

A 21ST CENTURY CLASSROOM

Classroom design meets "smart" technology at WSUV, Clark College

BY J. MAURY HARRIS | for the VBI

From the Greek Lyceum to the modern university lecture hall, the evolution of the classroom has been linked to social and economic factors stretching back through the ages. So it comes as no surprise in our own globally-focused, technology-centric world that Washington State University Vancouver and Clark College, like many other higher-learning institutions, continually try to keep ahead of the classroom design curve.

In its latest endeavor, WSUV broke ground last August on a four-story, 56,000-square-foot Applied Technology Classroom building. Slated to open in the fall of 2011, the facility will house a new undergraduate electrical engineering program.

Dave Smith, director of capital planning at WSUV, says the project is intended to benefit students through its specialized facilities, creating a mutually beneficial partnership with local industries and professionals.

"This building is planned to provide a higher level of training for local engineering students and, in turn, a local, skilled workforce for that industry," Smith said. "The smaller facility will, in some ways, also act as a business incubator for the high-tech industry."

The smaller facility Smith refers to is the Washington Technology Center's Semiconductor Component Testing Facility,

a laboratory which would connect to the ATC building and provide access to semiconductor equipment worth between \$2 and \$4 million. WTC is currently seeking federal funding for the facility.

"It will allow theory to be practiced in the laboratory – in those technology-based environments that they couldn't replicate otherwise," Smith said. "It's really extending the classroom experience to the highest levels of those fields."

The ATC building itself is equipped with multiple computer science and engineering technical spaces, radio frequency and power distribution labs, as well as a suite of "clean" rooms with standardized air quality conditions.

"Besides the actual manufacturing plants in the private sector, there are no facilities like the clean room suite available in Southwest Washington," Smith said. "They will provide projects in the higher levels of Nanotechnology and Microscale electronics – areas that require a high level of precision and environmental control."

In addition, a portion of the ATC is reserved for general university use, allowing for other academic disciplines to utilize the space. The general classrooms also house a number of "smart" technologies that, depending on the size of the space, could

