IM Interview

Walls Made from Liquid Pixels

Tracy Staedter chats with Carlo Ratti, director of the SENSEable City Laboratory at the Massachusetts Institute of Technology about digitizing 3-D
Ratti focuses on how digital technology can create new types of public spaces -- in this case, a pavilion with walls of water that tease passers-by to come and play.

imtracynotstacy: Hi
8:23 AM

carloratti: hi!

imtracynotstacy: Great. Let's start!
First, tell me where you are.

carloratti: ok
i am in the Digital Water Pavilion in Zaragoza

imtracynotstacy: Spain

carloratti: yes

imtracynotstacy: and what's going on in Zaragoza?
8:29 AM

carloratti: Zaragoza is the site of the World Expo 2008 (International Exhibition). It started in the middle of June and will continue until mid-September.

imtracynotstacy: And what's the point of the World Expo?

carloratti: It started in London in 1851, if I am not wrong. People in North America are probably familiar with Montreal Expo 1967. Some Expos are 'universal' as they say. Others, such as Zaragoza, are thematic. The theme of the Zaragoza Expo is water.

8:33 AM

imtracynotstacy: And what was your motivation for participating in the expo?

carloratti: we were invited to do some designs at the Expo. This is part of a larger scale collaboration between the city of Zaragoza and MIT on the next urban development in Zaragoza, called the Digital Mile. This was initiated by Bill Mitchell at MIT, former head of the School of Architecture and Planning, and Mayor Belloch in Zaragoza

imtracynotstacy: I would like to hear more about Digital Mile, but first, tell me a little more about what you designed and built for the expo.

8:39 AM

imtracynotstacy: could you give me some examples?

8:39

carloratti: Yes, digital and interactive public spaces. You might recall the interactive bus stop we designed. Then

carloratti: This is a mile-long new urban development in the city center. It became available after Zaragoza's Big Dig -- i.e. moving the railway line underground

imtracynotstacy: and what does the "digital" part mean?

imtracynotstacy: The idea is to create a 'space of innovation'. Our focus was on how digital technology could create a new type of public spaces.

imtracynotstacy: More Listings »
students propose many ideas - from intelligent parking to memory paving and aerated pixels. you can find a
review at www.milladigital.es

imtracynotstacy: those sound way cool.....memory paving! liberated pixels!

carloratti: Thanks!
Bill initially came up with the idea of using water in new ways. Thinking about water - that in the meanwhile
had become the theme of the Expo -- and digital technology led to the 'digital water wall' concept

imtracynotstacy: so what is the digital water wall concept?

carloratti: Creating an interactive wall, where one can control pixels made of water, almost the way an inject
printer controls pixels of ink, but on a massive scale

imtracynotstacy: so how is the building like an inkjet printer?
8:43 AM

carloratti: there are 3000 solenoid valves

imtracynotstacy: along the roof?

carloratti: yes... they open and close and control drops of water (water pixels) as they fall

imtracynotstacy: so the falling wall of water has a pattern?

carloratti: yes, it can display patterns, text, images, etc.
also, there is row of sensors, so that when you approach the wall, it opens and closes

imtracynotstacy: are you in the pavilion now?

carloratti: yes, in the pavilion!

imtracynotstacy: what pattern is in the wall of water now?

carloratti: there are segments that move horizontally. People love them as they can play with them and try to
intersect them as they move
8:46 AM

imtracynotstacy: how?

carloratti: difficult to explain in words...
but there is a water curtain with horizontal holes that translate horizontally

imtracynotstacy: are there sensors that allow people to interact with the patterns?

carloratti: yes, in addition there are the sensors
so the walls become like an interactive skin
and people seem to love that

imtracynotstacy: are there people interacting with the wall right now?

carloratti: a few, as it is lunchtime
but at night the place seems to be very crowded

imtracynotstacy: is the pavilion lit up at night?
8:48 AM

carloratti: yes, there are lights in the roof
i would like to make an additional point about the sensors

imtracynotstacy: sure

carloratti: initially the pavilion was designed so that the walls would always open to let people in
no doors, just a material (the water wall) that opens and closes dynamically when needed
however, some of the feedback we got suggests that it is more fun when the sensors are off

imtracynotstacy: really? why?

