

## The Shanghai Expo: Austria Day Puts Spotlight on Architecture Revolutionary Pavilion by SPAN & Zeytinoglu

*On May 21, the Shanghai Expo will focus on Austria. "Austria Day" will once again throw the spotlight on the pavilion designed by the Vienna-based architects SPAN & Zeytinoglu. The building is the product of computer-generated design based on natural and evolutionary processes.*



The Austrian pavilion is among the five most popular in Shanghai. It has been praised for its combination of dynamic and harmonic designs and for its mixture of futuristic and poetic elements – as well as for the references to the host country.

Foto: © Matias del Campo

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The most efficient systems are created by nature itself – evolution takes care of that. What naturally occurs over extremely long periods of time can today be quickly simulated using sophisticated computer programmes. Such programmes were first applied for architecture by the Vienna-based offices SPAN & Zeytinoglu in designing the Austrian pavilion. *“Evolutionary developments have long been a part of our design process,”* says SPAN’s Matias del Campo. *“We control them on a computer defining specific parameters. Even intense forces – environmental factors such as sunlight, wind currents, or the way sound waves move across a space – become parameters for digital simulation, which is to say key factors in creating specific forms.”* An example of the impact of such parameters is the entrance area to the pavilion, which is organically incised into the body to provide protection from the sun and wind.

### **Digital Models**

SPAN & Zeytinoglu worked exclusively in digital during the design phase. The computer-generated models have proven to be essential tools in coordinating the architects, technical experts, and building firms. The construction of a primary steel structure was planned with a diagram generated on a computer in intervals of 60 centimetres.

*"A 3-D scanner was used at the construction site to ensure that the digital model corresponds to the actual building,"* explains Arkan Zeytinoglu. *"Periodic control checks ensured precision during the process of turning the design into reality."*

### **Continuous Flow**

In order to transform the digital models into a building, the architects have made use of technical expertise from the field of topology, which addresses complex curved forms. *"The geometry of nature flows directly into the design,"* explains Sandra Manninger from SPAN. *"This allows us to seamlessly connect spatial elements to one another."* This can be seen in the organically floating form of the exterior epidermis and also applies to the interior with its continuous flow between the spaces, and the interaction between expansive and narrow areas. The separation of floors, walls, and ceilings disappears; in the restaurant, the floor dovetails with the ceiling. The concept of topological surfaces is rigorously applied in the various scales of the project, meaning that the interior design elements – also by SPAN & Zeytinoglu – simultaneously follow the rules of topological bodies.

### **Porcelain Façade**

The continuous condition is additionally reflected in the cladding of the outside skin that is encased in no fewer than ten million porcelain tiles, showing subtle gradient colorations between red and white. Thus, the pavilion awakes associations to a baroque Du Paquier vase. The reference to porcelain is an element which links Austria to the Expo's host country: The manufacture of porcelain originated in China, while Austria is one of the oldest manufacturers in Europe. The surface also refers to a lineage in Austrian architecture dealing with the idea of ceramics as exterior skin of a building, such as the "Majolica House" by Otto Wagner or the "Shrine of the Book" by Frederick Kiesler. High-tech was again applied to optimise the size of the modules, in creating the nuance of the colours, and in the laying of the tiles. Scripting and parametric modeling led to the choice of small hexagonal components with a diameter of 2.5 centimetres. They regularly distribute the tensions in the façade and guarantee an even distribution of colours.

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**Matias del Campo and Sandra Manninger are in Shanghai from  
May 19 to 23, 2010. For interviews, contact: [sonja.paschen@juicypool.com](mailto:sonja.paschen@juicypool.com)**

## Architects

**Matias del Campo**, born in 1970 in Santiago, Chile, studied architecture at the University of Applied Arts Vienna. Since 2003, projects, exhibitions and publications in collaboration with Sandra Manninger under the label SPAN. Several awards and prizes, 2008 curator, ABB Architecture Biennale Beijing. Since 2008, visiting professor of architecture design at the Dessau Institute of Architecture.

**Sandra Manninger**, born in 1970 in Graz, studied architecture at Vienna University of Technology. Numerous projects, exhibitions and publications in collaboration with Matias del Campo under the label SPAN. Several awards and prizes for the architecture designs of SPAN. Since 2008, visiting professor of architecture design at the Genetic Architecture Studio, ESARQ, Barcelona.

**Arkan Zeytinoglu**, born in 1968 in Klagenfurt, studied architecture at Graz University of Technology, followed by 5th Year Design Studio at the Cooper Union in New York. General planner for private and state clients in the field of architecture and interior design, concept and realisation of innovative hotel and resort projects in Austria and other countries. Since 1995, office in Vienna. Partner offices in Vienna and abroad.

[www.span-arch.com](http://www.span-arch.com) / [www.span.vox.com](http://www.span.vox.com)  
[www.arkan.at](http://www.arkan.at)

### **SPAN & Zeytinoglu: Austria — Feel the Harmony The Austrian Pavilion at the Shanghai Expo 2010**

project management	Alexander Jarau
Project team	Oliver Bertram, Jakub Bräuer, Cornelia Faisst, Manfred Hermann, Regina Kiem, Adam Vukmanov
builder	Austrian Chamber of Commerce
location	stand-alone pavilion in zone C (near Lupu bridge)
planning commences	2008
construction commences	2009
completion	2010
site area	2,314 sqm
footprint	1,834 sqm
total surface area	2,227 sqm
building contractor	Alpine Mayreder Construction Co.
client/user	EXPO Office Austria
local design institute	Shanghai Xian Dai Architectural Design Group
statics	Thomas Lorenz ZT GmbH, Graz
HVAC designer	Ingenieurbüro Lakata GmbH, Villach
electrical planning	EPG Elektroplanungs GmbH, Spittal/Drau
construction physics	Vatter & Partner ZT KEG, Gleisdorf