

The Shaded Dome Factsheet

Eye-catching

Free forms for infinite
shape possibilities

Pattern cutting with
2 membrane layers

Smart LED-lighting from
200-500 lux

Tailor-made

Multifunctional use for Sports, Expo
and Commercial utilisation

One open space with large free
spans up to 150m

Floor area ranging from 500m²-20.000m²

Accommodates 1.000 persons

Climate Friendly

Prevention of irradiation by double
layered skin

Passive cooling by airflow in cavity

Over 65% reduction in energy use

415 tons CO₂ reduction
per year (5000m²)

Insulated inner skin with low E coating

Circular potential for reuse,
remanufacture and recycle

High Comfort

25°C indoor temperature
3.5 seconds reverberation time for optimal
acoustics performance

Total air volume
refreshed 1.5x per hour
for optimal air quality

Optimised for tropical
climates with Te>30°C

suits low humidity (10%) to
high humidity (90%)
Sand, water & air resistant

Light-weight & Compact

Transport in only a few containers

Total mass of only 5 kg/m²

Foundation with only ground anchors
suitable for all undergrounds

Structured with air pressure

Built in a matter of days

Period of usage from 6 weeks to 15 years

Demounted in a couple of days



shaded dome
TECHNOLOGIES

www.shadeddome.com

The Shaded Dome Benchmark

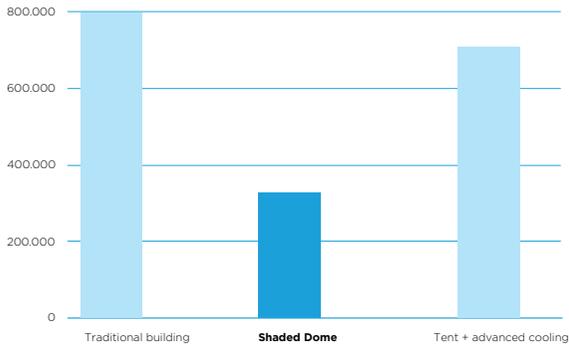
The Shaded Dome: a combination of a lightweight construction and a traditional building

The Shaded Dome has multiple advantages over typical tent structures and equals the comfort levels of traditional (permanent) buildings. This sheet provides an overview of the Shaded Dome performances, benchmarked for various criteria against tent structures and traditional buildings. The advantages of the Shaded Dome, in terms of Total Cost of Ownership, movability, size and free spans and reusability are clearly proven.

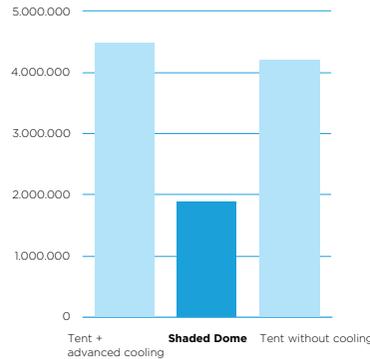
Benchmark principles for Traditional Building vs. Shaded Dome vs. Tent

1. Internal free height: 9 m.
2. "Climate: hot and dry location (desert like) -> Climate: Jeddah 1 July 2005: T = 38,7°C, 1322 W/m² solar radiation
3. Indoor climate: 25°C in the dome
4. Insulation-value (both traditional building and Dome): Rc = 2,5 m².K/W

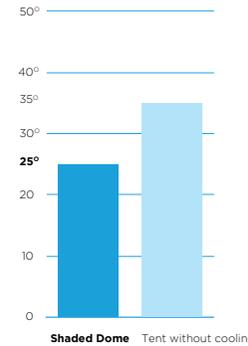
1: price (eur/m²) for size 5000 m²
2: Total cost of ownership over 15 years)



