

Greening of a campus: UT-Houston takes holistic approach

By Cindy A. Adams
Special to Houston Business Journal

Known worldwide for its progressive medical technology and care, Houston's sprawling Texas Medical Center complex may soon be recognized as an oasis of environmentally friendly, or "green," building as well. A series of projects at the University of Texas Health Science Center's six-school campus embodies a holistic approach to sustainable design, construction and resource conservation.

From site-specific economies of energy use in new buildings to remodeled older structures with healthier, more user-friendly environments, from the installation of solar photovoltaic arrays to an Urban Ecology Research Park, from rainwater and graywater collection to earthworm bins that recycle food waste into fertilizer, the UT team is putting its all into green research and development. The goal: To insure the health not only of the facilities' human inhabitants, but of the environment and long-term costs as well.

HAWKENS' IMPACT

On Jan. 9, the University of Texas System Board of Regents received early design drawings of its new Nursing and Biomedical Sciences Building, one of the largest phases of the UT-Houston project. The Regents will vote on the final design this summer or early fall.

"We got positive and instructive feedback, particularly regarding the building's energy-saving and operational efficiency features," says John

Porretto, UT-Houston chief operating officer and executive vice president for administration and finance.

The new \$40 million nursing building, to be completed by 2003, includes aspects of a sustainable campus under construction, a now-collective vision nurtured after Porretto's 1995 reading of Paul Hawken's "The Ecology of Commerce," he notes.



Porretto

"The most powerful lessons are conveyed more by how we behave than by what we say," Porretto explains. "The environment in which we teach our students, treat people and seek new knowledge reveals much about our institutional principles. We cannot profess to be genuine in our aims for health and well-being if we provide services in facilities that are unhealthy and economically wasteful."

The new 8-floor, 190,000-square-foot building, will rise at the current site of the Graduate School of Biomedical Sciences, which will be razed with maximum attention to recycling and materials preservation. A new Mental Sciences Institute also will be built, on a site not yet final.

LOOKING BACK

UT-Houston Architect Rives Taylor, who is working with architectural firms Berkeley Nelson Immenschuh and McDowell of Kansas City, Mo., and Lake/Flato Architects of San Antonio, explains that much of today's sus-

tainable architecture is really the wise application of old approaches, building the way people did 70 and 80 years ago, utilizing materials and processes lost in a decades-long rush to short-term cost savings. U.S. green builders also are taking a page from those in other parts of the world, where resources are far more precious.

For example, controlled natural light - which enhances learning capacity, recovery from illness and productivity - and shade will help to maximize energy-reduction measures. Because of the orientation of the nursing building site, a large east and west facade could cause problems.

"When the sun is low, it really pounds in," says Taylor.

So, in addition to keeping the building narrow at 100 feet with primary northern and southern exposures, the team will use vertical fins, or outcrops, on the eastern side for shade (read "lower cooling costs"), and light shelves on the southern side, which will bounce sunlight back into high office ceilings (read "lower light bills").

Options for creating shade and keeping the outside western skin of the building cool are still being explored.

Another innovation is to adopt a raised plenum approach to cooling, that is, providing 12 to 14 inches below the floor for a pressurized, cool air system. Taylor explains that this will eliminate 90 percent of the huge ceiling duct systems traditionally used to blast cool air past the hottest top layer of a room, provide room for cables, and offer employees control of their air space via small round vents. He

cites studies which show that workers actually prefer warmer air than is often provided in chilly office towers, if they know they can control it.

THE BOTTOM LINE

Such features will make for an energy-conscious and cost-effective system, which is, after all, the whole point.

"Academic health science centers are long-term organizations," says Porretto. "When we build a new building we are going to live and work there for decades - we don't flip our buildings. So it's important to take a long view and consider all relevant costs. Designing and constructing a new building makes up only about 20 percent of its lifetime cost. Operational costs make up the remaining 80 percent. Invest early in efficient, sustainable operation, and it pays back over the facility's lifetime."

