

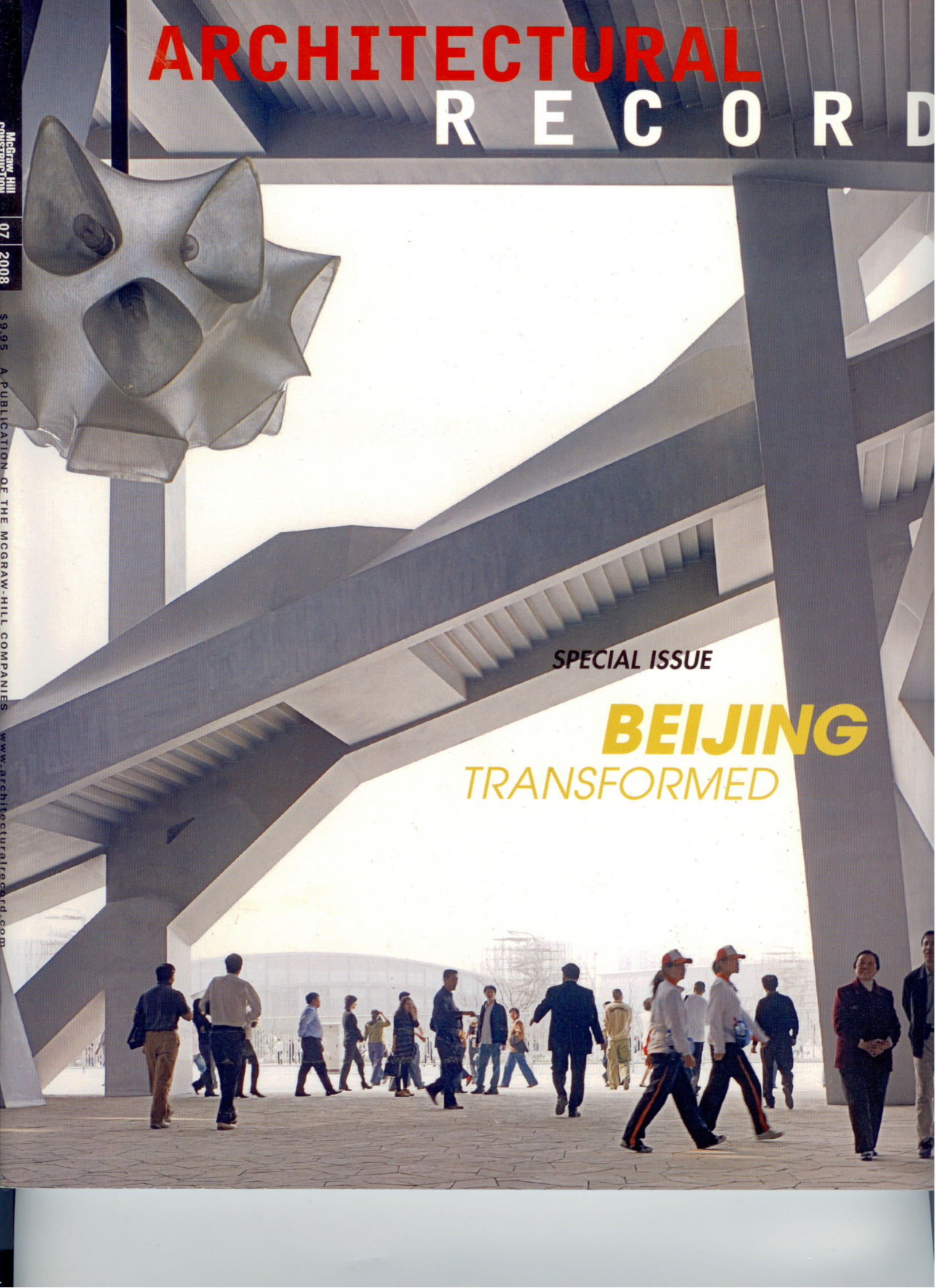
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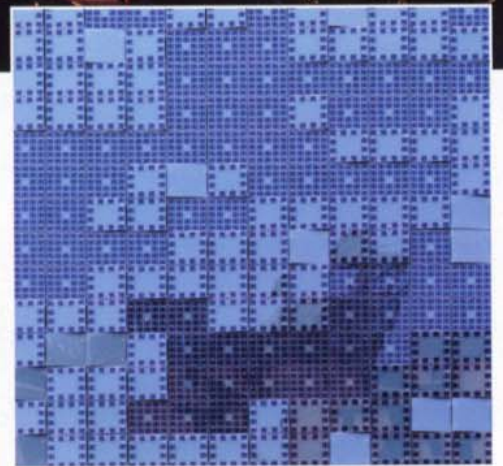
SPECIAL ISSUE

