



A breath of fresh air for Qatar's FIFA World Cup

Arup Associates' showcase stadium for the 2022 FIFA World Cup is the world's most sustainable football arena. It runs on solar power while protecting spectators from the strong summer heat, and was even nominated for the 2012 WAN Awards.

Set to take place in 2022, Qatar's first world football cup is a challenge in many respects. First, outside temperatures of over 50°C are unbearable even for the World's football elite. Then, the country's ambition to organize the greenest World Cup ever is a tall order in a region where water scarcity and the seemingly unavoidable use of air conditioned are likely to result in enormous carbon footprint.

But that was before Arup Associates presented its 500-seat showcase stadium as part of the Qatar 2022 World Cup bid. Acknowledged as the world's most sustainable stadium, the masterpiece is a small version of Qatar's future main stadium. It stands as proof that even the harshest summer climate cannot prevent Doha from hosting the event, and was even nominated for World Architecture News' 2012 Engineering Award. The 2022 Showcase consists of two semi-circular structures, one slightly smaller than the other, which can either provide a fully closed stadium or a semi-open structure. The smallest dome can indeed rotate underneath the largest one to allow for natural wind cooling. The roof is made up of hundreds of panels that can be adjusted to protect players and guests from strong winds or the sun.

The stadium uses state of the art climate control techniques and technology to deliver a carbon neutral venue. Alongside photovoltaic cells and solar collection to power the artificial climate control, the stadium uses the newly developed Ferrari Low Emission PVC fabric. Covered on one side with a low emission coating and coloured with an aluminium pigment, the fabric is designed to control solar gain and light transmission by reflecting the majority of solar rays away from the stadium.







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Other features include cross breezes and under-seat cooling, which were preferred to blasting air conditioning throughout the stadium complex. Photovoltaic solar panels capture energy from the sun and store it on site when the arena is not being used, while biofuel provides for the additional energy usage when the stadium is in use.

Such innovative and sustainable design was paramount in the stadium's adoption by Qatari authorities. Not only from an architectural point of view, but also for the message it delivers to the world.

Project: Showcase stadium
Year of Completion: 2010
Design: Arup Associates
Location: Doha, Qatar
Technical info: PVC - Fabric
Function: Weather protection, roof insulation
Picture Credits: Arup Associates





VinylPlus teams up with European chemical industry

VinylPlus joins forces with the EU chemical industry to enhance chances of success and concrete results.

Released in May 2012, Cefic's Sustainability Report is the new barometer of European Chemical Industry (ECI) performance. Health, safety, environment, but also aspects such as trade, profitability, investment and jobs are all covered and depicted by major projects and Key Performance Indicators (KPIs). And if the document stands as proof that "sustainability is our way of doing business," what better project than VinyIPlus to illustrate it?

VinylPlus meets the sustainability vision, priorities and key criteria of the ECI. Major project involving multiple partners across borders, it comes as a response to societal needs and megatrends and complies with European priorities. It is defined by short-term and long-term objectives, KPIs, key milestones, existing and potential partners, and important external stakeholders. All these specificities make the PVC industry's project an ideal candidate for Cefic's initiative. On the other hand, joining forces with Cefic is a unique opportunity to increase VinylPlus' visibility and potentially help overcome hurdles, thereby accelerating the progress toward its defined ambitious goals. As the system is based on concrete KPIs, the actual performance of projects can always be measured and be included in the ECI Sustainable Development report 2014.

The idea is that these initiatives "complement each other", are ambitious and generate top level attention from the European chemical industry to provide the resources, time, people, and innovative solutions necessary to reach the set objectives.





Jumping your view of Paris

If bridges are commonplace in Paris, they are usually meant to help cars, trains, cyclists or pedestrians cross the Seine River. But what if they could do more?

For the Paris-based Atelier Zündel Cristea (AZC), a bridge should be a unique, entertaining experience for pedestrians. And what better way to entertain people than building a giant trampoline? Made of three PVC rings inflated with more than 130,000 cubic feet of air, AZC's creation was suggested as an entry for a competition organized by Archtriumph, a web-based architecture and design magazine.

The still-virtual bridge would be installed near the Bir-Hakeim Bridge. It consists of inflatable modules similar to giant life-preservers of 30 meters in diameter. In the central part of each ring, a trampoline mesh is stretched. The floating buoys, made of a PVC membrane, are attached together with a cord to form a stable and self-supporting construction.

The project, entitled "Saut de Seine", would grant tourists and inhabitants alike with a new perspective of Paris: upright and leaping, upside down and tumbling or even gliding above like a circus performer!

If constructed, Saut de Seine would be located close to Eiffel's tower, which is itself a symbol of ephemeral architecture designed to provide a unique view of Paris. According to the designers of AZC, these two constructions share a specific vision of architecture: one meant to create happiness in the city.

Project: Saut de Seine Location: Paris, France Architect: Atelier Zündel Cristea (AZC) Technical info: PVC membrane Picture credits: Courtesy of Atelier Zündel Cristea









Rolling the dice on oceans' mysteries... again

The world has changed fundamentally over the last 520 years. Still, trade winds and chancy vessels, which were once the only assets of Christopher Columbus in making his serendipitous discoveries, are now used again in a similar venture across the Atlantic.

In January, American-born and Paris-based artist Max Mulhern released two brightly coloured PVC dice from the quay in Gran Canaria. Dice are considered one of the most compelling symbols of sheer dumb luck, and Max Mulhern decided to explore this belief with his project Aqua Dice.

