

Devon Energy Hall: Breaching the Boundaries



OU's new engineering facility is creating the **environment** for collaborative learning envisioned in the college's strategic plan.

By Debra Levy Martinelli

Photos by Robert Taylor

Today's students in the University of Oklahoma College of Engineering increasingly are collaborating across disciplinary boundaries. Over the past decade, the college has implemented a curriculum that melds engineering theory and practice with such crucial life skills as communication, leadership and teamwork. The goal is to produce graduates who are leading citizens and superior engineers who excel in problem-solving, innovation and global competition.

Devon Energy Hall is a tangible expression of this vision for engineering education in both its form and function.

The five-story, 103,000-square-foot, \$30-million engineering and technology facility anchors the southwest corner of Boyd Street and Jenkins Avenue. Its centralized location is convenient to students from both the College of Engineering, headquartered in nearby Carson Engineering Center, and the Mewbourne College of Earth and Energy in Sarkeys Energy Center.

Designed from the ground up as a collaborative learning environment, the building was a major focus of the college's five-year Campaign for Engineering launched in 2002.

"The college's new strategic plan incorporated the adoption of key group-oriented trends in engineering education and research that are well supported by our new facilities," says Tom Landers, now the dean of the College of Engineering and associate dean of research and graduate studies during the planning process. "We didn't have ideal space, so the design process began with an honest evaluation of our needs by a team of college faculty, staff and students."

Classrooms, laboratories, machine shops and other support facilities were scattered across central campus and beyond, to the University's Research Campus to the south and Research Complex to the north. Constructing the state-of-the-art, combination teaching and research facility that would be Devon Energy Hall was key to easing overcrowding and consolidating facilities. The schools of Electrical and Computer Engineering and Computer Science would relocate from Carson and the Engineering Laboratory, respectively, to the new facility.

Once the needs were identified, the question became one of funding.

The underlying thought process dated back to State Questions 680 and 681, enacted in 1998, which allowed Oklahoma's universities to partner with the state's top companies to leverage the skill sets of both sectors. "We looked at companies with similar values as ours, companies that would help us maximize what we already had," recalls Neil Heeney, assistant vice president for development, who spearheaded the Campaign for Engineering. "Devon Energy Corporation is an Oklahoma company and its co-founder, John Nichols, had been a part of the life of OU for decades. We knew that [John's son and Devon co-founder and executive chairman] Larry Nichols was committed to building on Oklahoma's strong roots, which is what we were trying to do as well."

Oklahoma City-based Devon Energy was founded by John and Larry Nichols in 1971 with four employees

Students who study in the classrooms and work in the laboratories of Devon Energy Hall experience an interdisciplinary curriculum designed for a new era in engineering.

