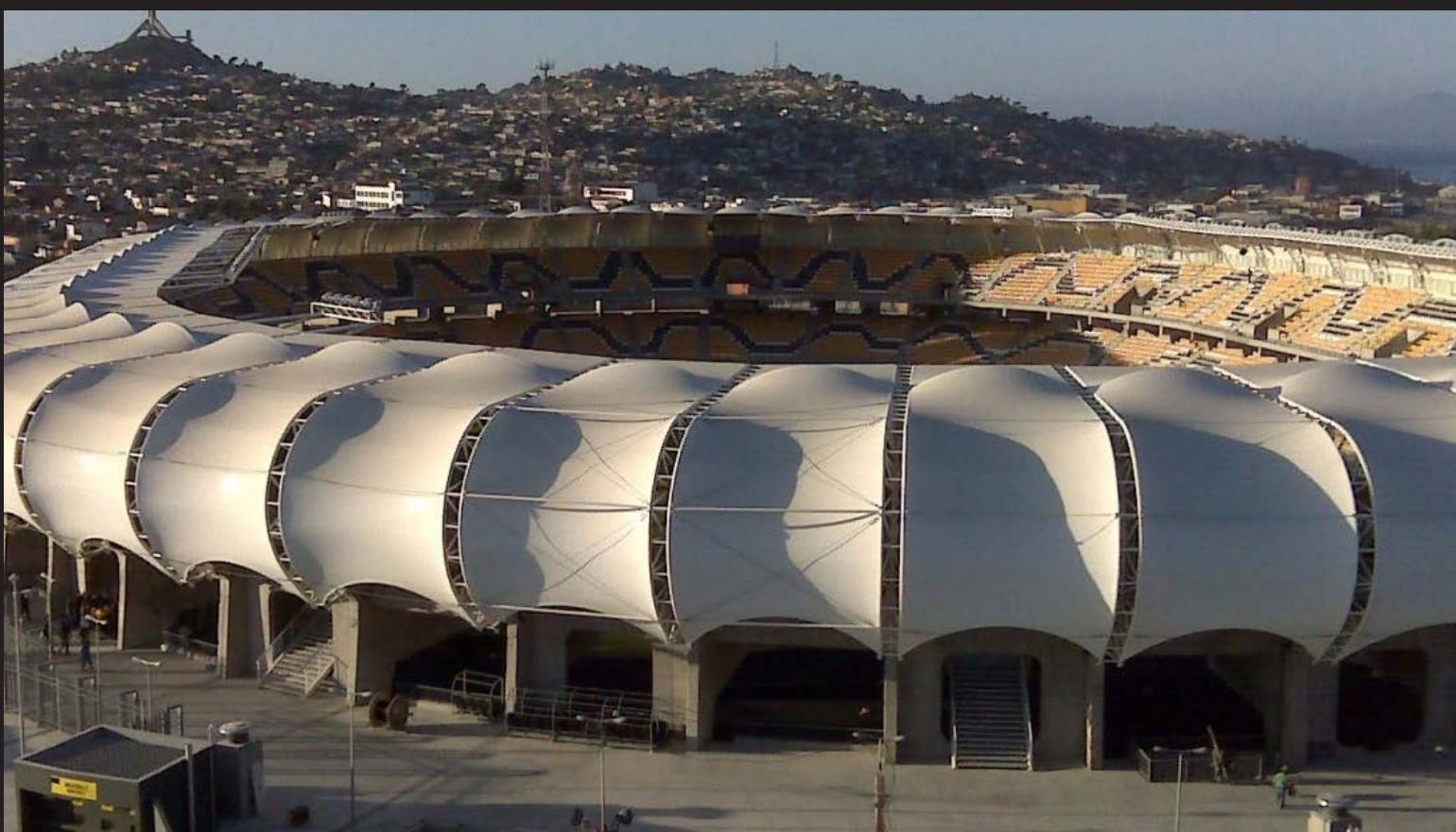
Corona Stadium Santas Torreon Max



Chivas Stadium (Guadalajara, 2003)



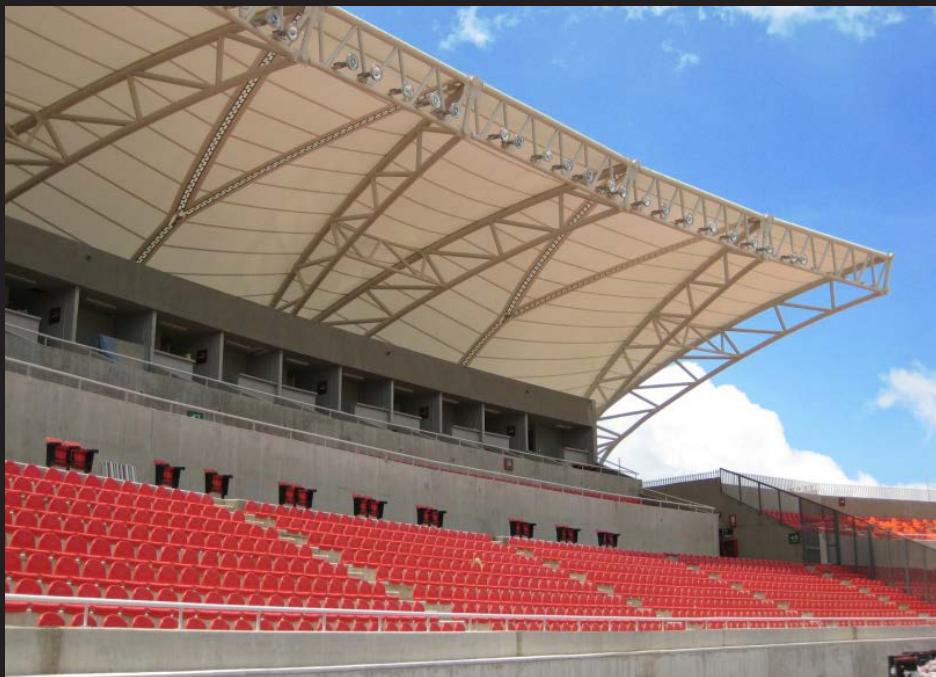
Victoria Stadium (Mexico, 2003)