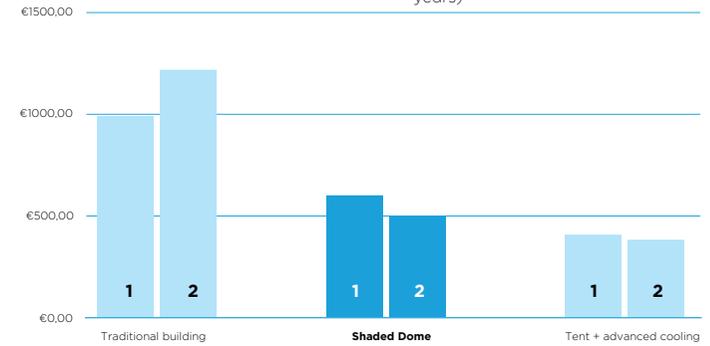
Environmental impact (kg CO₂)



Energy consumption (MJ per year)

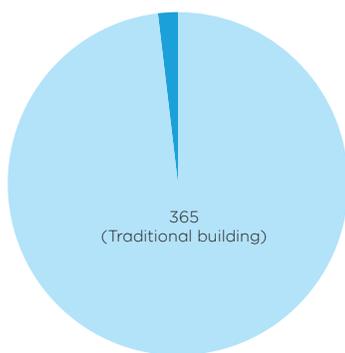


Quality Indoor Climate (at 40°C outside temp.)



Investments vs Total Costs of Ownership

Construction time (in days)
7 (Shaded Dome)



Overall performance

	Traditional building	Shaded Dome	Tent + advanced cooling
assembly / construction time	-	++	++
average life time (years)	++	0	0
re / demountability	-	++	++
reusability	-	++	0
free span	-	++	-
price (€/m ²) for size: 5.000 m ²	-	0	+
annual energy consumption (MJ)	-	+	-
environmental impact (CO ₂ in kg)	-	++	-





