

Outside In

New technology means any outdoor sport can now be built indoors.

Here's a look at the options available to developers.

By Jeff Coy

February 19, 2009 --- In the German city of Brand, not far from where the Berlin Wall once stood, a former airship hangar houses Tropical Islands, a 700,000-square-foot indoor waterpark resort with a sandy beach, lagoon, spa, fine dining and a hotel. Regardless of the weather this mega resort is open 24/7, through the use of some hi-tech roofing.



Ocean Dome in Miyazaki, Japan is known as the world's largest indoor waterpark. It's the size of three football fields, or 322,700-square-feet and features a fully retractable roof, which is kept open when warm weather permits.

One of the largest shopping malls in the world includes one of largest indoor waterparks in the world, the 217,000 square-foot World Waterpark at the West Edmonton Mall in Alberta, Canada. When there is a blizzard outside, the glass roof allows natural light through and makes the 86-degrees inside seem tropical.

Thanks to advanced roofing technology, larger and larger indoor facilities are now becoming possible. For example, today we can easily convert a 7-acre outdoor waterpark into a 7-acre indoor waterpark with no supporting posts.

This trend makes it possible for outdoor venues to expand their peak season from 100 days to 365 days a year, and the ability to let in the light and keep out the weather is perfect for indoor waterparks.

Using a transparent roofing system, resort developers can create an economical indoor island paradise that is open to the sky all year long – a big attraction for people that live in areas where it's too cold, too hot or too rainy. What's more, the new high-tech structures are often less costly than traditional materials.

If you're looking to cover a large space, there are currently four ways to do it.

- Aluminum and glass
- Thin shell concrete domes
- Polycarbonate grid
- Movable roofing systems

1) Aluminum and Glass. Open-air buildings can be all glazed or in-filled with other materials. These buildings are perfect for indoor waterparks, pool enclosures, restaurant patios or shopping mall concourses where the building owner wants to bring the outdoors in. Built by OpenAire of Toronto.



2) Thin Shell Concrete Domes. There are now dozens of dome structures — designed for both industrial and commercial use — in existence around the world. Dome Technology Inc of Idaho Falls ID has built numerous domed churches, schools and homes. Large spaces can be sliced into the dome, letting in a maximum amount of light. Recently, the Holiday Inn Express in Toledo-Maumee, Ohio, opened its indoor waterpark using the dome structure. With no support posts, the waterpark layout is unencumbered, as water rides and slides hang from the ceiling of the dome.



3) Polycarbonate Grid with Texlon Foiltec. Texlon Inc of Cohoes, N.Y., built the Biomes at Cornwall, England, similar to the geodesic domes made famous by futurist Buckminster Fuller. Foiltec uses a polycarbonate grid system with several layers of texlon transparent materials that can withstand great snow and wind loads. Polycarbonate Grid waterpark projects include the waterpark expansion at Kalahari Resort in Sandusky OH, the 68,000 square-foot outdoor wave pool at Wilderness

Resort in Wisconsin Dells, WI and the 42,000-square-foot pyramid-shaped indoor waterpark at Massanutten Ski Resort in McGaheysville VA, shown below, which brought the outdoors indoors using texlon.



4) Moveable roofing systems. Moveable roofing systems are perhaps most popular in sports arena design. Reliant Stadium in Houston, Miller Park in Milwaukee and the University of Phoenix stadium in Glendale AZ are three examples built by Uni-Systems of Minneapolis MN. Moveable roofs and walls make it possible to convert outdoor waterparks and amusement parks into flexible outdoor-indoor facilities that can generate revenue all year long, regardless of weather.

For more, you can attend Hotel Waterpark Resort Workshop March 10-13, 2009 in Wisconsin Dells. Call Renata at 608-254-8366 or go to www.hotelwaterparkworkshop.com to register.

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