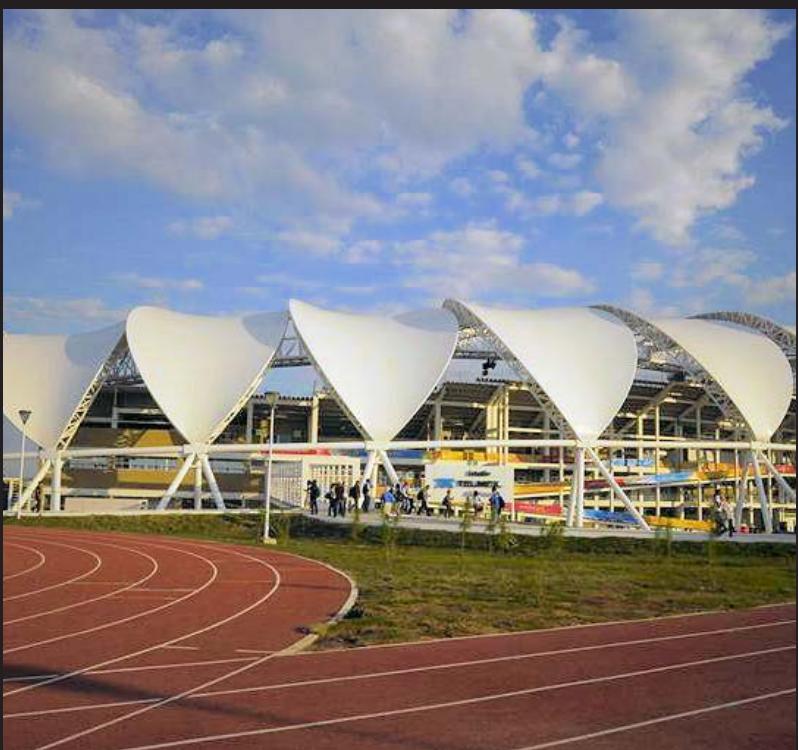
Francisco Sanchez Rumoroso



Santos Torreon Stadium (Mexico, 2008)



Cora Arena (Mexico, 2009)



Pan-American Stadium (Mexico, 2011)



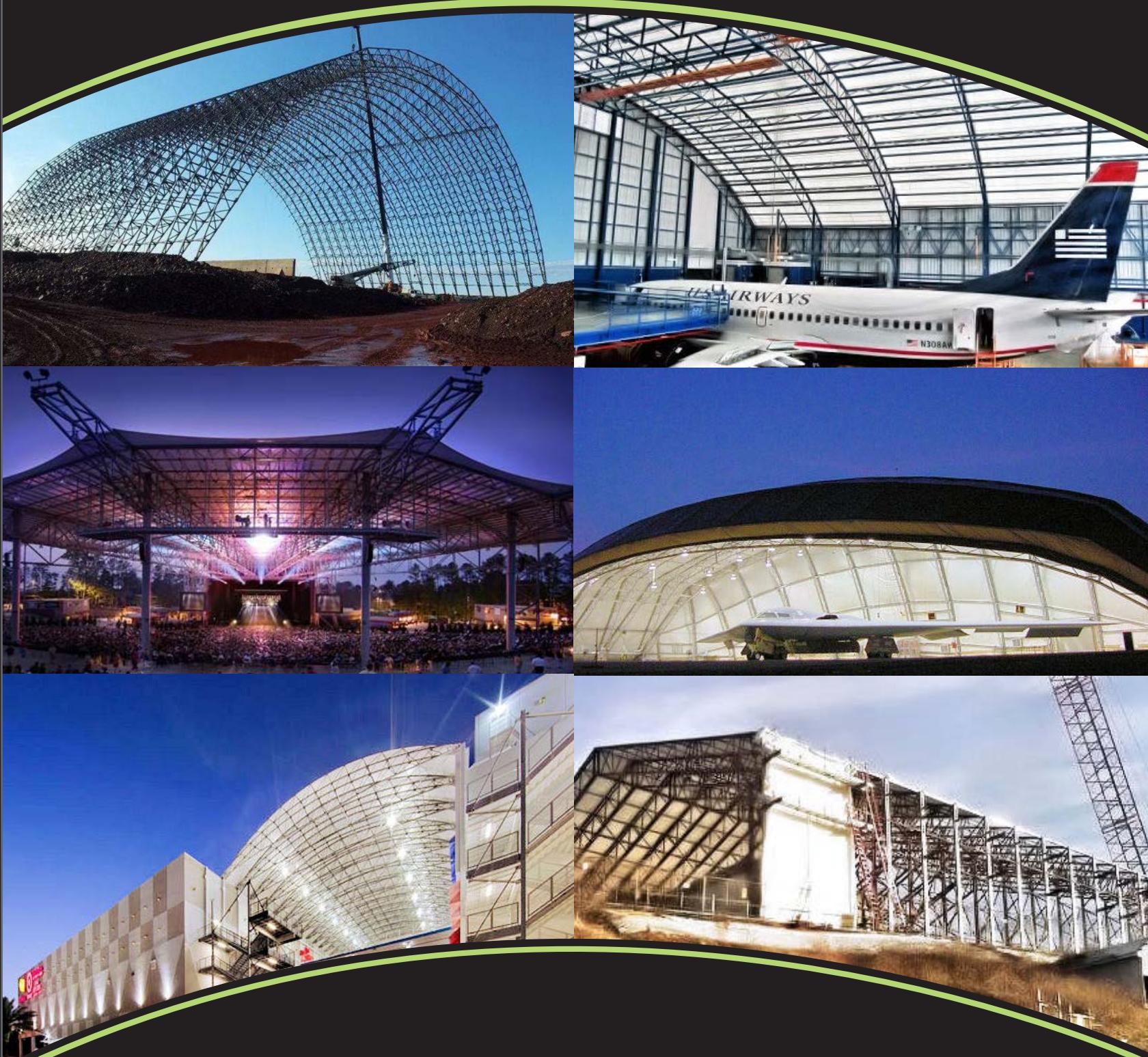
Francisco Madero Stadium (Mexico, 2010)



