Wired Bus Stop Makes Waiting Easier

Jan. 8, 2007 — Waiting for the bus can be a dreary, uncomfortable, even baffling experience. Assailed by rain, wind, snow or heat, time drags at an excruciating pace for any passenger wondering when — or if — the bus is on the way.

But a new Internet-enabled bus station being developed by researchers at the Massachusetts Institute of Technology promises to make public transportation's least glamorous mode a more modern experience.

"In our prototype, the standard functionalities commonly found in a bus stop are enhanced and we also introduce of a new layer of digital interactions," said project leader Assaf Biderman, a research fellow in the SENSEable City Laboratory at MIT.

Biderman and his team recently exhibited their bus stop, called the Adaptable Bus Stop, at the Venice Biennale of Architecture and are now refining the design for the 2008 World Expo in Zaragoza, Spain.

The urban shelter will become part of Zaragoza's new bus line, which it plans to launch during the expo.

Unlike conventional bus stops, which are about as static and unresponsive as a metal box, the MIT bus stop is ever-changing.

It starts with a computer program designed by the team. A city official plugs parameters unique to a location—for example, what direction the station will face, the width of the pavement, average volume of passengers, existing shade, etc. into the computer program. The program then generates a structural blueprint for a shelter ideal for that space.

It also produces digital files that drive a machine that laser-cuts customized pieces at a cost almost equal to mass production. In the end, each site will receive an Internet-enabled shelter uniquely sized and shaped for its location — from how large the roof
and bench should be to the direction it should face to offer optimal protection from sun, wind and rain.

Once the structure is built, it can become a digital hub for the community with the ability to interact with passengers.

Each bus stop will send a wireless Internet signal to a neighboring bus stop, creating a wireless mesh network throughout the city.

Each bus will be equipped with a GPS transmitter to send real-time location information to each structure. A touch-sensitive map allows travelers to press a destination and receive advice about the shortest travel route.

Users can beam this itinerary to their cell phone and request a text message notification when the bus is due to arrive.

People can also use the station as an information center by uploading messages, images or announcements to a software-modulated bulletin board.

"It becomes an outpost for local authorities to reach out to communities in the city," said Kristian Kloeckl, an urban furniture design consultant and also Ph.D. student at the University Institute of Architecture Venice.

Though Kloeckl also wondered how the public will respond.

"If you have a wall in a middle of a city where everybody can write what they want, what are they going to write? Will it turn out to be something useful or something annoying?" she asked. "It's not clear."

Biderman and his team hope that their presentation at the World Expo will raise interest from officials in other cities and spread the trend of the Adaptable Bus Stop.

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