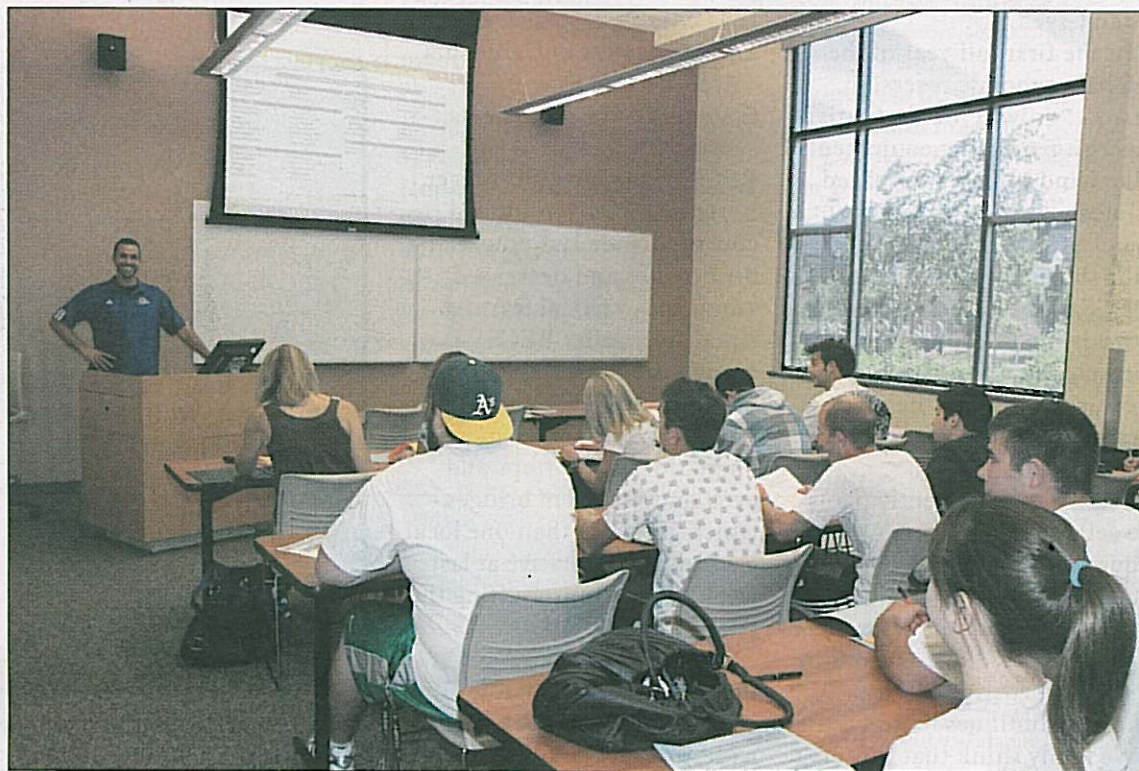


Photo courtesy of Clark College

CTC's classrooms provide built-in wireless Internet access for students, faculty and staff.

include computer interface, flat-panel televisions, interactive whiteboards and displays, multimedia projectors, projection screens or even audio projection.

In total, the ATC and WTC facilities are estimated to cost \$59.4 million.

In January 2006, after constructing a satellite facility on the WSUV campus, Clark College officials implemented similar technological standards for their classrooms in order to keep pace with student expectations.

Phil Sheehan, director of informational technology at Clark College, said that the school's classroom technology often seemed haphazard, with a lack of controls and uniformity. Sheehan helped set goals aimed at integrating technology more effectively and uniformly throughout the Clark College system.

"I would stop short of saying that technology is the key to instruction, but I think it's key to enhancing our instructional

efforts," Sheehan said.

Opening for classes last month, Clark College's 70,000 square-foot Columbia Tech Center (CTC) building provided a blank slate for the school's new integrated classroom technology ethos. The \$30 million satellite facility boasts an IT system completely integrated with the school's main campus, full wireless coverage, a library information commons, "smart" classrooms and laptops for students.

In addition, a state grant



Photo courtesy of Clark College

Clark College's \$30 million, 70,000 square-foot Columbia Tech Center, boasting "smart" classrooms and wind and solar energy generators, opened for classes last month.

funded two small rooftop wind turbines and two photovoltaic arrays to offset energy costs at the CTC campus. Output from the wind and solar technologies are displayed in classrooms, giving students in CTC's power utilities program the ability to calculate energy savings.

The addition of video capturing technology is another Clark College classroom development. Capable of real-time or streaming instruction, the technology positions CTC as the college's focal point for distance learning and continuing education courses.

"In recognizing that students do a lot of their work outside of the classrooms, we're trying to move away from narrow hallways too," Sheehan said. "We've made an effort to create more social learning spaces with wireless access and comfortable furniture – areas students tend to gravitate

and interact outside of formal classrooms."

According to the American Architectural Foundation, adaptability is crucial in the structural design of modern classrooms. In that vein, Sheehan says Clark College tries to create more flexibility in the ways it uses its classroom space.

At WSUV's ATC building, the flexibility concept is present in the use of tables grouped into clusters for team projects, or set in rows for traditional instruction – a model allowing for varied interaction levels and workspaces. "Flexibility is key," Smith said. "Especially for this building, given that the academic programs serve an industry that changes yearly and sometimes monthly."

Technology is also a big variable. Smith says that ATC's equipment could be dated within five to six years. With the building

projected to last 50 years, WSUV has to anticipate and account for constant and dramatic change in the way classes are delivered, according to Smith.

According to Clark College's Sheehan, an over-reliance on technology in the classroom presents its own problems, however. "Technology should never be the end goal in-and-of-itself," he said.

Multifunctional to its core, the ATC building promises to completely redefine the classroom space into a less-fixed model that can accommodate microelectronics instruction or electrical engineering stations.

"I think the idea of providing these facilities that are expensive to build and operate – but essential to supporting an industry – is important to both educational and economical stability," Smith said. **VB**