



## Making a splash: MIT's Digital Water Pavilion opens at Zaragoza

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By **Emily Cadman**

An MIT building with walls made entirely of water will go on display this week at the Zaragoza World Expo in northern Spain, the theme of which is water and sustainable development.

High-speed computer-controlled solenoid valves generate the water walls, which are programmed to take on varying shapes and display different patterns, images and text.

The only solid element of the building is the 400mm-thick roof which rests on moveable pistons that move up and down depending on wind conditions. The roof can also be flattened into the ground so that the building disappears.

In all, the building contains 3,000 digitally controlled solenoid valves, several dozen pumps, 12 hydraulic stainless steel pistons, and a digital control system that uses open source software.

"The design for the pavilion grew out of the central challenge of how to make fluid, reconfigurable architecture," said Carlo Ratti, head of MIT's Senseable City Laboratory.

"Our building aims to stand as a possible answer to this endeavour."

He added: "The Digital Water Pavilion illustrates how buildings of the future may change their appearance and form from moment to moment, 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."

The concept of a digital water wall was initially developed and prototyped by the Smart Cities group at MIT's Media Lab, and its application at Zaragoza was explored by an MIT design studio.

The building itself was designed by Ratti's Turin-based firm, Carlo Ratti Associati – comprising Ratti and partner Walter Nicolino – and engineered by Arup, with landscaping by Paris-based landscape architect Agence Ter.

The Zaragoza World Expo runs from June 14 to September 14 2008.

## Readers' comments

- **Arjun** 15 June, 2008

What possible "necessity and use" could a building such as this have for the future? Is the water fresh or is it salty? If it is fresh, then as a citizen of the planet, I'd like to remind better uses than for buildings. Instead of concrete, is it not possible to incorporate more trees with buildings. The disadvantages are too few in number. Advantages, almost limitless. I would like to suggest "growing buildings", wherein plant is brought up right from a seed to a tree(grows with the building, in the concrete).This was just an idea.

- **Vibek** 15 June, 2008

thats amazing, it's it's out of imagination, a house whose walls are made of water, That's really fantastic.

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