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by Julie Sinclair Eakin

A Gleam in the Eye

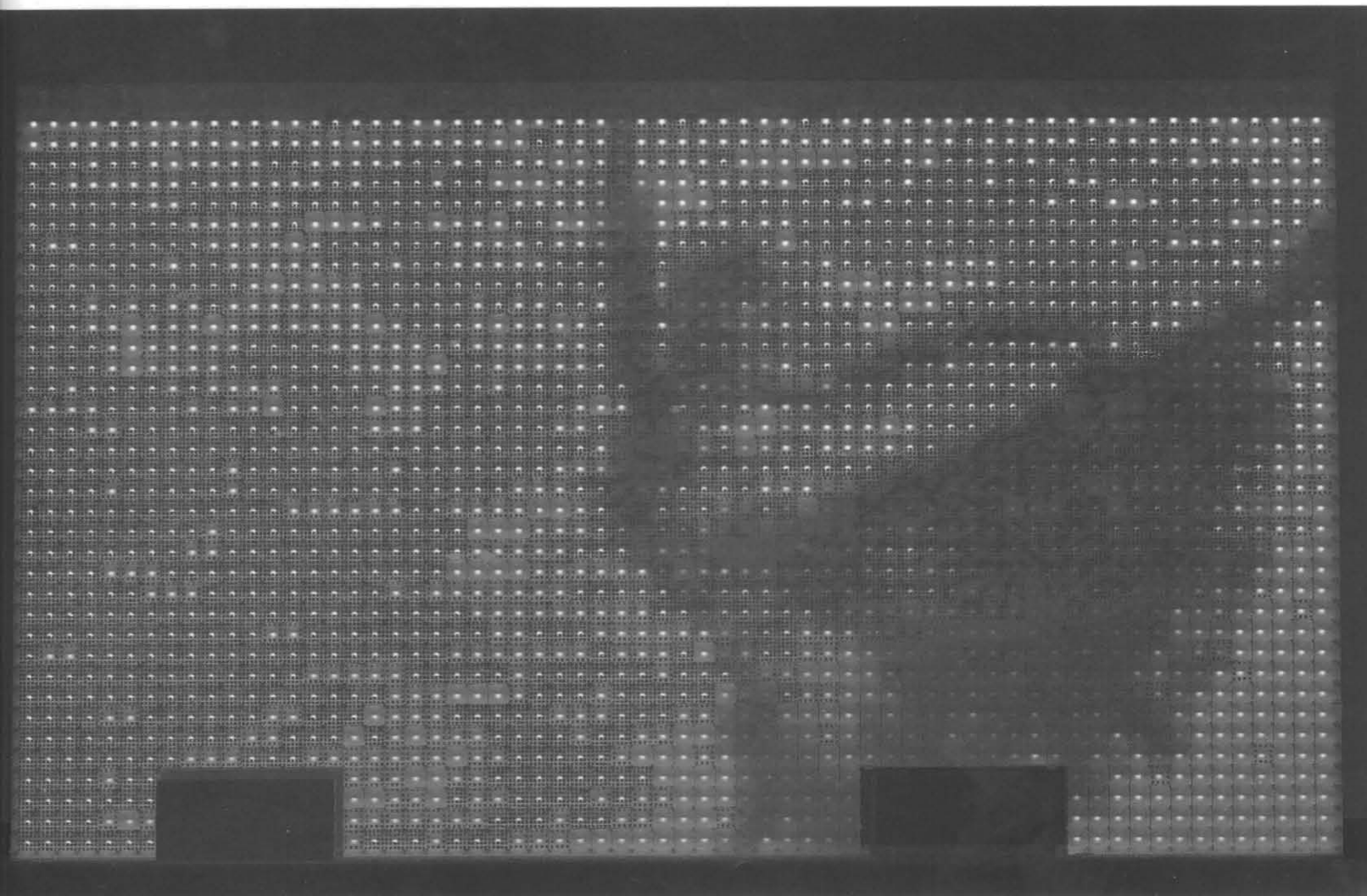
China makes room for an energy-efficient media wall.