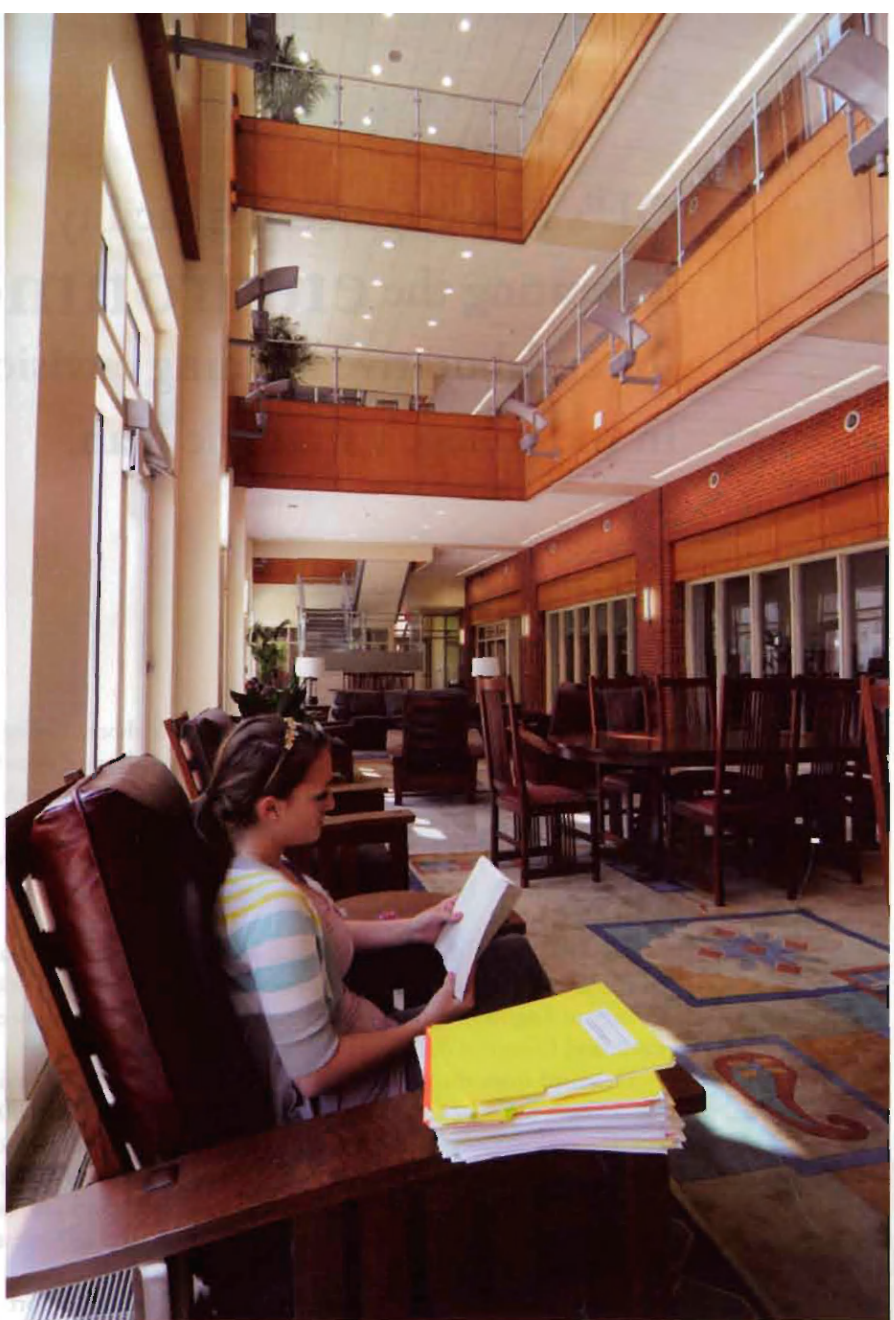
and no oil and gas assets. Now a Fortune 500 company that is included in the S&P 500 Index, Devon is a leading independent natural gas and oil exploration and production company, with operations focused onshore in the United States and Canada. The company also owns natural gas pipelines and treatment facilities in many of its producing areas, making it one of North America's larger processors of natural gas liquids. The company currently is building its new Oklahoma City headquarters, a \$750 million, 50-story tower scheduled to open in 2012 as the state's tallest skyscraper.

In November 2004, OU announced Devon's \$10 million lead gift for the engineering facility that would be named for the company. At the time, it was the single largest corporate gift in OU history.

John Nichols passed away August 3, 2008, before completion of the building. At the January 2010 dedication, Larry Nichols spoke of his father's unwavering commitment to investing in Oklahoma's future engineers and noted Devon Energy Hall's role in that objective.

That vision is carried out through the classrooms, flexible research laboratories, teaching labs, administrative space, forum rooms, study and lounge space, a basement and the fifth-level Nichols Family Terrace, which offers a breathtaking view of the campus. The classrooms employ creative design features that promote group-focused learning activities and interdisciplinary teamwork, and also encourage intimate dialogue with invited outside speakers from industry, government and academia. Students from the College of Engineering and the Mewbourne College of Earth and Energy are joined by students from other colleges across the campus learning in these classrooms.

Plans are moving forward for completion of a solid-state electronics laboratory, designated for photolithography—a process used in micro-fabrication of complex integrated circuits—which must be the cleanest of the clean. “The micro-patterning involved in fabricating tiny semicon-



The comfortable atrium in Devon Energy Hall, described as bright and breezy—“a happy place”—has become the new gathering area for engineering students from all areas of the college for informal study sessions or just for friendly interaction.

ductor components has to be completely free of dust particles, which can be mistaken for the components,” explains James Sluss, director of the School of Electrical and Computer Engineering. “Everyone in the lab will be required to wear full clean room ‘bunny’ suits, and booties to cover their shoes.”