BEIJING TRANSFORMED



Snapshot

The envelope illuminates at dusk. Solar panels are scattered irregularly across Greenpix's surface (bottom), providing a balance of shade and sunlight during the day.



A green screen for Beijing

By Sebastian Howard

"On one end is very sophisticated technology," says architect Simone Giostra of his new project, Greenpix, "and on the other end is the poetic factor, which is as important as the science." The Zero Energy Media Wall, as it is also known, encloses Beijing's Xicui Entertainment Center, which contains a spa and a mini-golf course, among other diversions. The facade, designed by the New York-based Giostra, is both window (as a glass curtain wall) and display (as a collection of 2,400 LEDs). Its massive size requires the screen to be viewed from far away, rendering it an evolving part of a rapidly changing landscape.

The project, developed in concert with two German photovoltaic firms, Schüco and Sunways, is carbon-neutral, says the architect. Solar energy collected during the day fuels a massive, frenetic, multicolored display at night. Arup helped Giostra engineer the system, which uses laminated polycrystalline embedded in the curtain wall.

The Zero Energy Media Wall was plainly influenced by previous large-scale LED displays—Jim Campbell's

Snapshot



A rendering (left) shows a dancer moving across the facade. A detail of one entrance (below) illustrates the varying density of the PV panels.

installations and realities: united's Kunsthaus in Graz come to mind as predecessors. But the architect says that he also drew inspiration from 19th-century Pointillism, as well as Gerhard Richter's seascapes that show the effect of sunlight throughout the day. Like a Seurat painting, Greenpix is low resolution, composed of just 2,400 LED pixels, compared with something like 500 times that number found on a computer screen. And, as in Richter's works, the Media Wall constantly reacts to the changing sun and wind.

Greenpix responds to prompts from the environment, visitors, and artists. A highly flexible computer program with three distinct display modes controls the screen. Currently, the screen displays preprogrammed clips authored by video artists; it also operates in "simple interactivity," where an infrared camera translates human movements into an abstract visual. Eventually, the system will produce sophisticated images generated by input from the pressure-sensitive glass panels. The speed and direction of wind striking the curtain wall will create a fluid, reactive display. And there are plans under way to allow visitors to show their own movies and messages on the screen—sure to be a hit in the YouTube era.

"Because of the LEDs and software we are using, the facade can react in real time, with dynamic content," Giostra notes. The Zero Energy Media Wall "can be specific to very local conditions. The upper left corner of the facade will react to wind pressure that is different from the lower right corner." The mammoth, psychedelic displays, then, are unique to a single moment in a certain part of one city. This is the building incorporated into its environment; it is intelligent architecture.

Ultimately, the project serves as high-profile proof of renewable energy's potential in a country that has come under criticism for its environmental practices. Giostra concedes, "The building is not all about efficiency. We like to be in the convergence between innovation and efficiency." More significant than its sustainable credentials, Giostra says, is that "the architect is not just producing the hardware, but also the software and the content. We are suggesting a new role for the architect." ■

