

CASE STUDY

WLAN



EDUCATION

Cal Architecture Students Designing Wirelessly

With over a thousand students, professors and researchers, University of California at Berkeley's College of Environmental Design (CED) is the largest architecture school in the western United States. Noted internationally for its excellence in research and design, the CED can now claim yet another innovative design project: its own wireless network.

Three years ago, the College was relying on an Ethernet network adopted in the 1970s for network access. With the goal of providing high-speed, ubiquitous network access, the CED technical staff devised a plan to drop the existing network and replace it with two branches: an updated fiber cable network and a wireless network. The fiber cable network would serve as the primary network within CED and as the foundation for the wireless network.



The wireless network would provide students and faculty in Wurster Hall, the College's primary location, with convenient, high-bandwidth access to the network.

For the wireless network, CED technical staff considered either an 802.11a network or an 802.11b network. Originally, the staff gravitated towards implementing an 802.11a (54 Mbps) network because of its high bandwidth and ability to handle very large data sets, such as CAD files. Ultimately, however, the staff designed a network of overlapping 802.11a and 802.11b networks because AirBears, UC Berkeley's wireless LAN service, is based on ORINOCO 802.11b wireless LAN technology. While CED staff wanted the enhanced bandwidth of an 802.11a network, they wanted to accommodate students who had already invested in 802.11b technology.

"In a design environment, students do most of their work in studios, but move around classrooms on a daily basis. A wireless network based on both 802.11a and 802.11b offers student enhanced coverage along with the bandwidth necessary to transfer large data files," says Steven Murray, Assistant Dean for Computing, College of Environmental Design.

During a \$35 million earthquake retrofitting, the CED installed the fiber cable and began installing Proxim access points for the wireless network in and around Wurster Hall.

The first phase of installing the wireless network, completed in August 2002, involved the deployment of 27 Proxim Harmony 802.11a and 802.11b access points to provide wireless access in the instructional spaces in Wurster Hall. The second phase, scheduled for completion



in March 2003, will include the deployment of an additional ten ORiNOCO access points to maximize coverage in the instructional spaces. In the final phase, several more access points will be deployed for wireless access in research areas and faculty offices and in the adjacent courtyard. Upon completion, wireless access will be available across the entire geographical area of Wurster Hall, allowing students to access the World Wide Web, e-mail and other network services on their personal machines.

CED's technical staff selected Proxim's platform because of its security capabilities and the centralized management control. "Most universities have network security issues and are prime targets for hackers. For CED, choosing a wireless infrastructure without security would be impossible," says Murray. "With Proxim, we can easily manage a large number of access points. The solution integrated seamlessly with CED's existing ORiNOCO network management system, making network security easier to control. Eventually we plan to implement Proxim's Wireless LAN Manager for even better management."