We convert our Clients' concepts into engineered designs,
then manufacture and erect the structures.

SPAN SYSTEMS

Creating tension membrane structures world-wide since 1965

Sahara Center, Sharjah, UAE. Tallest parabolic cone roof with 45 meter long mast.

WE DESIGN AND BUILD ALL TYPES OF TENSION MEMBRANE STRUCTURES

Tension structures are built with flexible membranes (coated fabric or foil) which become stable, loadbearing surfaces when prestressed by cables, and by their supporting masts or arches.

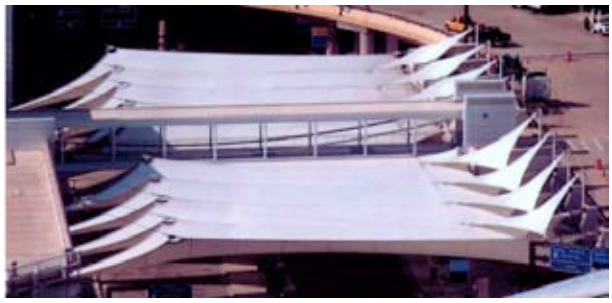
1. Shade canopies, Dubai, UAE

2. Stage canopy, OSU, Newark, OH

3. Theater, St. Augustine, FL

4. Henderson Pavilion, Las Vegas, NV

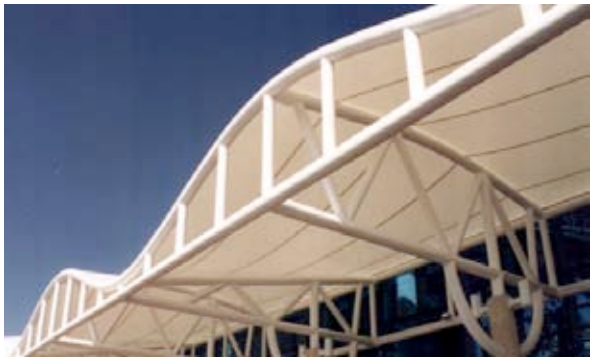
5. Harbor Center Theater, Norfolk, VA



6. Arrival canopy, DFW Airport, TX

Mast supports can be internal (Sahara Center), peripheral (1) or both (2). Internal masts create peaks in the roof. They may carry their load directly to their foundations. However, to prevent blocking the view of spectators, they can be cut short, and placed on top of trusses, which are extended between peripheral supports (3,4). Peaks in the roof may also be pulled up by cables, suspended from peripheral supports, including at least one tall mast (5). Folded roofs with valleys and ridges may be suspended from series of cables stretched between buildings (6).

7. Bank of America Pavilion, Boston, MA



8. Cruise-ship Entrance, Port Canaveral, FL

Arch supported roofs have single (7) or multiple (8) arches. Their membrane can be suspended below (7), or placed on top (8) of the arches. Structures with arches are more economical for snow load.

THE SPANDOME SYSTEM

is one of the most successful membrane structure systems, with hundreds of Spandomes built world-wide. Spandome roofs have diagonal arches. A great variety of Spandomes are providing most economical roofs, or complete buildings, ranging from simple, standard Spandomes, with two arches crossing diagonally over a rectangular ground plan (9-12), to structures with multiple, concentric arches, covering large, polygonal ground plans (13-14).

9. Swimming pool, Rota, Spain

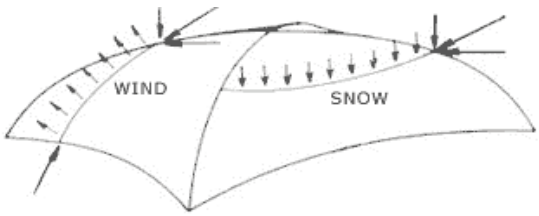
10. Water treatment plant, Chesapeake, VA

11. Tennis courts, La Grande, OR

12. Aircraft hangar, US Military Base

13. Parking shades, Budapest, Hungary

14. Auditorium, Orlando, FL



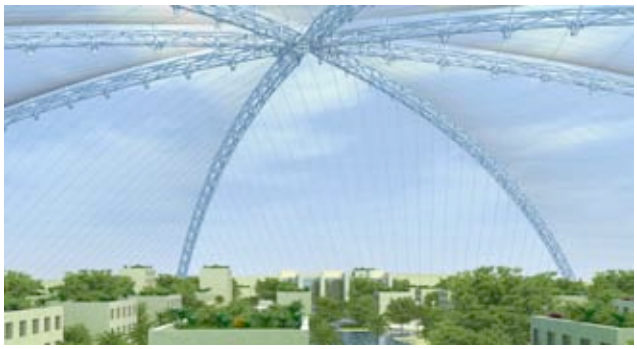
The distribution of stresses in Spandomes is near ideal. Snow load decreases as membrane spans increase from the top down. Wind load causes upward suction over most of the surface, reducing arch loads. On the arches the vertical components of both wind and snow loads point downwards. For these reasons bending moments can be kept small in Spandome arches with long spans.

But even with Spandomes under snow load the longest span is less than 300 meters. Since 1992 world-wide research efforts have not been able to exceed the Georgia Dome's 256 m clear span. The reason is, that nature's random and asymmetrical loads (snow and wind) cause both compression and bending moments in the arches. Increases in compression stay linear with span increases, but moments increase exponentially, making the arches too heavy. In order to eliminate bending moments, nature's loads on the arches should somehow be made uniform and symmetrical. This is being achieved, for first time, with the Spantheon system.

THE SPANTHEON SYSTEM

is the long-awaited technological breakthrough, which makes it possible to built giant, clear-span domes. The system has evolved from Spandomes, in which the tensioned membrane surfaces are attached directly to their arch supports. In Spantheons the membranes are suspended from the arches by a block-and-tackle suspension system, which converts the random, asymmetrical roof loads into uniform and symmetrical arch loads, and thus substantially eliminates bending moments from the arches. The system is described in www.spantheon.com. It is protected by International Patent WO 2006/136867. "Roof arches without bending moments".

The Spantheon's membrane, made of transparent ETFE (Teflon) film, transmits UV rays, and supports lush, evergreen vegetation year round, to produce oxygen, absorb CO2, and provide food from "vertical farms". Photovoltaic panels, laminated onto the membrane, supply electricity.



Geothermal energy becomes economical, even if extracted from great depths, because it is used in a closed space. Total energy need is greatly reduced by the dome's geometry, because heat loss or gain through the giant dome's surface is about 90% less than through typical building surfaces. Erection of housing inside the dome is non-stop, unaffected by the climate outside. There is no snow or wind load, no need for thermal insulation, therefore construction is light. These and other savings pay for the dome.

Of all the known technologies the Spantheon system is best suited to meet the coming need for creating economical, new cities for entire societies, that are expected to be displaced by global climate change, rising sea-levels, desertification, radiation, heavy air-pollution, and energy shortage.

For further information contact our Europe Office:
SPAN SYSTEMS INTERNATIONAL Kft.
Kobolkut utca 33/b, Budapest, 1118 Hungary
Tel: 36 1 279 1774 Fax: 36 1 279 1775
e-mail: office@spansystems.info

Corporate Headquarters: SPAN SYSTEMS INTERNATIONAL, Inc. (New York, NY, USA)

IFAI Outstanding Achievement Award 2005

Bus station, Denver Airport, Denver, CO

IFAI Outstanding Achievement Award 2008

Twin River Entertainment Complex, Lincoln, RI