

# The Natural Step

## Broadening The Definition of Health at the University of Teaxas Health Science Center at Houston

by

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Some might call the University of Texas Health Science Center at Houston (UTHSCH) a rarity. Officially founded in 1972, UTHSCH is a health science university, with Schools of Medicine, Public Health, Dentistry, Nursing, Biomedical Sciences and Health Informatics. Based upon all traditional measurements, the University remains on course to accomplish its mission to become the model health sciences university for the 21st century.

Five years ago, UTHSCH started seeking new ways of revitalizing the University's campus. A team from Administration & Finance began to focus on the common and widespread activities of daily campus life in an effort to become a more sustainable university. After four years of employing the principles of The Natural Step at the University, the results speak for themselves. UTHSCH has reduced emissions by 41,000 pounds, recycled over two million pounds of waste, and saved nearly 12,000 trees and close to five million gallons of water.

Sustainable initiatives at the University have consisted of:

- using sustainable ceiling tiles made of natural perlite and no synthetic compounds
- switching from purchasing carpets to a carpet-leasing program
- replacing inefficient lights and lamps with more energy efficient ones
- retrofitting lighting ballasts by replacing electromagnetic ones with electronic ones;
- obtaining a more flexible recycling vendor
- instituting an office waste reduction program that evaluates and strategically reduces waste poundage

based on the University's average daily, monthly and annual landfill contributions

- implementing a hazardous waste reduction program that reviews all experimental protocols for their waste generation potential, employs benign alternatives when possible, stores radioactive waste for decay, neutralizes acids and bases, and sterilizes all infectious waste materials
- employing an integrated pest management contractor to minimize pesticides use on the campus
- contracting landscaping services to use compost waste as fertilizer in targeted areas and plants that require less water

An expansion of the solar-powered plant atop one of its parking garages has more than doubled the University's renewable energy capacity, underscoring again the UTHSCH's commitment to clean, efficient and sustainable use of resources. The photovoltaic arrays will boost capacity to 80,000 kWh annually, which should provide enough electricity to power two floors of the administration building.

The team began addressing ways to use organic products – specifically for food and uniforms, and within two months, it was able to identify and implement significant opportunities for improvement. Within a matter of weeks, a new uniform code for the service staff was established using 100 percent organic cotton and natural dyes. Besides promoting a healthy environment, the new uniforms promote a sense of family and community.

The University has also established a Transportation & Mobility Committee which is committed to reducing the community's "down-time" consumed in commuting to/from and around the campus; reducing the use of fossil fuels and securing efficient modes of transportation reducing SOX and NOX emissions; and, thus improving the community's health.

UTHSCH building principles are "stewarding resources, doing no harm, benefiting others in the present and future, and respecting the environment..." Agreeing in theory was simple. Creating a tangible result was a challenge. The following is the design foundation:

- Incorporate all natural opportunities presented by the physical site and design economy into the long-term maintenance and operational costs
- Minimize the negative effect of the structure on its natural site
- Endure more than 100 years, therefore, facilitating adapted reuse
- Uplift the spirit of the dwellers with interior spaces that capitalize on delighting, radiating

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simple elegance, reflecting timeless design and are welcoming and comfortable

- Contain the best workmanship by partnering with companies that use only proven, state-of-the-art equipment and materials
- Extol the indigenous environment by landscaping exterior spaces with plants and trees that are native to Houston, and take minimal care, chemicals and water
- Focus on non-toxic materials and take advantage of renewable energy sources wherever health and economy are issues. To arrive at these decisions, life cycling will be applied (end use least cost assumptions)
- Use natural, recycled materials from sources and manufacturers within Texas to the fullest extent possible
- Incorporate into our infrastructure, systems that ensure the efficient use of resources and drive recycling.

The new School of Nursing and Student Community Centers scheduled for completion in 2003 will be constructed at the site of the old Graduate School of Biomedical Sciences, which is being deconstructed

with maximum attention to recycling and materials preservation. The new, hopefully, LEED (US6BC) certified building will have a 100-year useful life, with some components lasting even longer. The new facility will have controlled natural light, which will help to maximize energy-reduction measures. The building will reflect a neutral ecological footprint on the natural system. The University is working hard to achieve

its goals of CO<sub>2</sub> balance, net energy production, materials selection and flexibility of the interior space.

The University also has a full-time Sustainability Officer whose mission is to educate the University, its vendors, and the community on sustainability compliance by using The Natural Step framework. Through a comprehensive educational campaign, the conversion to a more sustainable community begins.

The University's next focus will be on outreach through the Urban Ecology Research Park project, a collaborative research and education effort with UTHSCH, the University of Houston-Downtown, Houston Community College Southeast Campus and Hightower High School in Fort Bend Independent School District.

The purpose is to determine how health and the quality of life in urban settings can be enhanced through the thoughtful planning and conscientious deployment of resources, knowledge and skills from various fields. Emphasis will be on the study of physical, biological, economic and technological factors that impact on the habits and habitats of individuals and populations. The initial goal is to develop awareness that urban sites are delicately balanced ecosystems. This goal will be accomplished by defining and packaging urban ecological knowledge, and by developing conventional and distance learning paradigms to educate individuals about our environment.

As a result, University of Texas Health Science Center at Houston is light years ahead of where it began to conduct natural business, but it is only the beginning. ♦

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