

# HKUST Environmental Report

## 2001 Update



香港科技大學  
HONG KONG UNIVERSITY  
OF SCIENCE AND TECHNOLOGY

***In 2001, HKUST continued its effort in further fostering an environmental friendly culture and awareness. Many academic, research and operational units worked in concert towards a sustainable future. New research projects coupled with innovative sustainable practices highlight the accomplishments this year.***

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## Resource Conservation

**C**onserving resources continued to be an area of emphasis in our facility management operations. Examples of our effort include:

- Continued energy performance contracting with Honeywell which involves lighting retrofit and other energy saving initiatives all over the campus, and certain special energy saving measures in the laboratory areas. The anticipated energy reduction at completion of this project is estimated to be 1,460 Giga-Watt-Hours. This will translate into a yearly savings of \$1,120,000 and reduction of 1,340 tons of CO<sub>2</sub> emission.
- Commenced a 3-year energy performance contract with China Light and Power in the Library. Waste heat is recycled for dehumidification. The anticipated reduction in gas consumption is 6,000 Giga-Joules per year, translating into \$940,000 annual savings.



- Replaced ozonation at swimming pools by an electronic system which detects and maintains proper chlorination of the water. The new system results in 1,000 Giga-Watt-Hours of electrical energy savings per annum, which translates to \$85,000. Furthermore, significant reduction in chemical usage was observed with no degradation in water quality.
- Replaced the turf at the outdoor soccer pitch with a material which no longer requires pre-game watering. The groundwater saved is now used for other landscaping irrigation purposes.

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## Waste Management

**E**fforts in minimizing and recycling wastes were intensified, yielding marked improvements. Income derived from recycling was dedicated to supporting various environmental initiatives.

- Paper waste recycled increased 29.8% from 124,908 to 162,118 kg as compared to the previous year.
- Aluminium cans increased 33.4% from 40,960 to 54,655 numbers.
- There were 1,370 recycled printer cartridges and a significant quantities of recycled plastic bottles.
- Chemical reagent recycling increased by 50% from 82 to 125 items as reflected in our Chemical Exchange Program.



## Partnerships with Start-up Companies

HKUST has helped further promote environmental services and technology development through entering into partnerships with several start-up companies mainly made up of our own graduates, and many times in some form of collaboration with faculty members. They include:

- Acron International Technology Ltd — design and build solution provider for green and intelligent buildings, indoor air quality and energy management.
- 3E Envirotech Development Co Ltd — developing and promoting green and smart building products and advanced technology for infrastructures.
- Biodetection Ltd — developing biotechnology-based sensors for medical and environmental applications.

## Indoor Air Quality

Ensuring good indoor air quality has been an important priority. In 2001, HKUST continues to rigorously monitor indoor air quality with a series of improvements already implemented. For example, the fresh air intake openings for lecture theatres A, B and C have been enlarged to increase fresh air supply. Several new technologies are being investigated with the goal

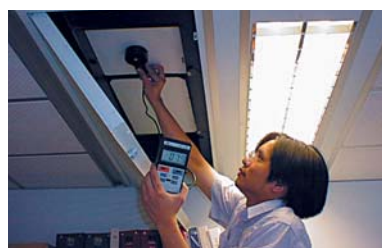
to improve IAQ in crowded areas while maintaining energy efficiency. Examples include a multi-pollutant IAQ monitor, a molecular sieve air treatment device which can decrease indoor carbon dioxide content, and an energy recovery ventilator which can increase fresh air to air-conditioned areas while conserving energy for air-conditioning. An exhibition of the adopted IAQ strategies generated substantial interest from the campus community.

## Student Activities

Several activities were organized to promote environmental awareness among students.

These include:

- A green trip organized by the Biology Student Society to provide students a valuable opportunity to experience the special feeling of embracing nature. Activities held included making recycled paper and organic baking of cookies from organic flour and vegetables. It was well received by students.
- Two rounds of used items recycling organized by the Social Services Student Society. It was aimed to arouse public interest on wise use of resources and help others by donating recycled items.
- A waste recycling competition held in the student halls in the month of December 2001. This program is aimed at encouraging students to practise waste separation and recycling.



## Environmental Research Projects

HKUST continues to conduct leading edge research on a number of environmental issues including the atmospheric environment, atmospheric modeling, air emission technologies, acoustic environment, waste water treatment technologies, solid waste disposal and soil clean-up technologies, social and economic aspects of the environment, etc. Units engaging in environmental studies include Applied Technology Center, Department of Biology, Center for Coastal and Atmospheric Research, Department of Chemical Engineering, Department of Chemistry, Department of Civil Engineering, Institute for Environment & Sustainable Development, Department of Mechanical Engineering, etc. A comprehensive list of environmental research projects conducted in 2001 is accessible at

<http://www.ab.ust.hk/sepo/EnvRep/env.pdf>

## Environmental Compliance

We continued to comply with various environmental regulatory requirements applicable to HKUST operations. These include

monthly monitoring of waste water and sea water discharges, hazardous waste management, etc.

## Other Activities

- HKUST continued to develop and expand the use of electronic forms together with mechanisms for electronic routing and approval.
- HKUST continued to source products from companies with ISO 14000 certification in an effort to promote the use of environmentally friendly products.
- An environmental training workshop for teachers was held at HKUST to help primary and secondary school teachers obtain various fundamental knowledge on environmental science and



technology. A total of 110 teachers attended the workshop.



This is a supplemental update to the HKUST Environmental Report 1999-2000 which is accessible at <http://www.ab.ust.hk/sepo/>