# FRAME SUPPORTED STRUCTURES

## World Largest Fabric Structures

DESIGN – ENGINEERING – MANUFACTURING



The Big Span principals have experience with the design, engineering and fabrication of aircraft hangars with either fabric or metal cladding for large commercial aircraft as well as lightweight mobile structures for military aircraft and wing or tail enclosures for temporary maintenance.

# Hangar Structures



B2 Stealth Bomber US Air Force (2005)



Florida Space Center (Cape Canaveral, USA 2000)



Florida Space Center (Cape Canaveral, USA 2000)



US Airways Hangar (El Salvador, 2007)



US Airways Hangar (El Salvador, 2007)



# Amphitheaters

Frame Supported Fabric structures have been utilized for major concert halls to accommodate musician and spectators in a perfect acoustical environment.



Live Nation / Mid Florida Credit Union (Tampa, USA 2005)



Concert Hall (Caracas, VEN. 2004)



Atlanta Amphitheater (Atlanta, USA 2005)



Lake Beneva (Wisconsin, USA 2007)



Verizon Amphitheater (Alpharetta, USA 2007)

## Big Span Structures References and Standards:

- American Iron and Steel Institute (AISI).
- American Institute of Steel Construction (AISC).
- American Society for Testing and Materials (ASTM).
- American Society of Civil Engineers (ASCE).
- American Welding Society (AWS).
- National Fire Protection Association (NFPA).

# Steel and Fabric Installations



**Big Span**, designs and fabricates custom Space Frame systems which feature a unique bolt up system. Our Space frames are available in several architectural systems; from a standard planar Space Frame to a dramatic rolled arched show piece.

# Reclamation Use



Hanford, WA



Hanford, WA



Denver, CO



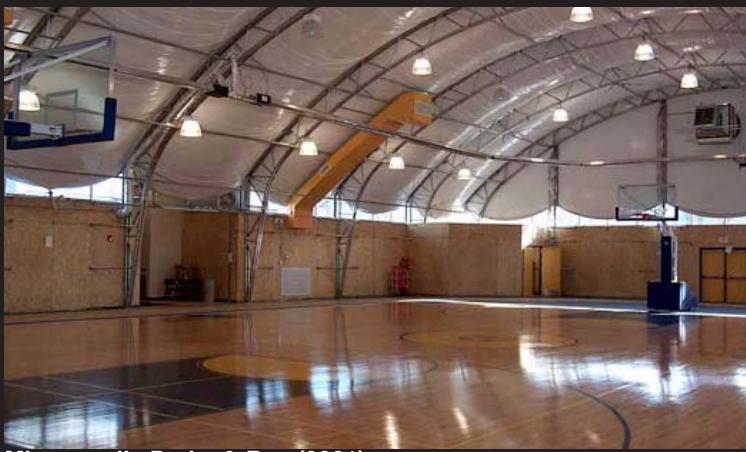
Denver, CO



Denver, CO



Albany, NY



Minneapolis Parks & Rec (2001)



Webster Tennis Facility (Rochester, NY 1998)



Cypress Gardens (2002)



Shopping Center (Caracas, Venezuela)



Indian River Casino (Montgomery, AL)



Port Everglades Terminal (Port Everglades, FL)

Big Span also designs and fabricates custom Canopy systems which feature an easy to install bolt up system. Our Custom Architectural Canopies are only limited to your imagination. We also offer several structural framework types as well as finishes.

# AIR SUPPORTED STRUCTURES

## World Largest Fabric Structures

DESIGN – ENGINEERING – MANUFACTURING



**Big Span Structures** is the leading provider of air supported structures for the enclosure of commercial, industrial and recreational facilities. For over 25 years, our one-of-a-kind team has proudly designed, engineered and fabricated air domes for sports arenas, amphitheaters, waste management facilities, exhibition domes, storage buildings, mobile and utility structures, and industrial process enclosures.

Equipped with the latest technologies, our experienced contractors combine innovative custom design with state-of-the art engineering to build coverall buildings that are **cost-effective, long lasting and easy to maintain.**

All of our air supported fabric structures use only the highest quality structural grade fabric claddings, and always meet or exceed industry standards, including AISC, NFPA 701, ICBO, IBC, BOCA and other building codes around the world.

Since we handle all of the design, architecture, engineering, project management, fabrication and implementation within our own facilities, we are able to take on the most extraordinary projects, from temporary coverings to the largest air supported structures in the world, stretching across a landfill of more than 6.5 acres to enclosing the construction of an entire petroleum refinery.