Other aspects of the UT-Houston sustainability program already have reaped \$12 million in savings by cutting energy consumption over the past seven years, says Scott Merville, UT news services manager. The bulk of those savings have gone into teaching and research programs, but \$250,000 of it helped pay for four solar photovoltaic arrays installed in October 1998 atop the University Center Tower parking garage. Last fall, four more arrays were added, and they now provide about 80,000 kilowatt capacity annually.

SYSTEM INNOVATIONS

Such system innovations are being tested for viability on a larger scale

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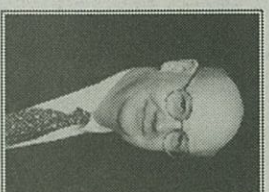
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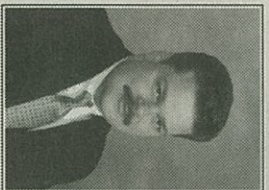
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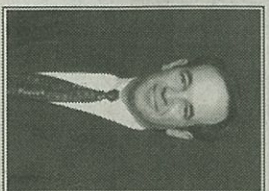
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Cut office clutter with TRRAF organization system



Office Organization

Barbara Carpenter

"I know it's here somewhere!" That is the often-heard refrain of the busy executive who thinks he is too busy with day-to-day responsibilities to maintain order. When the pressure of deadlines, appointments and everyday business mounts, the last concern often is the appearance of order in the office. The result: piles of paper, scattered files, missing documents, business cards everywhere. The harried execu-

tive might not even recall whether the desk is oak, cherry or mahogany. It's time to get organized. The TRRAF system is commonly used by professional organizers, who can step in and help an executive start sorting, regardless of whether they know anything about the specific business. Everything goes into one of five categories:

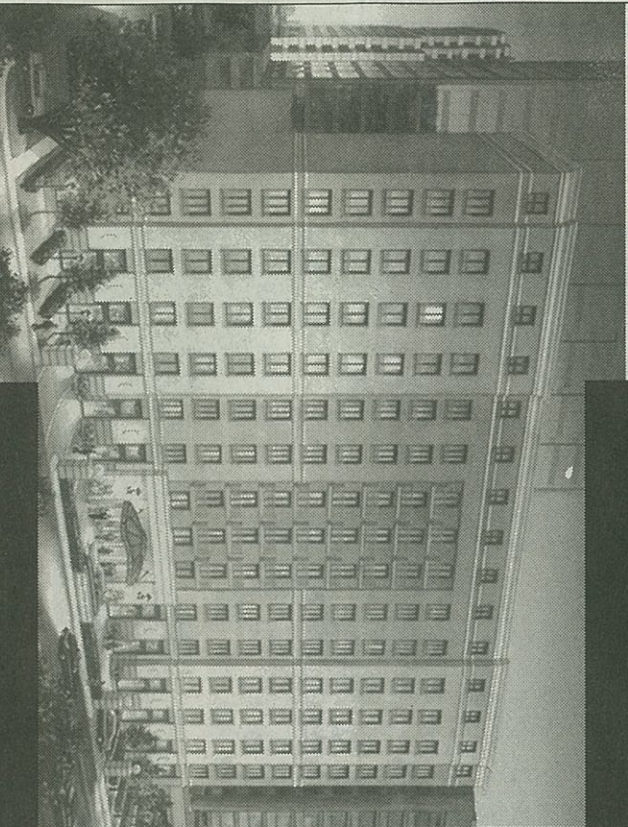
- **Toss.** If the office is extremely cluttered, most loose papers will be tossed because they are no longer relevant. Executives often postpone reading reports, brochures and mail, adding to the paper clutter. This problem can be remedied if the executive scans the item as soon as it is received. It is either tossed or placed in the Read category.

