

## Dream Cube

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The 2010 Shanghai Expo is up and running, featuring pavilions that represent the cultural and commercial ideas and ambitions of more than 200 countries and organizations. We'll provide you with an in-depth overview in our next issue, but for now, a look at the Shanghai Corporate Pavilion created by ESI Design.

**Concept.** When the Shanghai corporate community approached the design team at ESI, they had a theme for their pavilion in mind—"My City, Our Dreams." The idea of working together to achieve greatness inspired ESI's designers, who wanted to create an environment where working together paid off.

"We wanted to run with that idea of collaboration. Weaving collaboration throughout the entire experience was key," says ESI Design project writer Debra Everett-Lane.

Dubbed the Dream Cube for its incredible exterior, the pavilion is both distinctive and unusual. An elevated interior form that includes a covered escalator, exhibit space, and a theater sits as if it is hovering inside a 360-degree frame, made of a latticework of LED tubes that create the cube. About 127 layers of color-changing LED tubes encase the experience in the middle completely (that's millions of color-changing LEDs, folks).

The Shanghai corporate community wanted to communicate their love for the city and the message of sustainability and cooperation. ESI's design for the pavilion was inspired in part by fourth-century Chinese philosopher Zhuangzi's Butterfly Dream.

In the story, Zhuangzi dreamt he was a butterfly, then suddenly woke up and didn't know if he was Zhuangzi who had dreamt he was a butterfly, or a butterfly dreaming he was Zhuangzi. This idea of shifting perspectives and the theme of transformation became central pillars of the design.

During the Dream Cube experience, virtual butterflies become the symbols of people's dreams for Shanghai's future.

"It was a very important inspiration for us in developing the experience as a whole," Everett-Lane says.

The visitors helped to create the media that forms a central part of the Dream Cube experience via photos that were submitted to a webpage and are used as graphics inside the pavilion.

**Design.** The 40,000-square-foot public experience uses advanced multimedia and building technologies to demonstrate a powerful message: Through collaboration, the people of Shanghai and the corporate community can create a better city with better lives for everyone.

The experience starts in the queue area, underneath the Cube's main structure. LED tubes hang above visitors as screens run a program detailing the Cube's history and Shanghai Corporate messaging.

At one point in the video, visitors are encouraged to clap their hands. When they do, microphones detect the sound and change the LED colors in the queue area in response.

“You have this great, immediate interactive experience where you’re changing the look of the ceiling directly above [the queue]. It gets visitors into the collaborative mindset and lets them know this is not going to be a passive experience,” Everett-Lane says.

Visitors enter the structure via an enclosed escalator and are surrounded by ambient blue lighting and music.

The first section of the pavilion is inspired by Shanghai’s parks. Over 1,000 thin acrylic poles mounted in the floor vary in thickness and height, simulating reeds or blades of grass. At the base of each pole is a high-powered LED linked to video, and cameras in the ceiling sense when visitors touch them or come near and react with a color change.

The result is colors washing through the reeds like wind through a field.

Floor-to-ceiling LED walls are mounted behind a screen, which diffuses the LED and serves as a surface for high-definition projection. LCD screens in front of that work in conjunction with the other two media layers, creating a true multimedia experience.

“It’s an immersive sense of depth that surrounds you on all sides,” Everett-Lane says. Further along in the Cube, visitors move into the New Shanghai area—a whirlwind of user-generated media, signage, and moving lights.

“It’s both abstract and realistic at the same time, and it gives you a sense of being in Shanghai today,” Everett-Lane says.

Once visitors explore the urban imagery, a screen opens to reveal a hidden door into the 360-degree theatre. Inside, 16 high-definition projectors are edge-blended to create a seamless media presentation around the room, which features more LED poles in the ceiling.

An animated video, including a 360-degree flyover of the city shot in high-definition, includes a description of the Dream Cube itself and its sustainability. Solar energy elements, recycled rainwater, and the external façade made from recycled materials are among the project’s many green attributes.

The big payoff is the last collaboration by the visitors.

As visitors move along to the commands in the video, they realize their movements and sounds in the theatre are controlling the color changes of the LED tubes that comprise the entire exterior façade of the Dream Cube.

“It’s the same effect as in the queue, but multiplied by a thousand. They are controlling the entire look of the cube, and it’s something they don’t realize before the experience begins,” Everett-Lane says. A live video feed shows the visitors inside the theater the effect outside. Paper fans distributed to visitors to keep cool in the queue at the outset of the experience are printed with UV images of a butterfly, which are revealed in the last part of the theatre show when UV lights are switched on and they discover that the butterflies have followed them all the way through the Cube experience.

“The hope is that when they leave they have a sense of optimism that by working together they can make their own dreams become a reality,” Everett-Lane says.