That includes undergraduate students. “We have a fantastic undergraduate student body,” he adds. “As juniors and seniors, they are capable of performing research at a very high level. The opportunity to gain laboratory experience will even better prepare them for careers.”

Connecting all of the labs, meeting rooms, classrooms and other spaces (and additional ones that have yet to be named) is an open atrium on the first floor that provides a gathering space for informal study sessions or friendly interaction in a comfortable setting.

The atrium is Devon Energy Hall's primary gathering spot and is Sluss's favorite space in the building.

“As soon as we moved in, I noticed that the atrium, in particular, all of a sudden was filled with students of all disciplines,” he remembers. “The College of Engineering has never had a central meet-



LaFawn Biddle placed a working drilling rig model, from the office of her late husband, Wayne T. “Dusty” Biddle, in Devon Hall. The Biddies have been major supporters of OU causes campuswide.

ing place like that before. It is just great to see them all together in one space.”

ECE senior Golnoosh Kamali noticed the same phenomenon at the end of the spring 2010 semester. “Devon is a bright, airy, breezy building,” she says. “It’s a happy place.”

“The feedback so far is that open collaborative spaces are working the way they were intended, that is, places where students bump into one another. They may not be doing the same things, but they can still interact,” Sluss relates.

Sridhar Radhakrishnan, director of the School of Computer Science, says the same is true for faculty. “The closer proximity to other faculty and students within the college makes me feel more connected to my students and colleagues,” he says. “I am energized by these interactions.”

Throughout the building, engineering and computer science disciplines are deliberately integrated. On a single floor, solid-state electronics researchers may be working next to computer scientists who may be located adjacent to digital signal

Devon Energy Hall—bottom to top

Basement

- Model shop, IT service center and building mechanical/electrical

1st Floor

- Computer Science and Electrical and Computing Engineering administrative offices
- Bill and Gayle Parker Executive Conference Room
- Wayne T. “Dusty” and LaFawn Biddle/John and Mary Moore Classroom
- Jon and Rebecca Bayless Digital Design Lab
- Hitachi Computer Science Lab
- Stover Family Seminar Room
- Team room
- Lounge and public areas

2nd Floor

- Computer Science faculty offices
- Robert and Gail Hughes Group Classroom
- Samson Resources Software Laboratory
- ConocoPhillips Forum
- Dorothy Grace Barkow Team Room
- Ray Collins Team Room
- ConocoPhillips Team Room
- Patrick L. Foster Team Room
- Martin Jischke Landing
- Research laboratories
- Study spaces

3rd Floor

- Electrical and Computer Engineering faculty offices

- ConocoPhillips Landing
- Research laboratories
- Tom and Mary Dugan Forum
- Charles and Carol Foster Team Room
- Hutlas Family Team Room
- Ken and Edie Purgason Team Room
- Carl and Suzie Baerst Team Room
- Study spaces

4th Floor

- Electrical and Computer Engineering faculty offices
- ConocoPhillips Atrium
- Research laboratories
- Forum
- Astellas Team Room
- ConocoPhillips Team Room
- Team room
- Team room
- Study spaces