So if you are looking for a unique and smart alternative for your building and construction needs, please consider a air supported structure from **Big Span Structures** and contact us today.

# Multi-Sports Structures

The first clear-span air supported structure for a multi-sport application was installed at Harvard University in 1968. Due to its size, a basic stress relief strap system was incorporated increasing fabric and membrane strength. The polyester straps were replaced with steel air craft structural cables. The configuration of the straps were re-design into various degree bias grid patterns, providing total encapsulation of the fabric membrane, eliminating the potential for tear propagation and increasing load-bearing capacity. With this and many other design modifications, the groundwork was set for our air supported structures to withstands wind loads of more than 150 MPH and snow loads in excess of 50 pounds per square foot.



Olympic Tennis Center (Seoul Korea, 2001)



Indoor Soccer Facility, Exterior (USA, 2007)



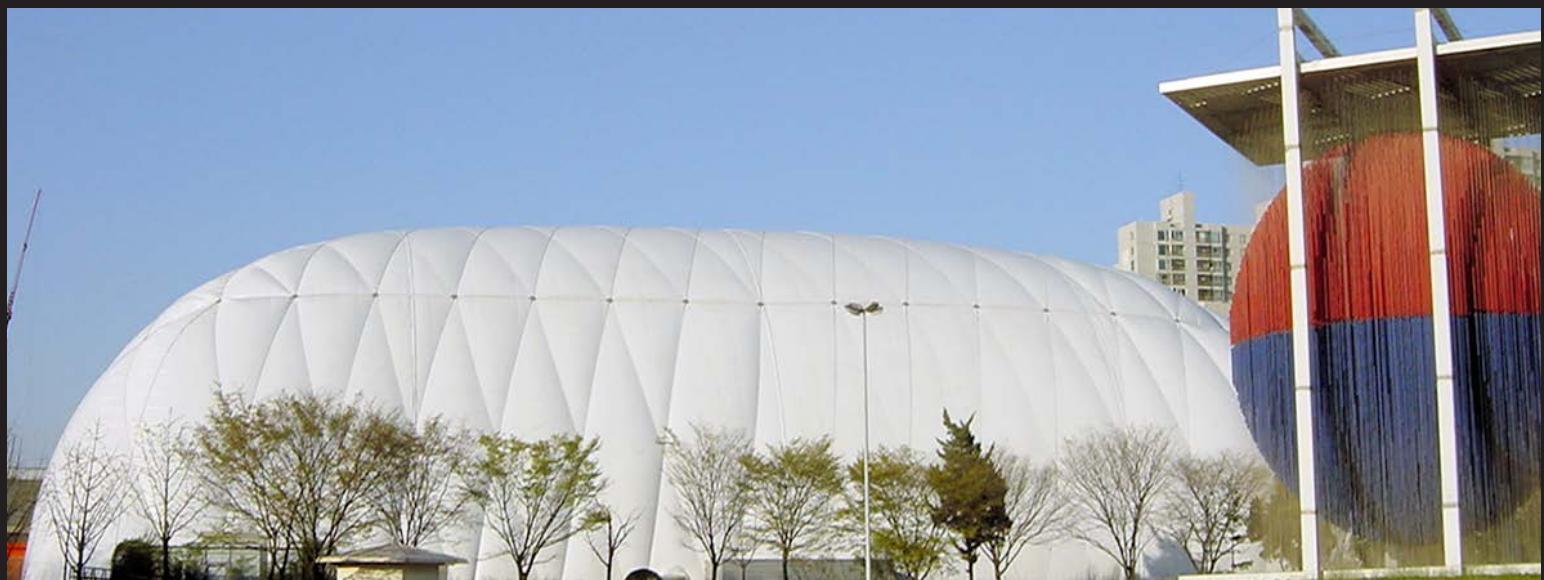
Indoor Soccer Facility, Interior (USA, 2007)

## Features and Benefits of a Big Span Air Structure:

- Proven performance of more than 28 years.
- Structural design for winds up to 150 MPH and live loads up to 50 pounds per square foot.
- Easy Installation and relocation to another location.
- Weather protection year-round.
- Fabrics used are fire retardant, translucent or opaque, mildew and fungus proof and UV resistant.
- Provides immediate permanent or temporary shelter.
- Costs one-third less than traditional building such as brick and mortar, steel and glass.
- Provide wide range of R-values.
- Meet and exceeds standard building codes such as AISC, BOCA, ICBO, IBC, CSA and NFPA 701.

# Exhibition Halls and Arenas

Air structures have been utilized for expansion of existing businesses, to accommodate large traveling pavilions for major marketing programs, for exposition centers to accommodate additional exhibitors or entire trade shows, as emergency replacement of damaged or destroyed facilities, and many other supplemental building uses.



Olympic Indoor Training (Seoul Korea, 2001)



International Olympic Fair (Seoul Korea, 2001)



Bussan International Olympic Games (Seoul Korea, 2002)



Bussan International Olympic Games (Bussan, Korea 2002)

**Big Span Structures can develop the right solution for your unique construction needs such as:**

- Large clear span climate-controlled sites.
- Traveling temporary and permanent pavilions.
- Expo centers.
- Temporary offices.
- Retail spaces.
- Auto dealership lot / inventory protection, showrooms.
- Airline terminals

# Construction Domes

Whether it is pouring a concrete foundation for a residential home (10,000 square feet) or a major construction project for the mining, oil and gas or other industry (500,000 square feet or more), all of these projects could be interrupted or shut down completely due to winter weather conditions or summer rains.

Air supported structures have been the product of choice by every major construction and project management company worldwide. The savings in construction time and increased efficiency of the labor force, working in ideal indoor conditions, more than justifies the investment in a Big Span construction dome.