Each die was specially created by a French naval architect specialised in fishing boats. Composed of eight watertight compartments made of PVC and plywood — each of which inhabits a corner of the die — these peculiar ships are held together by 6 panels representing the six faces of a traditional die. Both constructions are specifically designed to be unsteady and will move and tumble in response to the current.

To keep track of the artwork, students in technology from Normandy custom-built a GPS system that sends out information on the locations of the dice once a day. Their progress can therefore be observed by all those interested. While both dice were about 1,100 miles west of the Canary islands and only about 60 miles away from each other on 7 January, scientists predict that the two floating objects will separate quickly.

The dice set out on their journey along the same path navigated by Christopher Columbus when he was on his way to discover the new world. Columbus's ships, according to Mulhern, "were nothing more than big dice". These modern day sculptures pay tribute to the past while light-heartedly illustrating the monumental role of chance in an otherwise planned and orderly world.

Project: Aqua Dice Location: Gran Canaria, Spain Architect: Max Mulhern Technical info: PVC membrane, plywood structure Picture credits: Courtesy of Aqua Dice











Rethinking the bookstore experience

A brand new bookstore was recently inaugurated in Shanghai. Going by the name of Timezone 8, it includes space for reading, organizing exhibitions or cultural events, as well as a bar.

Hosting all kinds of events in a limited space can turn into a real headache, and making things easier requires a flexible and versatile architecture. Lately, this spatial complexity was at the heart of the design adopted for Shanghai's newest bookstore.

Three cylindrical silos welcome the static features of the bookshop while the remaining space, meant for more spontaneous and flexible purposes, is open and dynamic. Each book silo is devoted to its own theme: photography, art and design. They are all of the same height but can be differentiated by their diameters.

The designers also aimed to create transparency within the space, thanks to specific cylindric constructions at eye level. Altogether, approximately 20,000 cross sections of PVC pipe were used. All this was made possible by design regulations encouraging experimentation throughout the construction process.

But why using silos? For DAtrans, who was responsible for the project, grain silos are symbolic of the architecture of the industrial era. They are essentially modern. Le Corbusier, Becher and other artists also used these functional shapes in their work to signify the modern revolution.

DAtrans is an international research association dedicated to architecture and urbanism. It was founded in 2001 in Berlin, and an ture office was established three years later in Shangai by partners CHEN Xudong and WU Jie. DAtrans focuses on the evolution and mutation of the contemporary cities within a context of globalization. It is strongly involved in the environmental transformation and urban renewal of China.

Project: Timezone 8 Location: Shanghai, China Architect: DAtrans Technical info: PVC rigid tubes Picture credits: Yunhe Huang, Wenjie Hu





Looking through animals

Ask art connoisseurs what is so special about the work of Swiss artist Victorine Müller, and they will probably answer with a simple word: immersion. Each artwork, encased in a seemingly weightless PVC structure and often depicting that of an animal, is an ode to reflection and sensitivity.

Victorine Müller's presentations are very much oriented around a spiritual or emotional dynamism where her presence inside the air-filled creature often emits a tangible aura — breathing animistic energy into the beast she inhabits.

This unusual medium fosters a thorough and almost halcyon contemplation from viewers, with each piece being created to impart abstract ideas and somewhat invisible forces. One example of her compositions is 'Timeline', a performance that took place Lucerne, which by itself manages to give a clear definition for most of her work. The piece is best described by the deployment and occupancy of a monolithic transparent elephant, illuminated by natural and powered light. crossed, in its bowels — she manages to exude a certain spirit and alertness akin to the living beast itself.

The remainder of the exhibition sees the artist lay the sculpture on its side to display it in a completely contrasting state — sleeping, or even perished, a state she manages to embody just as acutely.

Project: Elephant Location: Lucerne, Switzerland Architect: Victorine Müller' Technical info: Inflatable transparent PVC Picture credits: David Aebi, Dimon Egli, François Charrière

With the animal in the upright position for the beginning of the showing — and Müller sitting calmly, with her legs





Wonderful Viny







When future meets nature

Your everyday building may not be suitable for an event on the future of housing For Danish architects Kristoffer Tejlgaard and Benny Jepsen, this required a piece of architecture capable of fuelling the debates.

When conceiving a building as a reflection of what the future holds, aspects such as energy consumption, design, materials and practicality cannot be ignored. Conscious of this challenge, Danish architects Kristoffer Tejlgaard and Benny Jepsen wanted to do more than providing the necessary space for the event to take place in Bornholm, Denmark.

The 'People's meeting dome' is in essence a deconstructed geodesic dome with a mathematically-conceived and structurally-efficient shape. A geometric wooden frame, composed of small triangle units, allows for differently-sized sections to be extruded, scaled, pushed and pulled to accommodate the event's programme as needed. All spaces structurally behave in the same manner and allow for a column-less structure with small niches, crevices for seating and a stage.

The building envelope consists of translucent greenhouse membranes covering the sphere surfaces, as well as transparent PVC membranes replacing windows on vertical surfaces. The wood used for the façade, flooring and interior is locallygrown Douglas pine. Since the project was temporary, reclaimed wood was favoured.

By splitting the shape of the dome, Tejlgaard and Jepsen created niches at the entrances that were oriented towards the access to the site, providing indirect lighting. The dome welcomed a stage, placed in a niche, and the stands were placed in the open centre of the dome where out-side light coming in generated additional focus on the stage and a great sense of intimacy.

The dome was commissioned by BL, the interest organization representing about 700 housing associations and managing almost 20% of Denmark's dwellings.

Project: People's meeting dome Location: Bornholm, Denmark Architect: AKristoffer Tejlgaard and Benny Jepsen Technical info: Transparent PVC membrane Picture credits: Courtesy of Tejlgaard - Jepsen