- **Read.** To avoid having the Read category topple over, the executive should have a set time each day or week to review all materials.
- **Refer.** This category is used whenever a document requires another person's attention. The person's name should be penciled at the top or, if review is required of several individuals, a routing slip can be employed.
- **Action.** This category refers to anything that needs immediate attention, including phone calls, letters and bills.
- **File.** Most people dislike filing, but the File category doesn't have to be difficult. Again, a decision should be made each time paper crosses the desk. Pencil an F along with the file name on the front. Most executives

have someone in the office who can handle the filing for them. Executives generally have more storage than they realize. Valuable space, including shelves, often is taken up by out-of-date binders, books and files. These, too, should be tossed or archived with date and contents listed. Office clutter often includes scattered business cards, disks and receipts. It helps to create departments to centralize all of these things, whether it's a small box, file or envelope. Cleaning clutter clears the mind.

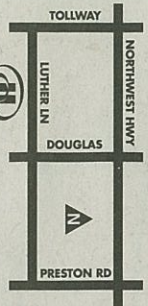
Barbara Carpenter is president of Time Solutions Office and Residential Organizing (www.timesolutions.com).

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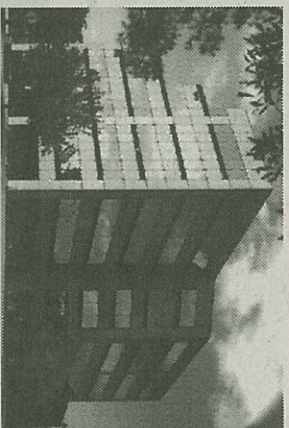
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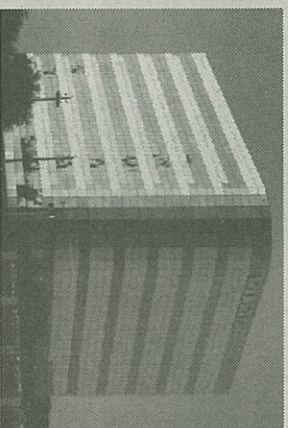


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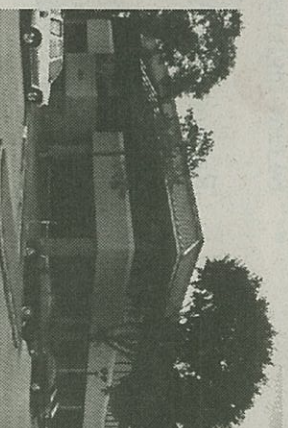
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Green

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throughout the medical center campus. Others include:

- Fuel cell technology for emergency generators.
- Rainwater and gray water recycling for irrigation, cooling systems and non-human-touch uses such as toilets and urinals.
- A desiccant system for dehumidification.

As the campus' main administration building — University Center Tower — is redone floor by floor, features such as recycled wood floors and windows that open are added. One aim is to minimize, if not eliminate, the Volatile Organic Compounds that commonly out-gas toxins such as formaldehyde from carpets, furniture and ceiling tiles. Five out of 26 floors have been redone to date.

Of course, UT-Houston's sustainability project includes a healthy recycling program — with 913,000 pounds of mixed paper and cardboard collected last year, up from 847,880 in 1989 — and printing of letterhead, envelopes and business cards on post-consumer recycled paper. Vendors have been invited to join the effort, recycling boxes used for deliveries or foregoing their use altogether, and sustainability measures are being written into contracts going forward.

Literally the greenest aspect of UT-Houston's sustainability project is the 7.5-acre Urban Ecology Park hosted by the School of Public Health. Native grasses, wildflowers and oak, pecan, maple, cypress and pine saplings are being planted and nurtured in this haven, which is designed to revive biological diversity. Purple martins, wood ducks and herons already inhabit the space, and other species are expected to follow.

The green mission has been exported to cooperating Houston Independent School District elementary schools as well, in the form of native tree plantings.

As one enjoys the green oasis, nearby warblers provide a potent musical backdrop to UT-Houston's holistic 21st Century mission — to enhance the health of its students, staff, environment and city at large. ■

Cindy A. Adams is a Houston-area freelance writer.