Walls you can walk through

Architects and engineers from the Massachusetts Institute of Technology (MIT) have designed a building with walls made from water.

The Digital Water Pavilion, which will be featured at Expo 2008 in Zaragoza, Spain, will have walls of water sprayed from thousands of computer-controlled jets. They can be programmed to show images or messages, and even parted so a person could walk through.

"To understand the concept of digital water, imagine something like an inkjet printer on a large scale, which controls droplets of falling water," Carlo Ratti, head of the MIT's Senseable City Laboratory, said in a release.

The roof will be supported by large pistons that can move up and down. It will be lowered when it's too windy, or when the pavilion is closed. The structure will disappear, and the roof, covered with a thin layer of water, will resemble a pond.

The walls, exterior and interior, will be formed by a row of closely spaced valves placed along a pipe suspended in the air. The valves can be rapidly opened and closed, producing a curtain of falling water with gaps at specified locations.

It's like a pattern of pixels created from air and water, instead of illuminated points on a screen, MIT said. "The entire surface becomes a one-bit-deep digital display that continuously scrolls downward."

There have been previous attempts to digitally control water droplets, but MIT said its plan is the first to create walls.

The pavilion, which will measure 10 metres by 50 metres by five metres high when the roof is completely raised, will contain a cafe, exhibition area and public space. It will cost $3 million US.

It fits with the theme of the Zaragoza exhibition, water and sustainable development.