

Towards a Green and Sustainable IIT Kanpur

“Saving the environment is not only about introducing energy saving devices. It is about changing people’s mindset and making them want to save the environment”

“College and universities, as leaders of innovation in our society, have the potential to demonstrate sustainable principles in their campus operations and policies. Their examples can provide a road map for others to follow.”

Common Birds of IIT Kanpur

This is a narrative of birds commonly encountered at IIT Kanpur. The campus may be particularly attractive for birds since it is a virtual oasis of green amid the surrounding agricultural land; this [checklist](#) lists 259 bird species that have been sighted around here.

I am no bird expert. Until some years ago, I didn't know a cattle egret from a little green bee-eater. The birds shown here are not rare or special - they are just everyday birds, birds that may drop in at your lawn. Most were photographed while walking around my house, but many are from other areas such as the orchard behind the airstrip and the reservoir near it, or the barA nahar ([Ganga Canal](#)). See more on [bird-sighting spots at IITK](#) below.

While most of the images are nearabout the IIT campus, these birds are actually common across most of Northern India (Gangetic plains), and some are common much beyond. As one goes West, things get drier, and birds like the [drongo](#) or the [pled myna](#) become rarer.

If you come across an exceptionally artistic picture, it is probably the work of [Sainath Vellal](#), who did his Master's here 2006-2008. Some other pictures have also been contributed (see below), and do let me know if you would like to contribute any pictures here. [amit [AT] iitk.ac.in].

Those from IITK may visit the page [\[Birds of IIT Kanpur\]](#) created by Prof. TV Prabhakar, which lists more than two hundred species that have been seen at IITK, incorporating the descriptions from the Book of Indian birds as well as non-IITK photographs. Unfortunately this page is not available outside IITK, but I have updated and made an HTML version of the [checklist](#) that was originally created in the 70s by Raman Athreya and others, as well as this [PDF version](#) which includes the local (Hindi) names. Note that about 50 of the bird species are from Bithoor on the Ganga and are typically not encountered on campus. A more recent attempt at creating a list, by Sainath and Suhail, may be found [here](#). See more [links](#) below.



<http://www.cse.iitk.ac.in/~amit/birds/>

Current scenario

- ◆ Student/faculty/staff strength increasing
- ◆ Great stress on resources and ecology.
 - ◆ Lowered water table.
 - ◆ Large amounts of garbage.
 - ◆ Huge energy requirement.
 - ◆ Increased demand for space/land.
- ◆ Flora and fauna under threat
 - ◆ Birdwatchers note decrease in bird+peacock population.
 - ◆ Reduction in neelgai, monitor lizards etc.
- ◆ Focuses attention on IIT K's future as a Green and Sustainable campus.

Green campus: Why?

- ◆ No brainer!
 - ◆ Green means trees, NOT lawns.
- ◆ A green environment alleviates greatly the city's negative impact.
- ◆ Trees
 - ◆ insulate us from external noise and pollution.
 - ◆ prevent erosion and conserve ground water.
 - ◆ lower temperature. Campus always a few degrees cooler.
- ◆ Supports diverse fauna.
 - ◆ Makes IIT K special. For families and students.

Sustainability: Why?

- ◆ Again, a no-brainer!
- ◆ Sustainability means meeting the needs of the present without compromising the ability of future generations to meet their own needs.
- ◆ Make our students and children appreciative and sensitive about this critical issue facing our country.

IIT-B campus losing green cover: Study [Mumbai]

| [Times of India, The, May 31, 2010](#)

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MUMBAI: The Indian Institute of Technology-Bombay (IIT-B) isn't just a grooming ground for engineers, it's also home to rich flora and fauna. The 566 acres of the Powai campus act as the city's lungs and a carbon sink, but campus expansion has forced the institute authorities to trim the green cover a bit.

This has also taken its toll on the fauna in the campus. G C De, a retired faculty from the electrical engineering department, who was responsible for greening the campus, said he had earlier spotted close to 200 birds, which matched with the observations of Salim Ali and Humayun Abdulali in their book, Birds of Bombay and Salsette. But, in a recent survey-Study of Biodiversity of IIT-Bombay Campus by Goldin Quadros-the World Wide Fund for Nature noted that merely 100 bird species were spotted.