shaded dome
TECHNOLOGIES

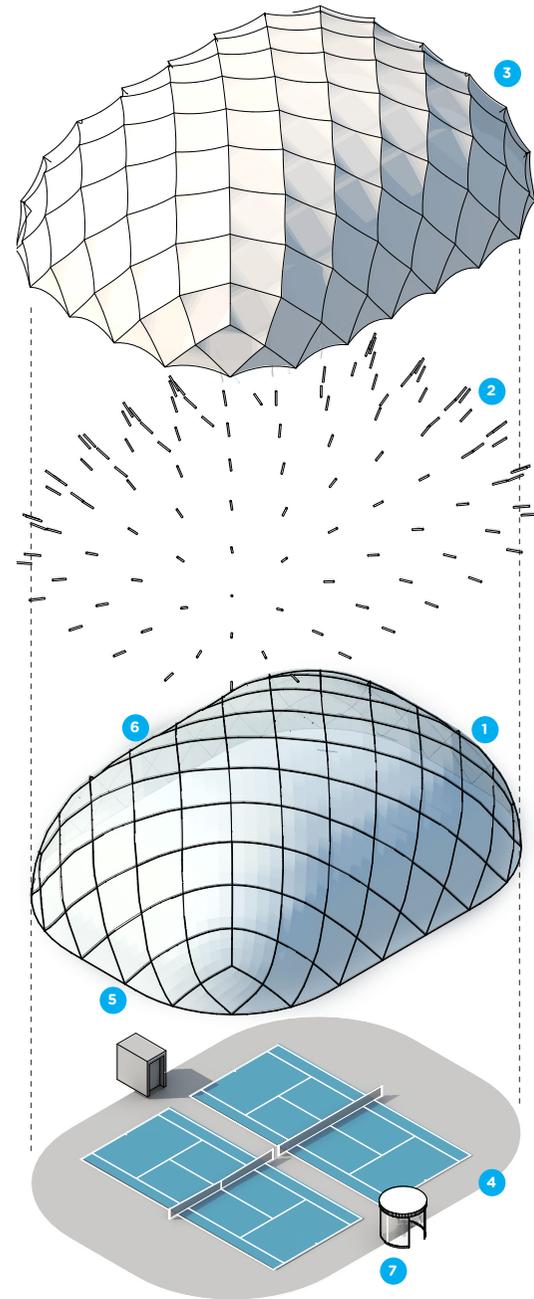
www.shadeddome.com

The Shaded Dome

Technical Specifications

Element	Colour	Description	Additional specification
1 Membrane inside (Airdome)			
Inner layer skin	white	PES-fabric, PVC-coating on both sides	Fire resistant DIN4102B1
Insulation layer		5 mm felt with alu foil at both sides	4102A1 nonburnable 4102B1
Outer layer	white	PES-fabric, PVC-coating on both sides	
Cable net		Stainless steel, 6 x 19 mm cable structure	S235 / Diameters 8 and 12mm
2 Spacers			
Pin		Galvanised steel tube with mushroom head	
3 Membrane outside (Shade)			
Single layer	grey	Low E PVC-coating, single layer	
4 Foundation			
Anchors cable net		Steel ground anchors (determined by local underground)	Max. depth 10 meter
Anchors membrane outside		Steel ground anchors (determined by local underground)	Max. depth 10 meter
5 Mechanical equipment			
Fan & emergency fan		Installed in external containers for sound absorption Control engineering for wind speed etc, Filter labyrinth for capturing sand by suction, air duct for air supply and distribution for air distribution	
Cooling		Small cooling equipment in airdome	
Ducts		Textile air ducts with exhaust nozzles	
6 Electrical equipment			
Lighting	white	LED high bay, PVC-fabric strips	150W
Emergency lighting		At every door in case of a power breakdown	
7 Entrance			
Revolving door		Steel doors, acrylic glass windows	2 x 2 meter
Emergency door		Galvanised steel frame, doors provided with panic interlock	1 x 2 meter
Additional			
Excluded		The Shaded Dome is delivered without floor system or interior Along the perimeter the membrane layers are buried in the ground	
Acoustic (optional)		Possibility to improve acoustic performance by adding fabrics to the inner layer	
Translucent panels in façade (optional)		Possibility to improve transparency by adding translucent panels to both layers	

- 1 Membrane inside (Airdome)
- 2 Spacers
- 3 Membrane outside (Shade)
- 4 Foundation
- 5 Mechanical equipment
- 6 Electrical equipment
- 7 Entrance

