



WORLD WIDE WEAVE

Pioneering sun protection façade

The École Polytechnique Fédérale de Lausanne (EPFL) is widely acknowledged as one of the finest universities founded anywhere in the world over the last 50 years. As a result, it is also among the fastest-growing universities with space requirements to match. In order to do justice to its reputation in an architectural sense too, the institution consistently invests in iconic constructions for required new buildings and refurbishments. The latest evidence of this approach can be found in the extension of the existing Institute for Mechanical Engineering (ME) designed by Dominique Perrault, which was merged with the Centre for Neuroprosthetics (CNP) founded in 2008. A three-dimensional zig-zag façade consisting of horizontally sliding solar protection elements made by GKD – GEBR. KUFFERATH AG lends the *Pôle de bio-ingénierie* its unique appearance.

State-of-the-art offices, seminar rooms and laboratories over 3,000 square meters lay the foundations for interdisciplinary research. Perrault met the various energy requirements with an unusual implementation of the four-story façade. A total of 630 individual panels, each measuring 1,100 x 3,600 millimeters, form a vertical and horizontal zig-zag pattern spanning the entire building. The panels are alternately affixed at the top and bottom and are made of natural-colored, anodized Escale aluminum fabric from GKD, which is fixed in place by means of a stable frame construction using clip bolts. The panels are arranged in groups of three, two of which are motorized and move on rails behind the fixed element in a telescopic manner. When they are closed, the panels guarantee efficient solar protection, free workplaces from the glare of the sun and grant unhindered views of the outside surroundings.



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However, the open structure of the fabric also allows natural daylight into rooms and enables natural ventilation, thus making the building a pleasant environment for employees. This in turn increases productivity and minimizes energy requirements for artificial light and air conditioning. The concept demonstrates its holistic sustainability through the flexibility of the elements: the panels can be adjusted on a room-by-room basis in accordance with the utilization of the room and the various times of the year. What's more, the fabric used has a special visual appearance, consisting of spirals measuring seven millimeters wide and 150 millimeters long. These reflect sunlight particularly intensively and lend the panels a light quality despite the solid nature of the material. This effect makes them the perfect means with which to express Perrault's intention to design a building without visible walls. Thanks to its visually subtle fastening means, the finished façade reminds the viewer of a fragile house of cards. This experimental character is in contrast to the sophisticated design of the metallic shell – a dynamic interplay at the interface of life sciences and engineering, the ***Pôle de bio-ingénierie***.



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