A Building Made of Water
New Digital Water Pavilion Named One of Year’s Best Inventions

MIT architects and engineers have designed a building made of water, its liquid curtain walls programmed to feature digital imagery and to sense an approaching object and part automatically to let it through. Time Magazine recently named it one of the best inventions of the year, along with three other SA+P inventions—the City Car from the Media Lab’s Smart Cities Group, Nicholas Negroponte’s One Laptop Per Child and Hugh Herr’s Robotic Ankle.

Initially conceived and developed in a Smart Cities workshop at MIT led by Bill Mitchell and Dennis Frenchman, with Michael Joroff and Carlo Ratti, the Digital Water Pavilion was designed at Ratti’s firm in Torino and will be unveiled at an international exhibition in Spain this year, Expo Zaragoza 2008, located at the entrance near a new bridge by Zaha Hadid.

The water walls that make up the structure consist of a row of closely spaced valves along a pipe suspended in air. The valves can be opened and closed at high speed, producing a curtain of falling water with gaps at specified locations—a pattern of pixels created from air and water instead of points on a screen; the entire surface becomes a one-bit-deep digital display that scrolls downward continuously. Equipped with suitable sensors, the water walls can also detect your approach and part like the Red Sea, allowing passage at any point.

The pavilion illustrates the potential of digital water as an emerging building material. ‘The dream of digital architecture has always been to create buildings that are responsive and reconfigurable,’ says Ratti. ‘Think about spaces that can expand or shrink based on necessity and use. It is not easy to achieve such effects when dealing with concrete, bricks and mortar. But this becomes possible with digital water, which can appear and disappear.’

MIT Ranked #2 Among US Architecture Schools
A Sign of the School’s Ongoing Revitalization

According to Architect Magazine, MIT has been ranked #2 among graduate schools of architecture in the United States, reflecting the significant revitalization of the school’s design programs in recent years. In 2007 and 2005, MIT was ranked #4; in 2006, #8; and in 2004, #5.

Tremendous changes in the school have been spearheaded in the past few years by Dean Adèle Naudé Santos, appointed in 2004, and architecture department head Yung Ho Chang, appointed in 2005. Under their leadership, a number of new faculty have been hired—including, most recently, tenured professors Rahul Mehrotra and Nader Tehrani, two very highly-regarded practitioners and educators—and in the spring and fall of 2008 the department will welcome still more high-profile architects/scholars to the faculty. Meanwhile, a new curriculum for the Master of Architecture program is being implemented this year and the architecture department’s other degree programs are also being reexamined and refined.

The ranking reported in Architect was the result of a poll that surveyed 130 offices of architectural firms, 46 deans of architecture schools and 740 students. The participating firms included many of the country’s leaders who, collectively, employ more than 100,000 people.

Unlike traditional fountains, the water wall technology uses very thin streams of water so the throughput needed to create large surfaces is remarkably small. The water is, of course, recycled and very carefully managed to minimize leakage losses.