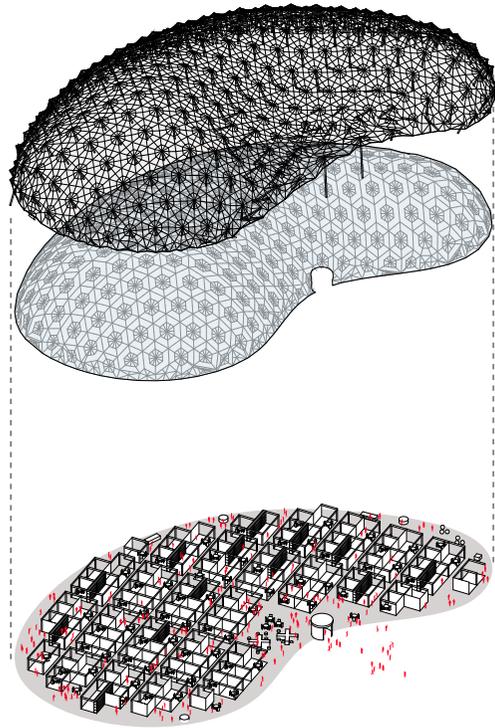


The Shaded Dome
Exhibition
 1.800 m² - 12.000 m²

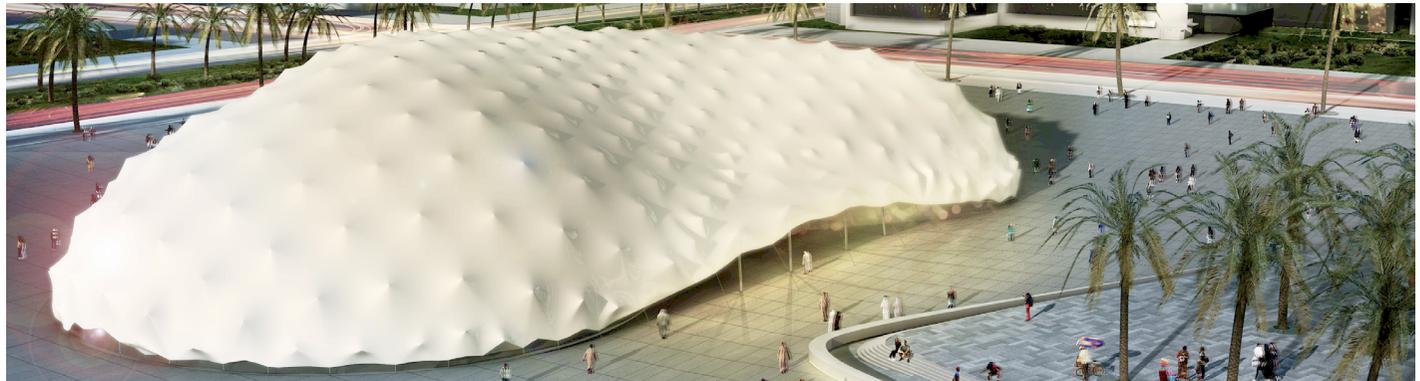
‘Unprecedented flexibility in size and shape’

The Shaded Dome is an outstanding venue for exhibitions. It can be built in a matter of days, and can be used for both temporary as well as permanent events. The air dome is column-free, and with sizes ranging between 1.000m² and 5.000m², any type of exhibition can be accommodated. Inside the dome, climate-controlled conditions ensure a comfortable air temperature and humidity level, creating a pleasant atmosphere for visitors and employees. For fragile and sensitive artwork, additional climate provisions can be added that keep the artwork within strict climate boundaries. Need to accommodate a valuable museum collection, a unique art gallery or a state-of-the-art exhibition? The Shaded Dome makes it all possible.

Customized shape	Oval - Round - Complex
Controlled conditions	Light - Air - Temperature
Large size & free-span	1.000m ² - 3.000m ² -5.000m ²
Experience	Colour - Material - Lighting



Exploded view - SD Exhibition





shaded dome
TECHNOLOGIES

www.shadeddome.com

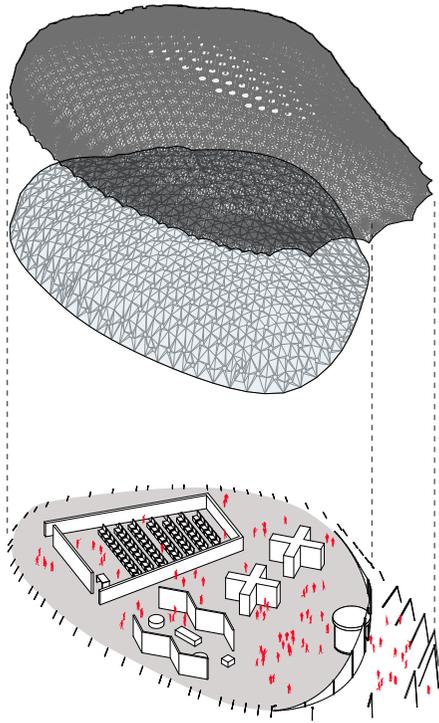
The Shaded Dome Pavilion

700 m² - 2.500 m²

'Unique architecture anywhere in the world'

For various public, corporate and religious functions, the Shaded Dome is the perfect pavilion. The Shaded Dome has the quality to adapt to local cultures and communities, in terms of shape, appearance and texture, providing unique architecture anywhere in the world. It is able to accommodate up to 1000 visitors, in a safe and suitable environment. The absence of columns makes the space flexible to configure in any desired way, giving the Shaded Dome a multifunctional quality. Even with a large number of visitors inside, the dome offers high quality acoustical performance. The Shaded Dome welcomes the world.