The study was conducted from September 2008 to February 2009 and its findings were released recently. "The campus being adjacent to the Sanjay Gandhi National Park, several mega fauna could be spotted there. But with the fragmentation of habitat, their visits have become sporadic. The campus can still support a lot of biodiversity, but implementing conservation measures is the immediate need," the study noted. The IIT-B authorities were prompt to set up the Green Campus Initiative Committee to ensure that the college stayed green.

The study states that the IIT-B has a total of 84,344 species, of which 44% is flora and the rest is fauna. For Reprint Rights: timescontent.com

Examples: IIT Bombay

- ◆ Committed to be a model campus in environmental conservation.
- ◆ Green Campus Initiative Committee makes an Eco-policy.
- ◆ Dedicated No-vehicle zones in academic areas.
- ◆ Only electronic communication.
- ◆ Energy efficient ACs and solar water heaters.
 - ◆ AC-heat used to heat water.
- ◆ Re-starting two existing biogas plants for solid wastes.
- ◆ Solar-powered streetlights and Water recycling plants.
- ◆ Its very own forest!

Committed to Sustaining a Green Campus at the Chinese University

對持續地發展中文大學成為綠色校園的承諾

This report provides evidence of the different aspects of improving environmental quality of the university campus for sustainable development. From slope improvement to conservation of flora and fauna, from waste reduction to recycling, from cleaning up the air we breathe to energy saving, from conveying the green message in various campus activities to environmental education, we are committed to sustaining a Green Campus at the Chinese University of Hong Kong. Besides, the report is also aimed at stimulating thinking on how to improve our environmental quality on campus among staff and students.

The number of students has expanded significantly in the past decade, new buildings are being or will be built in a very limited space on campus to cope with the development. We have tried our best to keep all valuable natural habitats when making our infrastructure improvement projects to enhance our teaching and research capabilities. Daily works are essential to improving the environmental quality of campus, recycling is one of the major jobs which requires actions to be taken by all sectors of the University. In addition, balancing energy efficiency and indoor air quality is also a major task. We certainly hope that the existing high standards could be maintained and the envi-

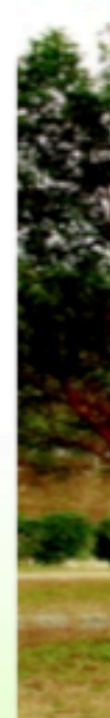
ENVIRONMENTAL POLICY

環境

The Chinese University of Hong Kong seeks continually to improve the environmental quality of the campus to provide a congenial environment for teaching, learning and scholastic activities.

The University is committed to ensuring that all activities run by the University are conducted in an environmentally responsible manner and has adopted the following guidelines in pursuance of this commitment:

- We endeavour to build a clean and green campus congenial to the fulfillment of the purposes of the University;
- We seek to comply with all applicable environmental legislation, standards and regulations;
- We avoid, reduce or control environmental pollution arising from our activities and to require our contractors to adopt and implement similar environmental measures;
- We seek continual improvement in the efficient use of energy and other natural resources;
- We raise environmental awareness among staff and students and set the University as a model in environmental education and environmental management;
- We ensure good management practices by reviewing them regularly and ensure that they are tuned to the changing internal and external circumstances.



Example: Chinese U. of HK

- ◆ Comprehensive Eco-policy. (SHOW)
- ◆ Storm drains, sewers and grease traps to trap natural rainwater and segregate waste water and oily waste to prevent water contamination.
- ◆ Properly disposes chemical and bio-wastes.
- ◆ Recycles heavily.
- ◆ Environmental Guideline for contractors.
- ◆ Aggressively protects local flora and fauna. (SHOW)



Cornell University
Cornell Sustainable Campus

SEARCH:

go

Cornell Sustainable Campus Cornell [more options](#)

