Philanthropist Peter O'Donnell Jr., left, joins a group of University of Texas professors in the Visualization Lab, where images generated by a supercomputer are projected onto a 10-foot high, 180-degree screen for a virtual-reality experience. The images in the background can be viewed in 3-D with special glasses.

If you Build it they will ...

Professors get a feel for the state-of-art auditorium – complete with Dolby Digital surround sound – at the ACES Building in July.
Call them playrooms if you like, but the hope is that the gadget-packed rooms at the ACES Building – the University of Texas' newest research center – will attract talent and foster synergy to rival hot spots such as Stanford and MIT.

"Everything about this building is the biggest and the best," said Kurt Bartelmehs, who oversees the center's technology. "It's all state-of-the-art and will stay that way."

The high-tech haven at 24th Street and Speedway – estimated at $36 million to $38 million – is UT's, thanks to the ingenuity and generosity of its No.1 donor, Peter O'Donnell Jr. A high-profile advocate for education with a low-profile personality, the Dallas investor devised a plan that let him put his O'Donnell Foundation money toward his dreams for Texas' future. The result is the Applied Computational Engineering and Sciences Building, an interdisciplinary research center where user-friendly technology rules.

In this wireless society, laptops can be quickly put to work and connected to the world from anywhere, including just outside the building, where a courtyard and outdoor fountain are expected to be popular work sites. These connections are more than high-speed. They are at super speeds. For example, transferring an 83-megabyte file between computers within the building takes only 13 seconds. The same file transfer via a standard 28.8K modem would take seven hours.

Surface-mounted raceways and cable trays were installed throughout the building so telecommunication cables could be upgraded without ripping out walls and ceilings. Such a nod to the future extends to the fourth floor – an unfinished 30,000-square-foot shell primed for expanding departments.

ACES' show-stopper is its Visualization Lab, where images generated by a supercomputer are projected onto a 10-foot high, 180-degree, cylindrical screen for a virtual-reality experience. One of O'Donnell's favorite spots is the auditorium, with Dolby Digital surround sound, an enormous presentation screen and high-speed Internet connections and power outlets at each of the 196 seats. An interface system designed by Bartelmehs...
allows for easy control of presentation tools such as DVD players, video-conferencing cameras and projectors with simple one-button commands using touch screens.

Almost everything electronic in the building is connected to the Internet and can be controlled remotely through a Web browser. An overhead projector will e-mail Bartelmehs if a lamp goes out. His pager will be alerted if components are disconnected.

There are some creature comforts, too. An interior designer coordinated carpets and furnishings to create an atmosphere conducive to long hours. There's a kitchen on every floor, with a side-by-side refrigerator, sink and microwave. An on-site cafe operated by the dining pros who created Jeffrey's begins serving Sept. 15 from 7:30 a.m. to 7:30 p.m. Besides the indoor and outdoor seating, to-go food will be available from a trailer on Speedway. For special meetings, food can be served in the private dining room. Large plasma flat-screen monitors for presentations and TV-watching are throughout the building, including the cafe.

"Everything about this building exudes class," Bartelmehs said.

That's one reason UT-Austin President Larry Faulkner declared the 179,436-square-foot center be available university-wide rather than used exclusively by the departments within. University meetings with a technology focus can be held in the building by reserving a spot online. Food can also be ordered this way.

Before O'Donnell's offer to bankroll the project, UT had proposed a $60 million Digital Sciences and Engineering Building for interdisciplinary research that would bring together many departments scattered across campus. But with no money or available site, the project went nowhere until
O'Donnell and Peter Flawn, UT president emeritus and a friend of the investor, offered a solution.

"We came up with the idea that we could short-circuit the whole process by leasing him the footprint of that space there and letting the O'Donnell Foundation build this facility. He was determined it would be a showplace for the new technology and was willing to put the resources into that," said Flawn, who serves as a $50,000-a-year consultant to the O'Donnell Foundation.

O'Donnell envisioned a spot where mingling is the goal, and a conversation over coffee and freshly baked pastries among the 300 graduate students, 70 faculty members and 36 visitors inside could turn into breakthrough scientific discoveries to increase UT's visibility. The computer sciences and electrical and computer engineering departments share the facility with the Texas Institute for Computational and Applied Mathematics.

"That building can help us bring talent and develop talent," said Faulkner.

In a letter transferring ownership, O'Donnell said the building is "intended to give UT-Austin the edge in recruiting outstanding faculty and graduate students. The building's most important product will be excellent graduate students."

During the 18-month construction, O'Donnell guided every step, some faculty grumbled that he ignored their wants – such as making space for undergraduate classrooms – and built only what he wanted. Now, though, that talk has quieted.

"A year from now the process will be forgotten and the building will be there," said J Moore, a computer sciences professor.

"Perhaps one of the most impressive things about O'Donnell's attitude toward the building was the amount of time he personally devoted to it," Moore said. "He could have thrown his money over the wall and said: 'Build me a building,' and instead he basically designed and built the building. It was a hands-on thing for him from beginning to end."

Although O'Donnell wanted to do "everything we could to make it successful" during construction, it's up to UT now, O'Donnell said.

"We can't micromanage the thing," he said. "We're trying to provide an outstanding facility, and we are counting on them to provide the faculty and the graduate students ..."

Though the numbers are still being tallied, estimates for O'Donnell's contribution are likely in the $30 million range. The university's portion is believed to be about $6 million for equipment and some furnishings. Lucent Technologies, which donated an estimated $800,000 to $1 million in LazrSPEED multi-mode fiber optic cabling, made the ACES Building its nationwide testing ground for its innovative wiring.
The value of the O'Donnell gift will set a standard from now on, said Tinsley Oden, director of the University's computational mathematics institute, TICAM.

"Rather than focusing on particular research projects, Mr. O'Donnell's priority is to make sure that the work we're doing ends up being of the very top caliber and ends up having a concrete impact on industry and the economy of Texas and the United States," said Benjamin Kuipers, chairman of the department of computer sciences.

With success keyed to such tangibles as video projectors, screens and computer networks that enable researchers to stay innovative, upkeep of the high-dollar equipment is an issue with plenty of unknowns even now, Bartelmehs said.

As an example, projectors are used widely throughout the building, and their halogen lamps are expensive to replace. Depending upon the kind of projector, each lamp costs anywhere from $550 to $6,000. Bartelmehs estimates it will cost $24,000 to change out the building's projector lamps each year. Lamps for the Visualization Lab alone will cost about $20,725 a year, he said.

"We're good to go for a year because of the warranties and contracts and varying pieces of equipment that are good past that time," Bartelmehs said. "But it is going to require some money to keep the place state-of-the-art."

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