Eye catching	Shape - Appearance - Texture
Spatial	Free spans - Large area - Height
Multifunctional	Public - Corporate - Religious
Acoustical performance	3.5 sec reverberation time



Exploded view - SD Pavilion





shaded dome
TECHNOLOGIES

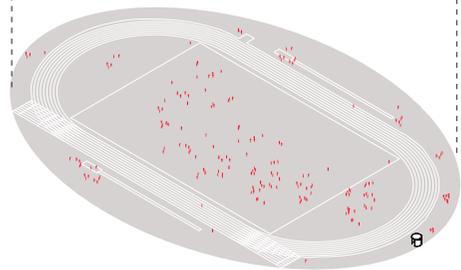
www.shadeddome.com

The Shaded Dome
Sports
 9.000 m² - 24.000 m²

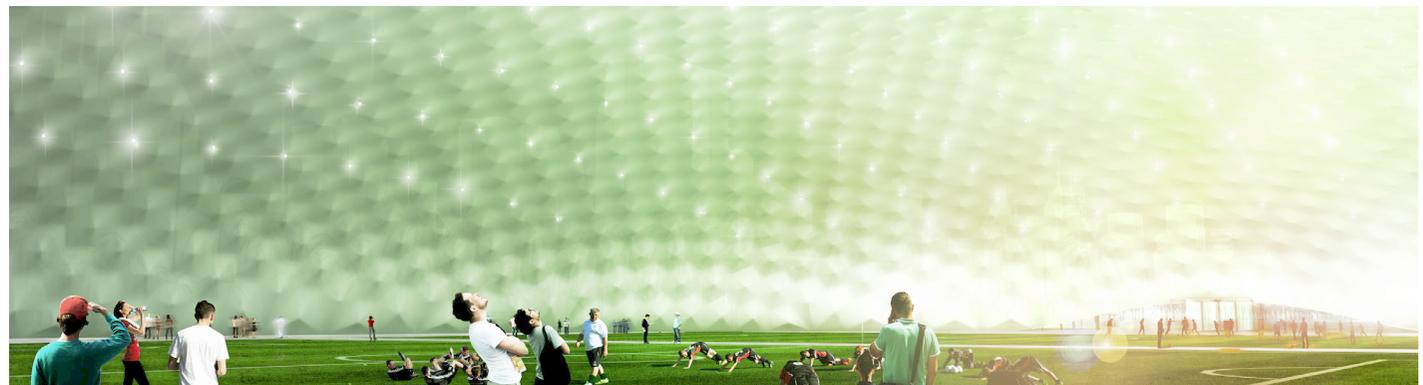
‘Pleasant indoor microclimate in a free-span, air-supported dome’

A comfortable internal climate and a column-free interior make the Shaded Dome a solid sports venue. Its ingenious double skin concept and energy efficient ventilation system ensures a comfortable indoor temperature and humidity level, creating climate conditions equal to permanent indoor sports facilities. The Shaded Dome can be realized in many customized shapes and sizes, up to a maximum of 24.000m2. A Shaded Dome can be built for various types of indoor sports, from football to athletics, and from tennis to basketball. The Shaded Dome is a performance-driven venue, for all sports.

Performance-driven	Climate - Temperature - Humidity
High comfort	Light - Air - Glare
Full sports venue	Pitch - Dressing rooms - Spectators
Multiple sports	Football - Tennis - Basketball



