

**THE NATURAL STEP
ORGANIZATIONAL CASE SUMMARY**

UNIVERSITY OF TEXAS HEALTH SCIENCES CENTER
Houston, Texas

A. THE BUSINESS

The University of Texas Health Sciences Center is a component of the University of Texas, which is a large university system that has nine general academic institutions and six health-related complexes and nursing schools located throughout the state of Texas.

The organization provides professional facilities management and procurement services for the University. The facilities organization is the steward of nearly 3.0 million gross square feet of space, an \$8.1 million utilities budget and, in 1997, a \$5 million capital projects initiative. The procurement process facilitates material acquisition in excess of \$60 million, facilitates the institutional “Historically Underutilized Business Program,” and the Small Order process as well as the new Procurement Card program. In Fiscal year 1998, Support Services provided a broad range of services to the University community including:

- Completed 10,745 separate preventative maintenance tasks.
- Responded to 14,927 requests for services through their FIXIT hotline.
- Conducted 55 Facility Advisory Council Meetings to communicate on facility issues with their customers.
- Managed 95 separate capital projects with a combined budget from all sources of \$5 million.
- Provided contract management services for 15 leases encompassing 215,000 square feet of leased space.
- Inspected more than 1,700 fire extinguishers every quarter.
- Maintained 286 restrooms including more than 500 toilets and 184 urinals.
- Replaced over 13,000 rolls of toilet paper
- Operated 241 air handling units and 22 chilled water pumps.
- Maintained over 530,000 square feet of roof area.
- Maintained over 800 wet labs.

Support Services has about 70 employees. Health Sciences employs about 4,000 faculty and staff.

B. PRINCIPLE MOTIVATION FOR CHANGE

Beginning about five years ago, the UT Health Sciences Center started to focus on major organizational change to reinvigorate the organization. During this period, John Porretto, Executive Vice President of Administration and Finance and Brian Yeoman, Chief Facilities Officer, attended a system thinking conference in Boston in 1995 at which Karl-Henrik Røbert taught The Natural Step methodology. When they returned

from the conference, they made the commitment to make the operations of the Health Science Center more ecologically sustainable focusing first on the Support Services Department.

C. CHOOSING THE NATURAL STEP (“TNS”)

When Porretto and Yeoman returned from the meeting, they decided to create a core group of people to become familiar with The Natural Step. In May 1997, this core group attended a five-day advanced training workshop sponsored by The Natural Step/US. In November 1997, this core group set up two one-day Natural Step sessions on campus with the assistance of a TNS-associated consultant. Participants in the sessions were drawn from faculty, staff, and outside vendors. Support Services continues to organize only now the training sessions are provided every sixty days.

D. TNS INTRODUCTION AND IMPLEMENTATION

Support Services is committed to being a leader in bringing sustainability to the campus of UT-Houston. Using the Natural Step as their “framework for thinking,” they are initiating actions in three areas: education, implementation and partnerships. In Fiscal year 1998, Support Services hosted four training sessions structured around The Natural Step principles of sustainability. These sessions brought together staff, faculty and vendors in an effort to understand sustainability and to begin to envision how it might be implemented on campus. With respect to implementation, Support Services has launched a series of projects and operational changes to bring sustainable practices to the University. Some of these projects are featured below. To achieve sustainability goals, Support Services has initiated partnership agreements with several private sector vendors, other public agencies, and non-profit groups. They received grant funds in partnership with the State Energy Conservation Office and the Utility Photovoltaic Group to implement solar power and have engaged in negotiations with several carpet manufacturers towards a carpet services agreement.

- **Education**

Support Services uses The Natural Step as their “framework for thinking” about sustainability. Their goal is to “educate, train, and inspire” every member of the university to conduct their activities in a sustainable way.

- **Implementation**

The search for “low-hanging fruits” began at the first TNS-based training session. A representative from a vendor organization recognized immediately that the boxes they used to deliver stationery such as paper, pens, and pencils created unnecessary waste. In addition the packaging represented a needless cost to the vendor. During the training session, he conceived of the idea of using “returnable” bags to deliver these goods. After the products are delivered, the bags are returned to vendor for re-use. Support Services instituted several other sustainability projects, including:

- Lighting retrofit projects
- A sustainable ceiling tile initiative

- A sustainable carpet initiative
- A comprehensive energy management program
- Installation of occupancy sensors
- Installation of direct digital controls for HVAC systems
- Installation of variable frequency drives for HVAC systems
- An expanded recycling program
- An integrated pest management program
- A building green program focused on the new Nursing and Biomedical Sciences building

Some of these are featured below:

