

Plan #60

A Living Laboratory in Cambridge

MIT House_n Consortium Introduces the PlaceLab

An invitation-only conference held at MIT this fall introduced participants to a new residential research facility in Central Square called the PlaceLab, designed for the study of people's interaction with new technologies and home environments.

Co-hosted by the MIT House_n Consortium in the Department of Architecture—with its collaborator in the project TIAX, LLC, an independent research company—the one-day conference featured a roster of prominent speakers from government, industry and academia, and included a detailed presentation of the lab, a 950-square-foot condominium near campus.

The development of the PlaceLab was motivated by awareness that the home is rapidly becoming a center for health and wellbeing, learning, communication, energy conservation, entertainment, work and care of our nation's elderly. All these functions will require a host of new design strategies, technologies and services.

But products and services developed and tested in laboratories often fail in the real world because of the complexity of real-world activity. Since behavior in real-world settings is both difficult to predict and difficult to simulate in a laboratory, the PlaceLab has been designed to combine the capabilities of a highly instrumented research lab with the natural environment of a home.

The one-bedroom apartment has literally miles of wire within the walls, and hundreds of sensors integrated into cabinetry-like components to measure light, temperature, humidity and the interaction of people with the environment.

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The architecture and technology was designed by the House_n group, which has research funding from the National Science Foundation, the National Institute of Health, AARP, the Robert Wood Johnson Foundation, Intel, and a wide variety of corporate sponsors.

Participants, recruited in a manner similar to sleep lab studies, typically live in the PlaceLab for several weeks at a time. The lab's designers have gone to great lengths to assure volunteers that their identities will be kept confidential, and all study protocols are approved by the MIT Committee on the Use of Humans as Experimental Subjects.

Residents are informed of the locations of the sensors and have the option of blocking them or deleting data at their discretion before it is seen by any researcher. To insure the security of the data, the PlaceLab sensor network has no Internet connection, and only a small group of researchers will be permitted to visit.

Most of the data will be analyzed at MIT. Researchers are also using the PlaceLab to study how potentially invasive technology can be developed to insure privacy and trust.

PlaceLab's first volunteers moved in for two 10-day periods over the summer as researchers did initial tests of the sensors and other technologies. As research progresses, the lab may host singles, couples and families of different ages for a range of academic, industry or government research projects.

PlaceLab is managed as a shared scientific tool in the tradition of other facilities developed to study unique environments such as undersea vessels, satellites and remote communities in harsh environments like the South Pole. Any academic researcher or corporate sponsor may make an application to a review committee to use the PlaceLab for research.

Among those who have expressed interest in using the facility are researchers in the fields of architecture, computer science, mechanical engineering, nutrition communications, preventative medicine, social anthropology,

public health and product design.

PlaceLab research is co-directed by the MIT House_n group and TIAX LLC. TIAX founder Kenan Sahin is a member of the MIT Corporation, the governing body of the Institute, and was the donor of \$100 million to MIT in 1999—the largest gift in MIT's history.

While the PlaceLab is a laboratory, the House_n group's Opens Source Building Alliance is also designing a single-family home prototype, planned for completion in 2006. That facility will be used to demonstrate a new agile component-based building strategy and its implications for dramatic reductions in energy and resource consumption.

The PlaceLab is a project of the House_n research group, headed by Kent Larson. (Stephen Intille is the Technology Director.) Larson also is Director of Changing Places, a Department of Architecture and the Media Laboratory consortium, and the MIT Open Source Building Alliance, established to develop and test strategies (and ultimately, recommend standards) that will lead to the scalable introduction of new materials, technologies, applications and services into the built environment. He can be reached at 617.253.8799 and kll@mit.edu. For information on becoming a PlaceLab volunteer, send an email to placelab-volunteers@mit.edu.



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