Based in Brooklyn's DUMBO neighborhood, Simone Giostra has been constructing curtain walls over 15 years while working as project architect on buildings by Richard Meier, Raimund Abraham, Steven Holl, and Alvaro Siza. But never before has he designed a wall at such a scale (enormous), in such a place (China), and in such a way as to store solar energy by day and use it to generate excitement after dark. Giostra's media wall, which is currently being tested for an entertainment complex in Beijing, is a building-size canvas that employs photovoltaic and interactive media technologies to paint a changing visual experience in light.

The building, which has been occupied since August, is located in the western part of Beijing near the site for baseball and basketball games in the 2008 Olympics; it currently houses a movie theater and high-end restaurant. Giostra was charged with enlivening the opaque, box-like structure's presence and connecting it to its environs, all via a single 20,000-square-foot

facade. Because the site faces a major artery, 90 percent of those who encounter the building will see it from their cars as if approaching an enormous billboard. So the design concept grew out of the need to project information to a wide range of distances. The wall will showcase low-resolution LED imagery, both to conserve energy and to help communicate the abstract visual quality Giostra seeks (he cites artists Gerhard Richter and Jim Campbell as inspirations).

The projections on the facade will change frequently—from digital works implemented by invited artists to user-generated content, like a graphic representation of where people are located inside the building, as indicated by the heat their bodies emit. The design's essence, however, is its technological self-sufficiency. The facade will behave like an organic system, says Giostra, by mirroring a day's climatic cycle, first absorbing solar energy and storing it in batteries and then generating light from the same power that evening, without supplements. He describes



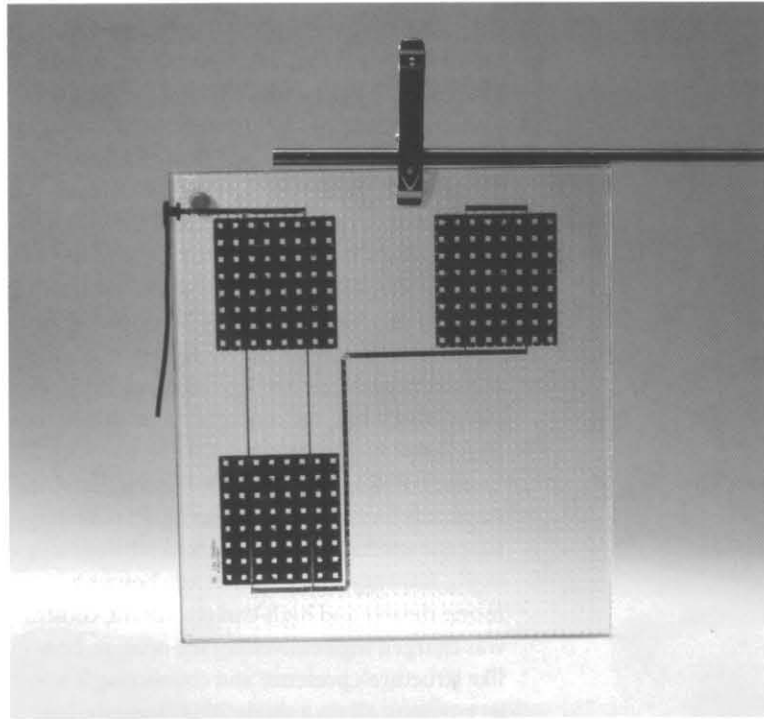
the system as self-supporting, efficient, and narrative, one that conveys an ongoing story about the surrounding light and weather conditions.

Giostra began looking at seascapes as an example of an ever-changing visual experience. (The building is surrounded by a 20-foot-wide moat-like water element.) He then translated some of the images into digital patterns to form a compositional template for his wall. Rather than communicating depth by adding physical dimension to the facade, Giostra chose to accept the characteristic flatness of a screen wall and make the media work to express its message. He broke this rule only by tilting some of the wall's meter-square panels 5 degrees to simulate the flickering light on an ocean's constantly undulating surface.