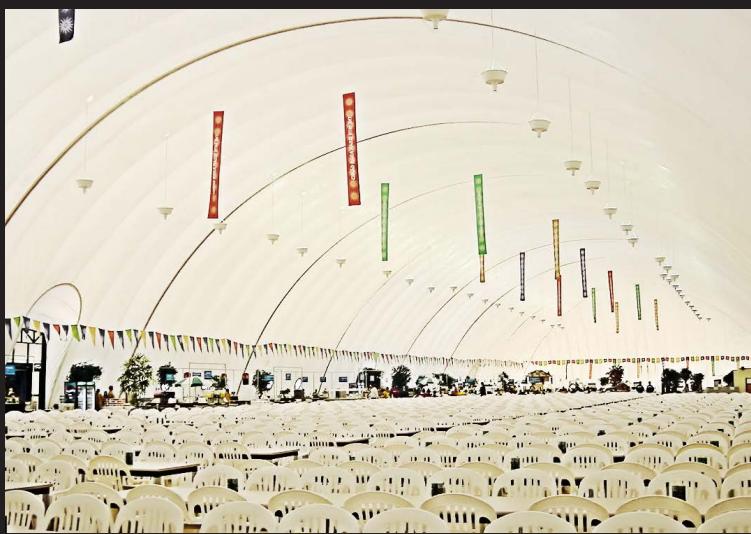
Petrobras (Brazil)



**Big Span Structures can develop the right solution for your unique construction needs such as:**

- Large clear span climate-controlled sites.
- Material, equipment storage.
- Pre-construction staging areas.
- Concrete pouring.
- Soil remediation projects.
- Historic restoration projects.

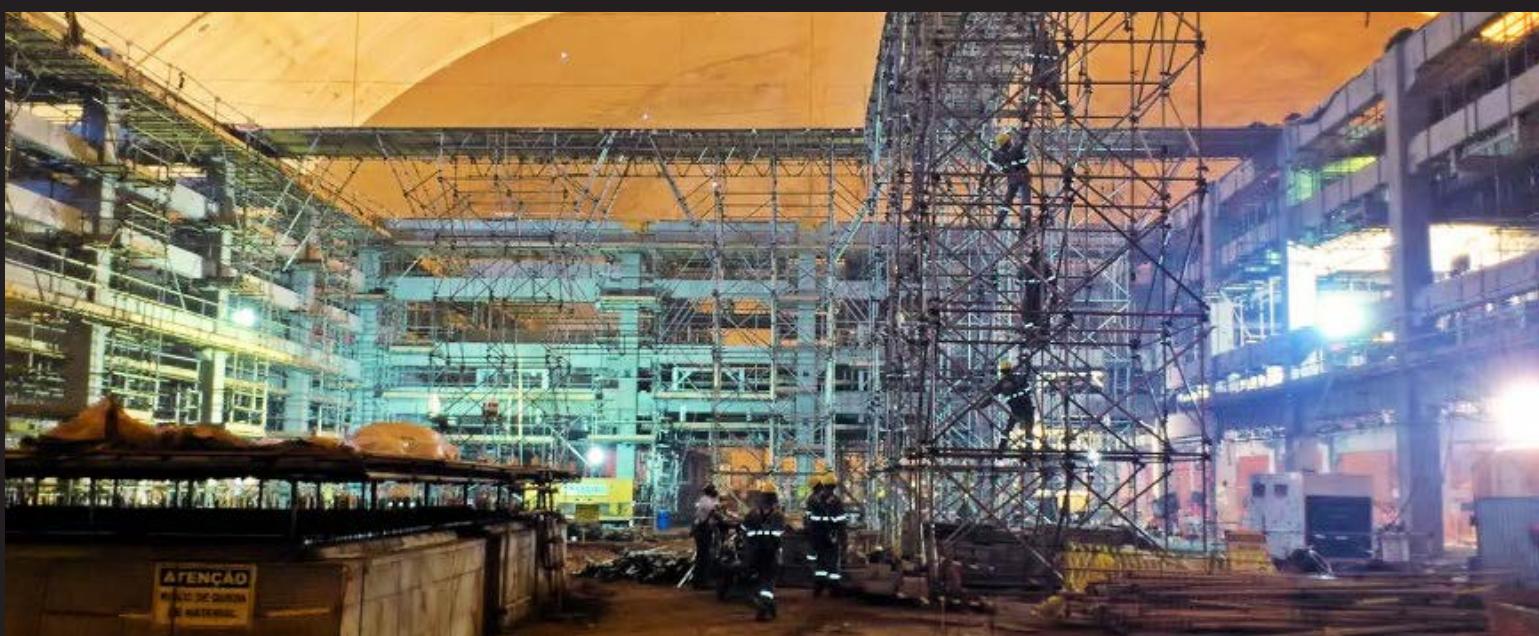
# Applications



Multi-Use Domes



Convention Exhibit Domes



Construction Domes



Storage Domes



Reclamation



Multi-Sport Domes



Expo Center (Kwang Ju, Korea)



Ceramic Exhibition Hall (Yoyu, Korea)