- **Recycling:** In 1998, UT Support Services changed its thinking about recycling. Previously, they had focused on maximizing their revenue per pound of recycled material which meant that they restricted their program to recycling the most valuable type of waste: clean, white office waste. In 1998, they decided that instead of maximizing dollars, they would maximize the poundage being diverted from the waste stream. They secured a different vendor that was willing to take all kinds of paper including newspaper, telephone books, and colored paper. This caused an immediate 60% increase, more than 318,000 additional pounds, in recycled waste over the previous year.
- **Integrated Pest Management:** Integrated pest management is based on baiting, source control and interruption of the reproduction cycle of pests. It employs chemical pesticides only as a last resort and only in specific areas to control infestations. As a result of this program, the University of Texas at Houston has avoided the application of an estimated 6000 gallons of pesticides to the University work environment.
- **Sustainable Ceiling Tiles:** The University has millions of square feet of acoustical ceiling tile which contribute a high volume to construction waste during remodeling. These tiles are manufactured using cellulose fiber bound together with various glues and petroleum-binding agents which can break down into persistent compounds that can accumulate in nature. The new tiles are manufactured from all natural perlite with no man-made persistent compounds.
- **Sustainable Carpet:** The University buys thousands of square yards of carpet every year. This product has a useful life of about 10 years, after which it is taken up and disposed of in a landfill. Modern carpeting is composed of many persistent man-made compounds, such as nylon. Consequently, the earth's natural processes take up to 20,000 years to completely incorporate these compounds into the earth's crust. This "cost" imposed on the earth and ultimately on human society, is a "cost" not borne by the producer or user of the carpet. Support Services is switching from purchasing carpets to leasing them with the stipulation that the manufacturer will monitor carpet use, maintain it, and dispose of it in a sustainably responsible manner.

- **Nursing and Biomedical Science Building:** This facility will house the School of Nursing, Student Services, Registrar and the School of Allied Health as well as student and faculty seminar functions. Studies conducted by the University of Texas indicate that taking “green building” measures during construction or renovation can result in significant building operational savings, as well as increases in employee productivity. Taking a long-term view of the building, Support Services is researching environmentally sound practices in construction, maintenance and operation of the building including the use of solar voltaic systems, gray water systems, a centralized recycling system, and day lighting systems. Support Services pioneered a process they call “Building Systems Assessment.” Through this process they studied different building systems prior to building and brought together world-class experts in engineering, architecture, construction materials and constructabiity with the goal of analyzing, evaluating and recommending system components having the least environmental impact within a full cost perspective. A parallel and related process brings together 17 teams of building occupants, service providers and school leadership to address issues concerning the configuration of space, the sharing of resources, and the programmatic needs and goals of the academic units planned for the facilities.
- **Energy management:** The University maintains a comprehensive energy management program that has been successful in substantially reducing the use of heating and cooling resources across all utility types. The dollar savings associated with these consumption reductions have primarily been reinvested into further conservation projects.

These are only a few examples of the many implementation actions being taken to operationalize sustainable development at UT/Houston.

E. TNS IMPACTS AND LESSONS

As a major procurement agency, Support Services can exert considerable influence on UT/Houston’s ecological impact through their selection and purchasing power. Action is more important than analysis. By integrating sustainability into their core values, the Support Services department can help the University contribute to sustainability in the wider society. Dr.Christopher McKee, Communications Officer and George Bandy II, Sustainable Development Officer, suggest the following lessons to organizations that are beginning to explore sustainable development:

- Do not do things blindly.
- Baby steps are okay.
- Don’t be afraid to take your first few steps toward your goal.
- Have a culture that allows mistakes and views mistakes not as failure, but as part of the process of learning.
- Learn from others who are exploring the same issues.
- Don’t be afraid to call other institutions and find out what they are doing.

Some of the results of their sustainability initiatives can be captured in the following figures:

FY 97 Resources saved/reduced:

recycled(lbs):	529,737
water (gal.)	1,854,080
oil (gal.)	100,650
air pollution (lbs)	15,892
trees saved	4,503
electricity	1,085,961
landfill space (Y ³)	795

FY 98 resources saved/reduced:

recycled(lbs.)	848,270
water (gal.)	2,986,945
oil (gal.)	161,171
air pollution (lbs)	25,448
trees saved	7,210
electricity	1,738,954
landfill space (Y ³)	1,272

F. ADDITIONAL INFORMATION

The University of Texas/Houston Health Sciences Center's Support Services Division has produced some excellent materials that can be obtained from them directly (see below for contact information). Also visit their website: www.uth.tmc.edu/ut.

G. CONTACT INFORMATION

George C. Bandy II
Sustainable Development Officer
Support Services
7000 Fannin Street, Suite 1505
Houston, Texas 77030
Tel: 713.5400.3415
Fax: 713.500.3636
Email: gbandy@admin4.hsc.uth.tmc.edu

*THIS CASE SUMMARY WAS RESEARCHED AND WRITTEN BY
BRIAN NATTRASS AND MARY ALTOMARE FOR THE NATURAL STEP.*