This project, scheduled for completion in June, represents the first time perforated photovoltaics laminated in glass have been used on a building in China. A combination of three different textured panels (the roughness prevents reflection) in low-, medium-, and high-transparency glass, will be employed together to create what Giostra describes as a "continuous carpet" of flowing design measuring 7 feet in depth, including space for maintenance. A layer of translucent diffusers behind the photovoltaics will blur the points of light transmittance and increase the illuminated area within each panel, heightening the abstract visual quality.

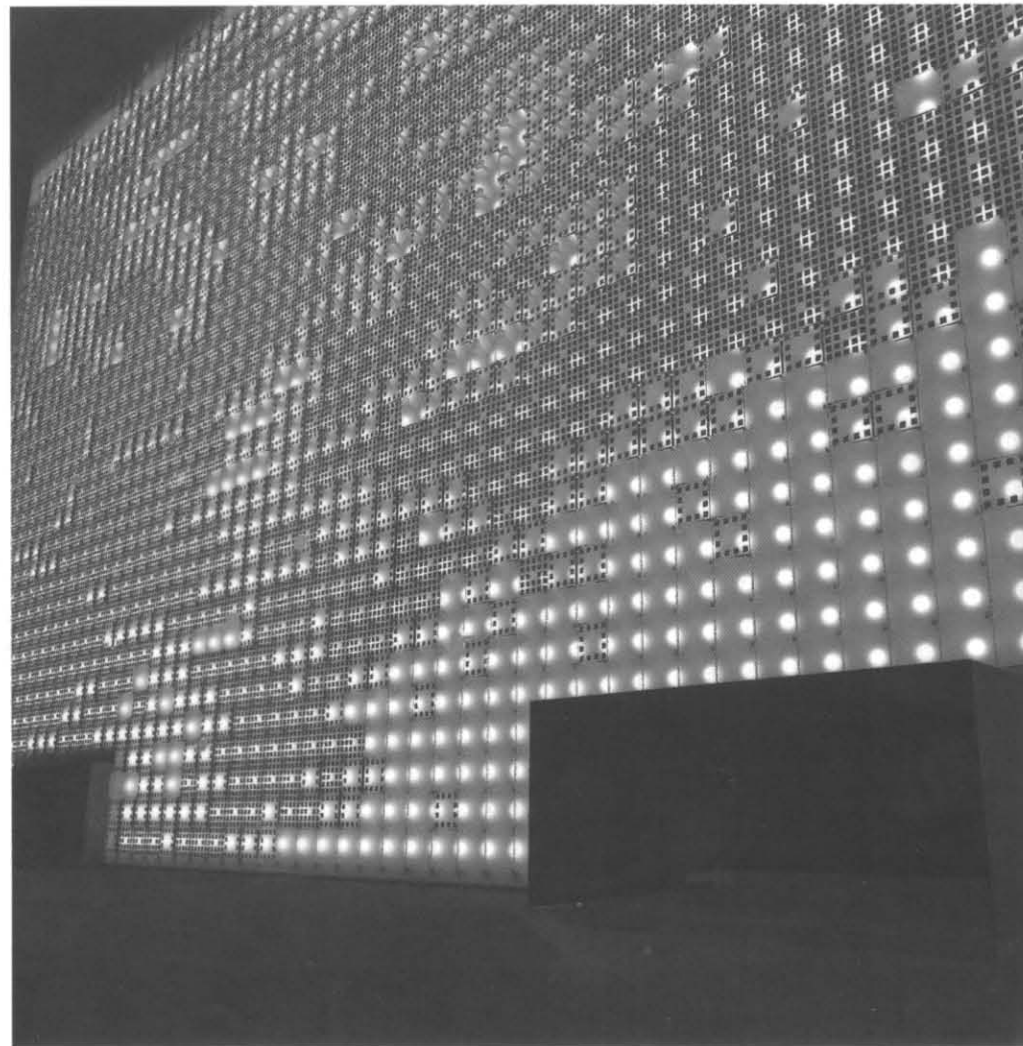
Giostra believes that fusing digital technology with environmental action and reaction represents a new way to address content in architecture. This manner of integrating media into a built form, rather than simply applying lights to a surface, will result not in static design, he foresees, but in a living system. "Twenty years ago we used two lines to represent an exterior wall on a drawing; today we like to think of curtain walls as systems of 20 lines or more," he says, indicating the increasing depth, both physical and metaphorical, of such constructions. For Giostra, the complexity is an honest way of reflecting the reality of building in a global era.