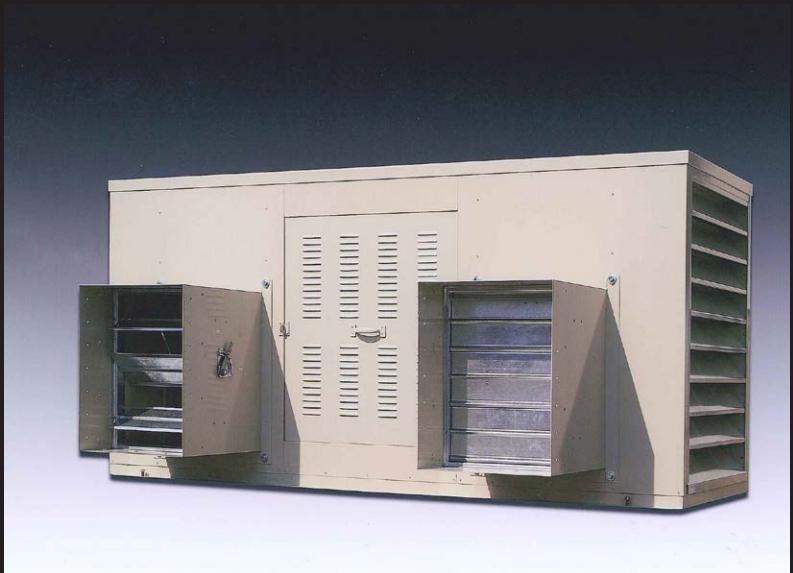
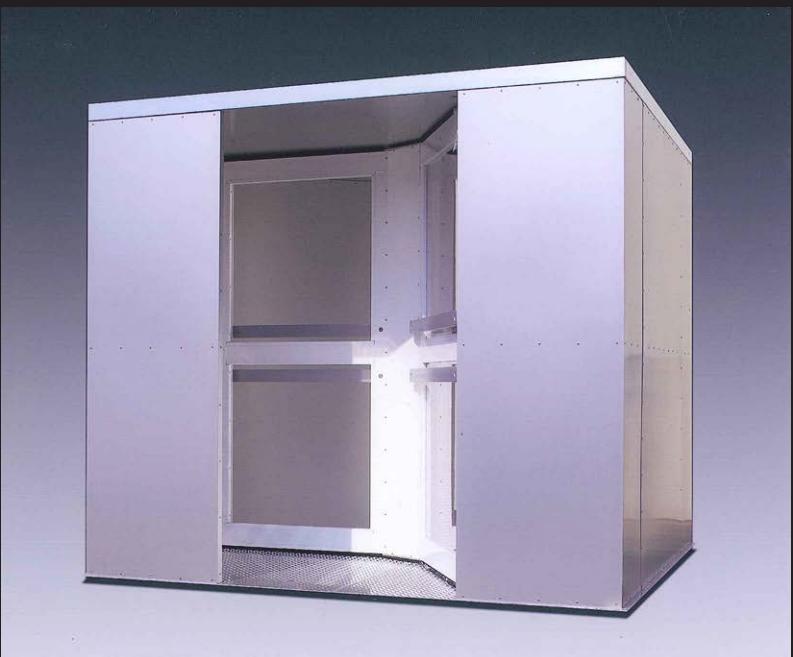
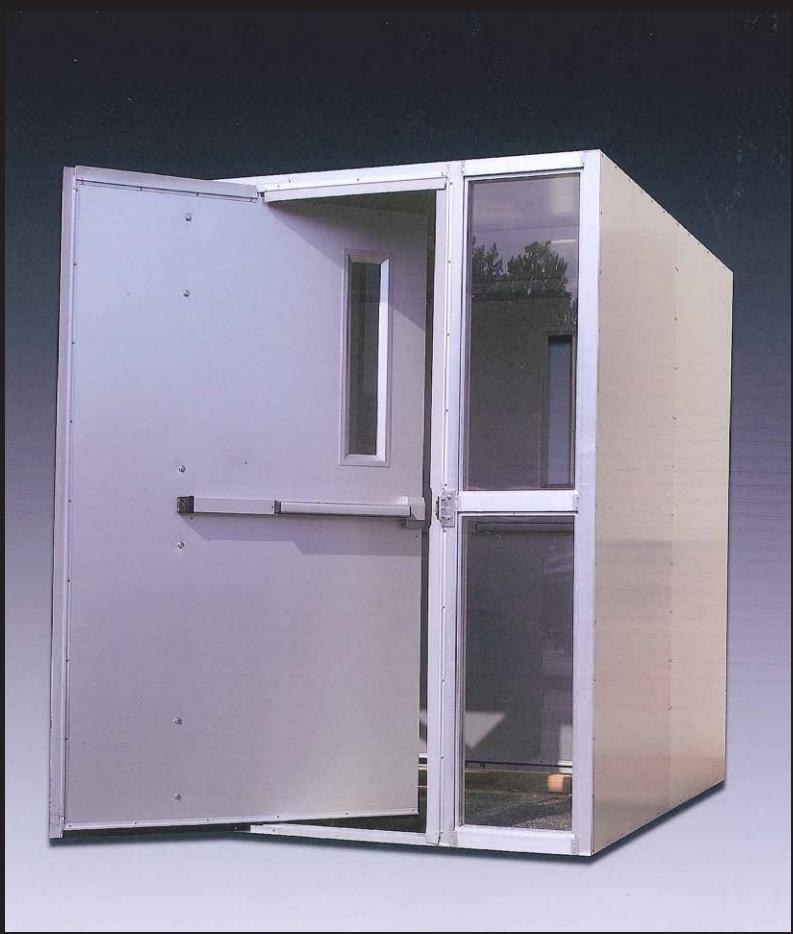
Busan, Korea