Exploded view - SD Sports





shaded dome
TECHNOLOGIES

www.shadeddome.com

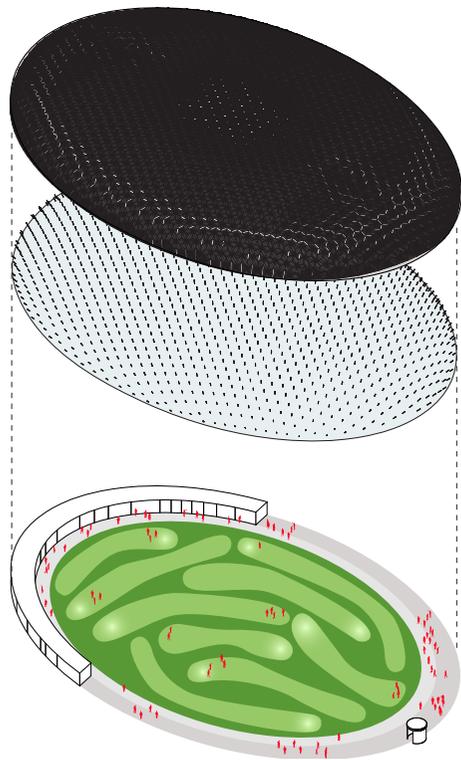
The Shaded Dome Indoor Golf

5.000 m² - 10.000 m²

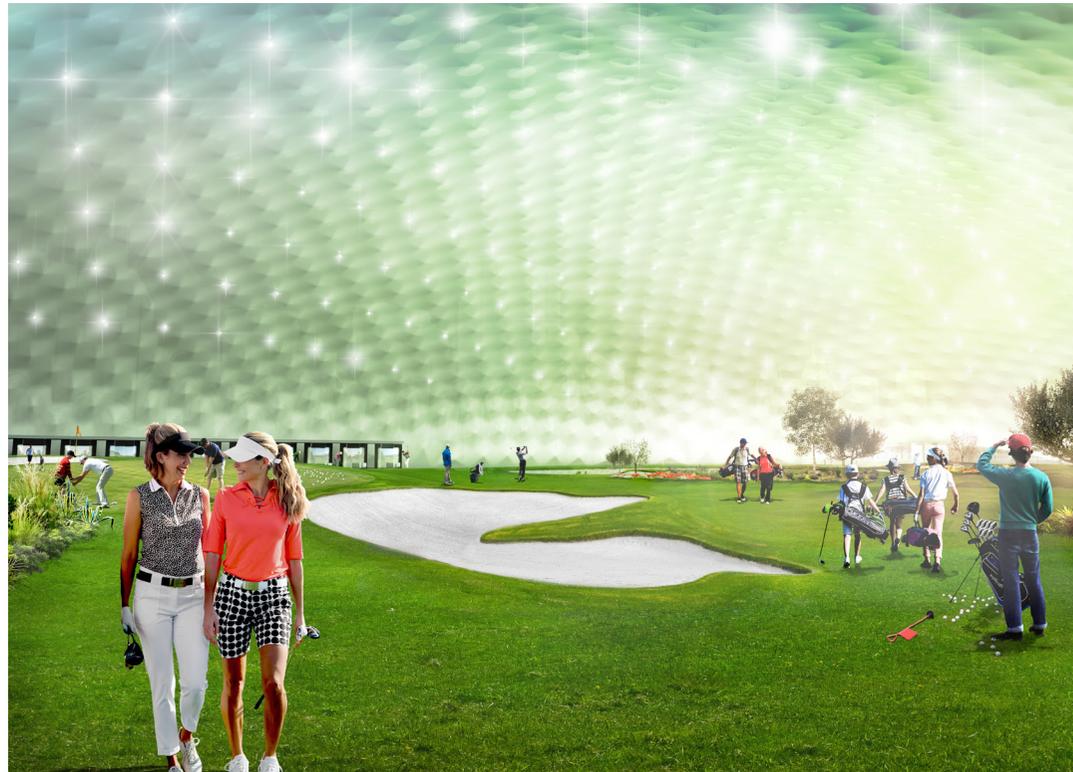
'A contribution towards the future of golf'

Indoor Golf facilities have the potential to grow the beautiful game of golf and provide a valuable and major contribution towards the future of golf. Key opportunities for growing the game of golf are the 4 F's: **Flexibility - Friendship - Family - Fun**. The Shaded Dome is the perfect venue for indoor golf. Concepts that offer a unique experience by combining synthetic grass play and practice facilities with golf simulation and entertainment may likely become the biggest growth vehicle in the golf industry and introduce the sport to a whole new audience. The Shaded Dome offers a comfortable indoor climate and a column-free interior and can be realized in many customized shapes and sizes to provide the ultimate indoor golf experience.

Customized shape	Oval - Round - Complex
Controlled Conditions	Light - Air - Temperature
Experience	Colour - Material - Lighting
High Comfort	Light - Air - Glare
Eye-Catching	Shape - Appearance - Texture
Spatial	Free spans - Large area - Height



Exploded view - SD Indoor Golf





shaded dome
TECHNOLOGIES

www.shadeddome.com