

Vitra Design Museum

Ecological lightweight constructions: Building a dome made from bamboo poles Architecture workshop run by Professor Jörg Schlaich Domaine de Boisbuchet (France), July 30 – August 05, 2006

In cooperation with the Centre Georges Pompidou and the Centre International de Recherche et d'Education Culturelle et Agricole (C.I.R.E.C.A.), the Vitra Design Museum organises a series of workshops run by internationally known architects, designers and artists. The courses take place at the Domaine de Boisbuchet, an idyllic country estate in the Southwest of France.

During the week July 30 – August 05, 2006 we will offer a workshop run by the famous German engineer Professor Jörg Schlaich. The theme of the workshop is the design and the construction of a dome made from bamboo.

Ecological lightweight constructions: Building a dome made from bamboo poles

Based on the icosahedron and a combination of six and five corners, as familiar to us from the football, Buckminster Fuller further developed the geodesic dome into a light spatial structure, which can be covered with plexiglass or transparent glass (the most well known being the US-Pavilion at the Montreal Expo, in 1967).

Even lighter and less complex domes can be manufactured according to the "salad sieve principle", which has an evenly spread quadratic meshing, by hoisting up a meshed network which one can then spatially flex according to design and such that its meshed angles are altered. This well known principle, one recalls the material tents of the Nomads or the Olympic tent roof in Munich (1972), was further developed by Frei Otto and brilliantly demonstrated by the grid shell of the big Multihalle in Mannheim of 1975 and constructed of simple wooden slats.

Based on this principle, by using steel poles braced by ropes Jörg Schlaich and his team constructed numerous, very light grid shells covered with glass (e.g. the Museum für Hamburgische Geschichte Hamburg, in 1989 and the Central station – Lehrter Bahnhof, Berlin, 2006).

In the workshop, the history of shell construction will be recapitulated and, at the same time, a grid shell geometrically designed, replete with an elliptical floor plan measuring 7,5m / 5,3m and 3m high, made of bamboo poles and covered with an appropriately tailored tarpaulin – homage à Frei Otto, the great master and inspirer of modern ecological lightweight construction.

For this, the bamboo poles with a mesh width of approx. 50 centimetres, cut exactly to the right length and placed on the ground, must be flexibly attached at their pin-joints – a detail which has yet to be developed. Similarly, the correct cross-section size of the poles must be tested in such a way that, on the one hand, they do not break when hoisted while, on the other, they are not so thin that they buckle later – in short, an experiment which fully engages our faculty of imagination and artistic skill even though it is by no means certain whether we will succeed. If it should fail, then we shall have at least learned a great deal whereas, if we do succeed, we shall be rewarded with a beautiful and exceptionally light dome of which we can at once take possession and bequeath to future workshops for further use.

The one week workshop will cost € 645 for students (with valid student ID) and € 845 for all other participants. The fee includes the tuition fee, all materials, boarding (full board) and lodging. Further information can be found at www.boisbuchet.org

Vitra Design Museum

Or contact us directly:
Vitra Design Museum
Silvia Gross
Charles-Eames-Str. 1
D-79576 Weil am Rhein

Tel. +49-7621-7023574
Fax +49-7621-7024575
Silvia.Gross@design-museum.de
www.boisbuchet.org