# Air Structure Installation

## Olympic Tennis Center



# Air Dome Equipment Options



# MANUFACTURING PLANT

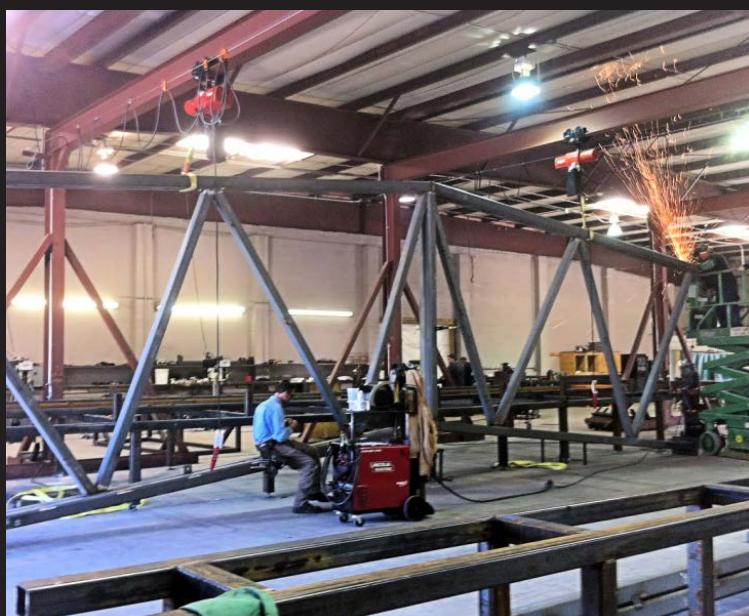
## World Largest Fabric Structures

DESIGN – ENGINEERING – MANUFACTURING



- Over 30,000 square feet of manufacturing plant
  - 15,000 square feet of fabric fabrication shop
  - 13,000 square feet of frame fabrication shop
  - 2,000 square feet of office space
- 100,000 square feet of paved layout and staging area
- Five acres of fenced-in outdoor storage