5th Floor

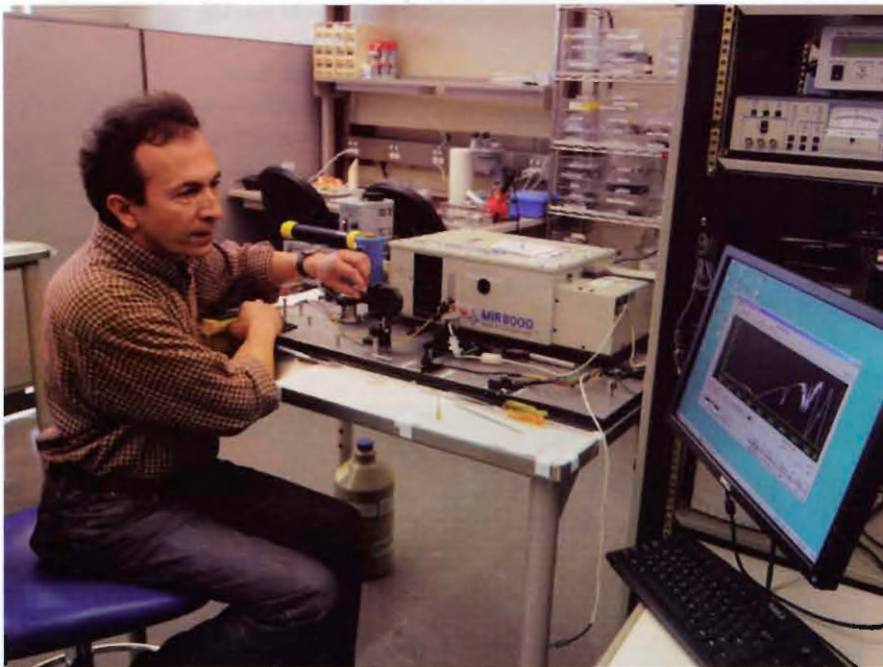
- Optical and solid state labs
- Open lab seating
- Joe Peerson Team Room
- W. Arthur “Skip” Porter Team Room
- Jack and Tess Sleeper Team Room
- Paul and Donna Witt Team Room
- Technician workshop/office
- Nichols Family Terrace
- Research laboratories



Larry Nichols, left, Devon Energy co-founder with his late father, John, visits the Nichols Family Terrace atop the new Devon Hall with mother Mary and wife Polly.



Sridhar Radhakrishnan, director of the School of Computer Science, far left, and James Sluss, director of the School of Electrical and Computer Engineering, standing, confer in a computer lab designed for interdisciplinary collaboration.



In one of Devon Hall's new labs, ECE research scientist Namjou Namjou-Khaless operates an infrared spectrometer, which is used to identify chemical constituents in a gaseous sample.

processing experts. In this interdisciplinary environment that is a hallmark of Devon Energy Hall, they can easily share information and help one another overcome scientific obstacles. "Sometimes you don't even realize you have a problem until you bring people together from more than one discipline," explains Sluss.

"Good things can happen from that."

It is not much of a stretch to contemplate Devon Energy Hall as the site of interdisciplinary collaborations beyond engineering. Kamali notes that in just one semester fellow students in other fields have discovered the many charms of Devon Energy Hall. "A lot of people

seemed to have found out about it and migrated over," she says. "But I don't mind sharing."

"Sharing" certainly is a word that can be applied to the numerous alumni and friends of the college who embraced the concept for Devon Energy Hall and stepped up to lend their financial support.

"Engineering alumni are very practical and very giving. They give out of affection for the College of Engineering and an affinity for the students," Heeney explains. "In Devon Energy Hall, we wanted donors to be able to tell the story of why they made those investments so that when students see the forum rooms, the team rooms, the classrooms, they know that these facilities were largely made possible by individuals who 10, 20 or 30 years ago were just like them. And 10, 20 or 30 years from now, when today's students see the names on these doors, we want them to think, 'Shouldn't that be me? Shouldn't I be giving back?'"

That message already resonates with ECE graduate student Jordan Kuehn, who earned a bachelor's degree in computer engineering from OU in 2009. While he is not yet in a position to contribute financially, he is showing his pride in the college and its amazing facilities by landing the 2010 national conference of electrical and computer engineering honor society, Eta Kappa Nu, at OU (beating out such engineering powerhouse schools as the University of Illinois and Purdue University). The bulk of the conference, scheduled for November 5-7, will be held at Devon Energy Hall and the adjacent ExxonMobil Lawrence G. Rawl Engineering Practice Facility.

The theme of the conference is "Engineering in a Multidisciplinary World." Intentional or happenstance, there is no better spot to explore that topic than Devon Energy Hall.

Debra Levy Martinelli is principal of LevyMart Public Relations in Norman. She writes freelance articles for Sooner Magazine.