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# If These Walls Could Respond

technology

A new kind of architecture reacts to the human movement within it.

By crafting spaces that allow only certain movements or behaviors, designers have long played the role of social engineers. Witness New York's Central Park or postwar Corbusian housing blocks, both intended to "purify" urban dwellers. At the Parsons School of Design, students of visiting instructor Beatrice Witzgall's Architectural Intervention Collaboration Studio have completed a final project that responds to users as well as subtly influencing them. The installation rearranges itself—and the surrounding space—in response to human movements and traffic patterns.

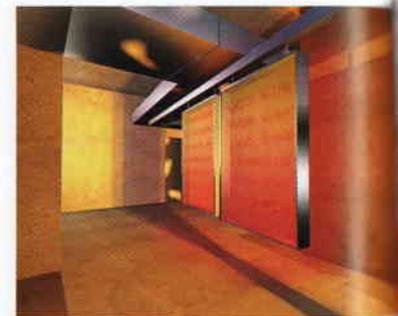
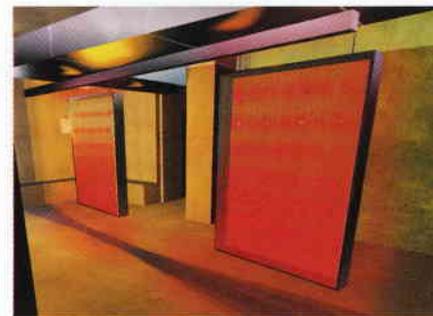
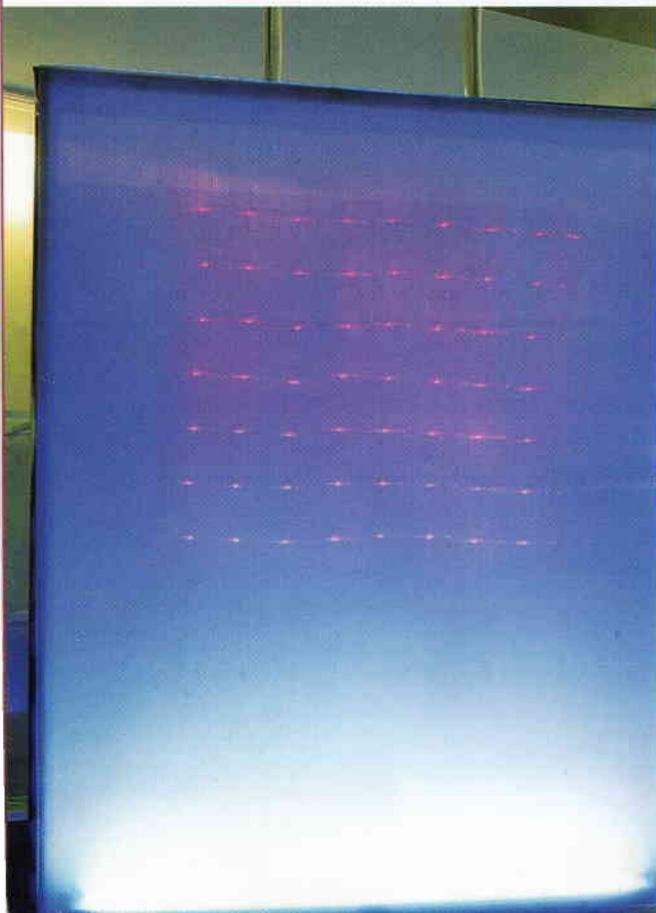
In the lobby of the school's Design and Tech-

nology department, Witzgall's students mounted two deceptively simple polycarbonate panels, donated by Polygal, into a garage-door track in the ceiling. They sit side by side, partially blocking passage between the lobby's elevator and the hallway beyond. When someone approaches, embedded sensors trigger the panels to move toward the perimeter walls. These temporary walls remain parted during periods of high traffic, and return to the center of the lobby when there is none.

"We've talked about these two panels as characters wanting to belong," says Jennifer Wheatley, who is studying multimedia and broadcast design

graph the volume inside: the X-axis represents time; the Y-axis marks the activity level. Bright-line lighting systems donated fluorescent fixtures, which create an ambient color wash that is programmed to change throughout the day with the class schedule.

Witzgall, who has been developing this "responsive architecture" in collaboration with the MIT Media Lab since 2000, criticizes architectural vocabulary for being slow to adopt technological innovations. Despite the buzz generated by computer-aided design, "information technology is still considered an additional layer, not something



**Parsons students transformed their lobby with walls that change configuration depending on activity in the room.**

at Parsons. "When somebody's there, they get out of the way. They're very nice." Unlike something as passive as automatic supermarket doors, however, the installation in turn affects people's behavior. As obstacles, the panels force users toward the sides of the lobby during low traffic times, allowing passersby to discover seating and exhibition spaces that they may otherwise have walked past.

The very nice panels also react to cues other than lobby gridlock. Each includes 128 LEDs linked to microphones in the department's two computer labs. The LEDs light up within a grid to

that can reconfigure space according to how people occupy it," she says.

After the Parsons installation comes down, Witzgall has more responsive architecture to build. She is working on a proposal for New York's Union Square subway station and a design-build project with former MIT Media Lab associates. However, redefining social engineering takes time. "The technology mostly exists," Witzgall says, "but people need to develop an understanding that it can escape its virtual identity and develop physical presence. Technology can recognize people's behavior, activity, and movement—and it can change the way people communicate, interact, and inhabit a space." —David Sokol

Left, Damian Chadwick; others, Beatrice Witzgall