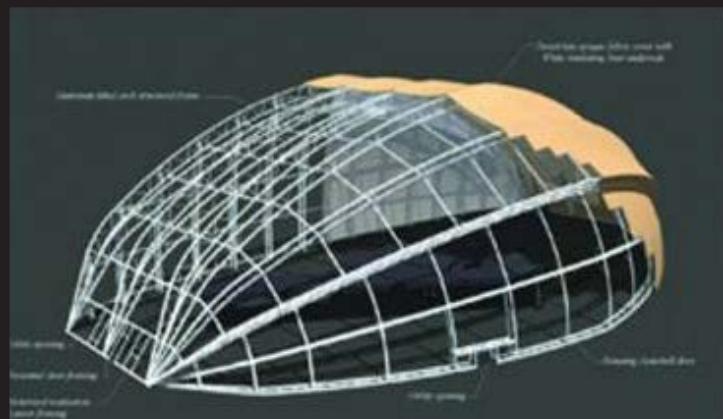
# Frame Fabrication Shop



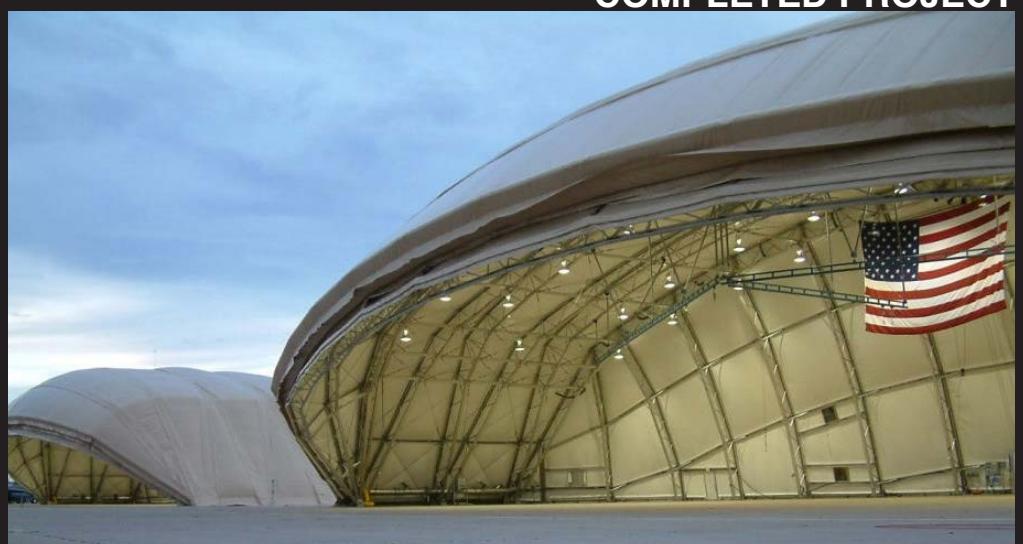
# Fabric Fabrication Shop



# Concept – Design – Engineering



CONCEPT



COMPLETED PROJECT

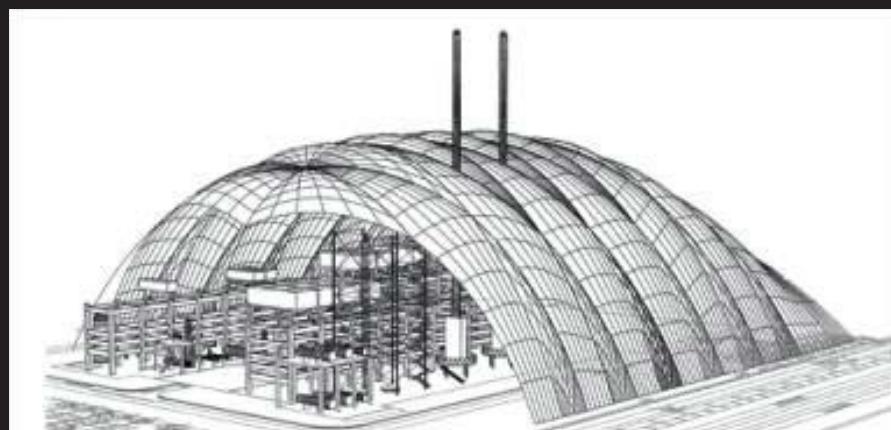


CONCEPT

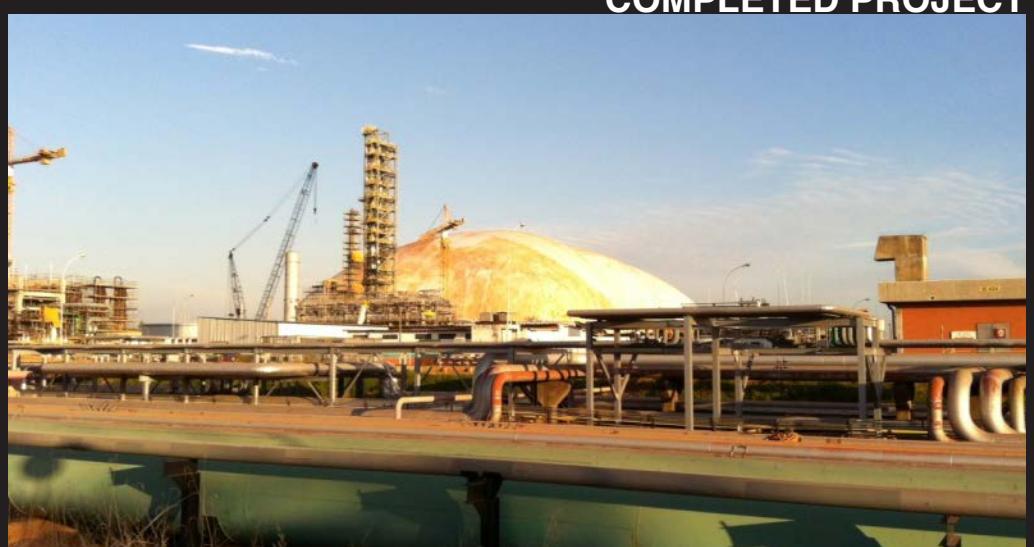


COMPLETED PROJECT

# Concept – Design – Engineering



CONCEPT



COMPLETED PROJECT



CONCEPT



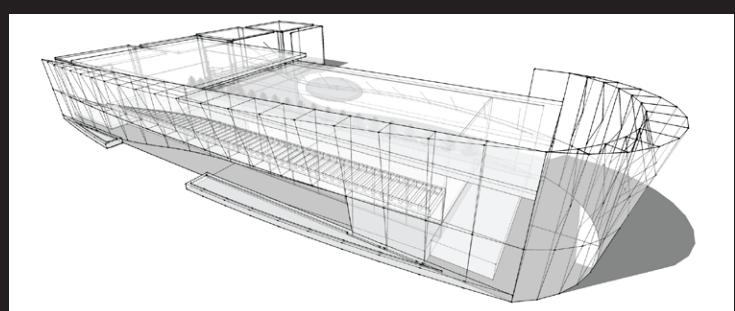
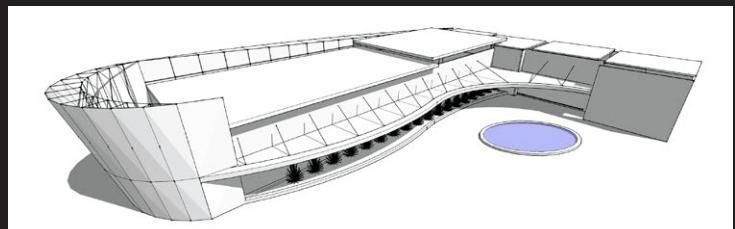
COMPLETED PROJECT

# Textile Facades

Textile facades are an innovated way architects can achieve esthetically pleasing designs with added features of functionality. This technology has been gaining momentum in the building industry for years.

## Key Design Advantages

- Light weight materials
- Freedom of Design – Shapes and Forms. The only limit is your imagination.
- Control in degrees of day lighting and/ or shading
- Material longevity
- Ventilation



# Large Commercial Shade Structures

## “The Umbrella”

We have nick named our large commercial shade structure “The Umbrella” due to the uncanny resemblance to a simple umbrella. These structures are capable of shading large surface areas in commercial or residential settings. We have a product line of “off the shelf” umbrellas that range in size and colors, as well as the ability to make these custom to fit your needs.

For an umbrella catalog or pricing on a custom sizes and colors, please call or email our main office.





## Clients

NASA  
Space Florida  
Arkansas State Highway and Transportation Department  
City of Tuscaloosa  
Crawford Construction  
Javits Center  
The Shaw Group  
Shelton State College  
Cincinnati Zoo & Botanical Garden  
City of Pasco  
Academia Sinica Institute of Astronomy and Astrophysics (ASIAA)  
L-3 Crestview Aerospace, a subsidiary of L-3 Integrated Systems  
ConocoPhillips Company  
City of Las Cruces  
City of Tampa  
Live Nation  
Premier Sports Center, of Western, NY  
Berkowitz Development Group

Burns & McDonnell  
Lockheed Martin  
Fluor  
CedarPoint  
Gainesville Regional Airport  
Albany Regional Airport  
United States Navy  
Tankinetics  
HGA Architecture  
Aurora University  
USMC  
The Meridian Group  
Amtrak  
Galvao  
FIFA  
Gasprom  
La Carpa  
IIHS



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### WEBSITE