New York-based Julie Sinclair Eakin is a former senior editor of Architecture magazine.



Left Photovoltaics laminated in meter-square glass panels compose the energy-efficient media wall Simone Giostra designed for an entertainment complex in Beijing.

previous page and below Solar energy is transformed into illumination at night. The wall will display commissioned digital artworks and user-generated content, such as patterns determined by the amount of heat emitted from people inside the building.



节能媒体幕墙登陆中国

西蒙的设计工作室设在纽约布鲁克林区的班柏（DUMBO 的音译。这个区位于曼哈顿大桥的下方）。过去的 15 年中，西蒙曾先后在理查德·梅尔、雷蒙·亚布拉罕、史帝文·霍勒、阿勒瓦罗·西亚等著名设计师的项目中担任项目设计师，负责幕墙的建设。但是，西蒙还从未在中国设计过如此规模的节能型幕墙：日间幕墙积蓄太阳能；夜幕降临后，能量释放呈现绚丽图像。目前，西蒙正在测试这个采用光电和媒体互动技术的设计。这个覆盖整个楼宇立面的幕墙将用于北京的一个娱乐中心。

这个娱乐中心位于北京西部的五棵松奥运场馆对面，在 2005 年 6 月已经开业。目前，楼内有有个影院和高档餐馆。西蒙需要依靠一个 20,000 平方英尺的幕墙使这个目前呈封闭状况的火柴盒式建筑变得生动，与周围环境发生联系。因为楼宇正对交通干道，90% 途径的人会从车里看到它，就像看到一个巨型的室外广告牌。因此，最初的设计理念是要将信息投射到立面上，让人们可以从不同距离获取。这个幕墙采用底分辨率的 LED 成像，可储存能量并呈现抽象的视觉艺术作品。西蒙说他是受到 Gerhard Richter 和 Jim Campbell 等艺术家的启发。

幕墙上的影像会经常更换：既包括受邀艺术家的电子视觉作品，也包括由楼内走动人员身体散发的热能所产生的影像。设计的精髓在于技术的自给自足。幕墙如同一个有机体，反映出气候的变化周期：首先吸收太阳能，将其储存在电池中，以便在夜间用于放光，不需要外界其他能量补充。西蒙介绍说这个幕墙系统自给自足、高效、而且可以生动反映周围的光线条件和天气状况。

设计初期，西蒙认为海景是一个持续变化的视觉体验。（楼宇由 20 英寸宽的水渠环绕）接着，他将一些图像转换成电子图案，形成了幕墙的基本模板。但西蒙没有选择增加幕墙的物理纬度来显示海景的深度。他接受了屏幕墙平板的特点，将深度的概念转由幕墙上的影像来传达。唯一的例外是立面上的一些一平米的板块可以挑动 5 度，在波涛起伏的海面上造出跳动的光线。

这个工程计划在 2007 年 6 月完工。这是中国第一座采用叠有打孔光电组件玻璃的建筑。西蒙将幕墙比作一个“完整的地毯”：深度为 7 英尺（已包括维修空间）将采用的三种纹理不同、透明度分别为底、中、高的玻璃板块。光电组件背后的一层半透明扩散点模糊了聚光点，扩大了单个板块明亮度，提高了抽象视觉图像的质量。

西蒙认为将电子技术与周围空间的动静和反馈相结合是建筑界处理建筑内涵的新方法。这样将媒介和建筑结合会产生一个有生命的系统，而不是简单把灯光打在建筑表面只能产生静态的设计。西蒙这样描绘这个设计在物理和象征意义：二十年以前我们用两根线在图纸上表示建筑的外墙；现在，我们更多时候是把幕墙看成包括 20 多根线组成的系统。对西蒙而言，复杂之处在于在一个全球化的时代忠实地反映出建筑真实状况。