Bus-Shelter Canopy "Parapluie"

2012 - 2013
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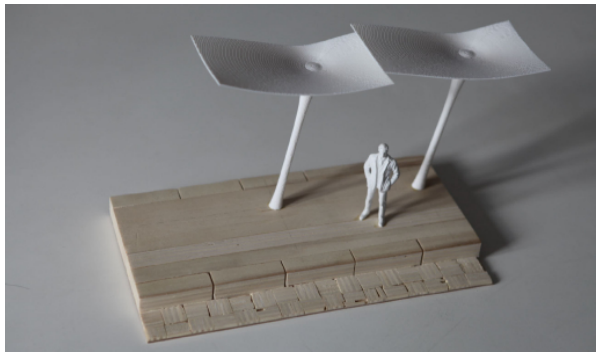
The bus-shelter canopy “Parapluie”, designed for serial production, consists of an extremely thin fair-face concrete shell entirely devoid of built-in steel elements with a plate depth of only 2.4cm at its edges. A tipped conical-shaped element provides support at a single point, located away from the centre of the shell. The decision was taken to employ asymmetry in combination with dynamic three-dimensional free forms, developed and optimised using a parametric computer program. The aim was to create a roof element as thin and light as possible, yet one with an excellent load-bearing capacity. By means of a parametric shape-finding process, a system was developed that allows loads to be distributed almost exclusively within the tensile surface of the membrane - like a rolled-up piece of paper in one’s hand. The clue to this was selecting the right materials: a micro-reinforced high-performance concrete with stainless steel reinforcement equally distributed over the cross-section. This material offers the greatest possible ductility and has excellent load-bearing capacity, allowing an approximate linear elastic analysis of the supporting structure. The design development work was carried out in close cooperation with the engineers …



schneider+schumacher

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Bollinger+Grohmann and DUCON Europe.

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