carloratti: there are just moving 'holes' in the water wall
so that you 'fight' with the machine in order to get in without getting wet
that seems to be more fun than a machine that lets you in seamlessy all the time, thanks to the sensors
8:51 AM

imtracynotstacy: so you have to time it just right to get in?
time your movement
carloratti: if the holes are not too large, YES
i think that some people uploaded a few videos showing this on youtube...

imtracynotstacy: fun...i suppose it must feel a little cooler near or inside the pavilion. Or maybe if you miss a hole and get wet, that must feel good too in Spain in the summer.

carloratti: yes, that's also true
but it probably also says something about two different ways to engage technology

imtracynotstacy: what are those?

carloratti: fighting with technology (in this case: trying to sneak in the pavilion without getting wet) sometimes might be more fun than having technology adjust to all your needs!
8:57 AM

imtracynotstacy: It's an interesting notion, but where else could you apply that concept, do you think?

carloratti: i think that it only applies when there is a lucid component

imtracynotstacy: what do you mean?

carloratti: activities that we would recognize as play
i didn't really think this through... but it seems to me that in the kids' behaviors at night there is a resemblance to playing a 'tangible videogame'
fighting with the big metal monster (the machine-pavilion) in order not to get wet

imtracynotstacy: yes, i can see that!
if's interesting that you stumbled upon this notion when developing the pavilion....that you decided to deviate a little from your original plan. Were you okay with that originally?
9:03 AM

carloratti: yes, we were ok, but it was rather serendipitous... in any case the pavilion can still work as initially planned, it is only a matter of programming

imtracynotstacy: what was so serendipitous about the notion of letting people "fight" with the water wall. do you remember what event lead to the change?

carloratti: i think it was one of the first nights
when we had not connected the sensors yet
we realized that all the kids in town were coming to play with the water wall in a different way
9:09 AM

imtracynotstacy: fun!
do you think you could give me a sense of your environment right now, being in the pavilion? What does it sound like? Smell like? What are you seeing? Are you eating lunch?
9:11 AM

carloratti: a few kids playing with the water wall and screaming
... the light sound of water falling
... some people resting in the shadow under the roof (it is quite cool, because of the water)
... some people getting information at the tourist and Digital Mile Infopoint

imtracynotstacy: Nice. So are you going to be involved with other projects for the Digital Mile?
9:14 AM

carloratti: at the moment we have simply given some general ideas
(as those contained in the report that you can find on www.milladigital.es)

imtracynotstacy: ok. I'll check out.

carloratti: i just wanted to make a couple of final points
9:17 AM

imtracynotstacy: sure

carloratti: our idea about the pavilion is to make responsive and reconfigurable architecture. When the roof is down there is no architecture.
when it is up you have a very large public space.

imtracynotstacy: that's right, the roof lowers to ground level when not in use

carloratti: same with the water: you can move water partitions based on people's presence
if there are more people on one side, you can expand that space
9:19 AM
imtracynotstacy: and so how can that idea translate to other buildings or uses?

carlolati: I think that in the next few years buildings will become more and more ‘responsive’, thanks to the use of new technologies.

imtracynotstacy: and why might being responsive a desirable or important feature?

carlolati: It would allow us to make a better use of space, save energy and other resources and finally better adapt to people’s needs.

imtracynotstacy: I imagine a building being more organic, almost a living thing that shape shifts to accommodate people.
So what are you going to do with the rest of your afternoon?

carlolati: I’ll probably spend it with the discovery channel Canada crew then going out to eat in zaragoza very good local food!

9:23 AM

imtracynotstacy: what have you eaten that you liked so much?

carlolati: In zaragoza I have found some of the best tapas places in Spain.
I also like a rare and very typical dish: migas.

imtracynotstacy: what is it?

carlolati: Bread crumbs fried with olive oil, garlic and mix with raisins or other fruits I had never had anything like that.

9:25 AM

imtracynotstacy: is it a breakfast thing? Or anytime?

carlolati: No, it's lunch or dinner.

imtracynotstacy: sounds yummy.
Ok, well, I'll let you go.
Thank you for taking the time to chat.

9:27 PM

carlolati: Thank you very much! My pleasure...
Let me know if there is anything else that you might need after editing...

imtracynotstacy: ok, ciao

carlolati: (wave)

9:28 PM

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