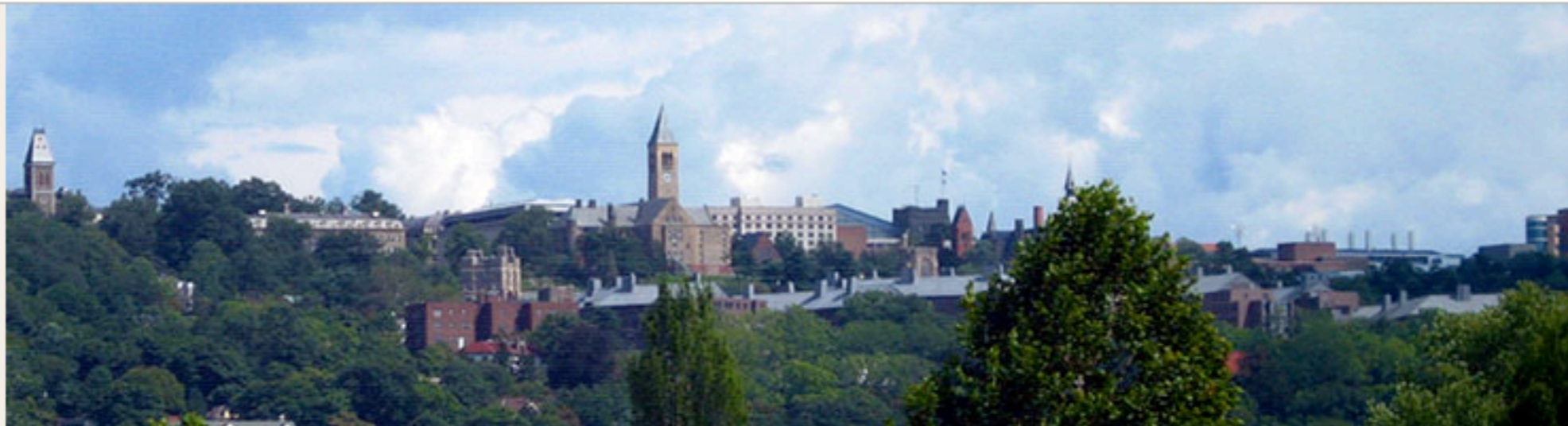


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Cornell Sustainable Campus

Promoting sustainable futures and advancing Cornell's mission



Cornell named one of nation's most environmentally responsible universities.

Check out the Princeton guide [here](#). (pdf)



Cornell marks opening of Combined Heat

<http://www.sustainablecampus.cornell.edu/>

Example: Cornell University

- ◆ Proper bio-medical, veterinary and chemical waste management.
- ◆ Energy efficiency lighting.
- ◆ Lake source cooling.
- ◆ Solar water heating.
- ◆ Green Development:
 - ◆ Efficient land and space use, efficient new construction, retrofitting older buildings.
- ◆ Cornell's purchased energy same since 1990!

Rapid Assessment of Biodiversity on the Campus of Indian Institute of Technology - Madras



Report of the Study Commissioned by



The Director
Indian Institute of Technology Madras
Chennai - 600 036

Human impact seems to be at its peak only in and around habitats inhabited by the endangered Blackbuck or the resident and migratory birds. Any further construction in these areas can only be detrimental.

Littering and improper disposal of waste is a common practice on the Campus.

If human impacts have to be minimized, certain strong decisions need to be made. Areas earmarked as conservation/wilderness areas need to be kept exclusive and no human use (even occasional) should be permitted.

AN AIESEC & ECOZEN SOLUTIONS INITIATIVE

Energy Audit, IIT Kharagpur

Preliminary Audit Synopsis

- Replacement of HPSV street-lights by LED lights.
- Modernization of corridor illumination system.
- Install motion sensors, master switches and timers.
- Renovation of illumination system of Central Library.
- Online energy meters for academic complex and halls.
- Targets to departments and halls to reduce consumption.
- Launching an aggressive 'GoGreen' Campaign.
- Building Biogas plants to treat the food waste from mess kitchens.
- Installation of Solar cooker for boiling water in the mess kitchens.
- Efficient air-conditioning.

Almost every modern University has a separate and very active body that oversees that the campus remain green and sustainable.

Government funded Educational Institutions, such as Indian Institute of Technology Kanpur, are essentially mini townships established on a developed piece of land, with defined boundaries and a definite population. The sprawling estate is held and administered by a governing body. However day-to-day functions are regulated and controlled by an *Estate & Works Department*. A modest budget is allocated to this unit for the upkeep of the estate and for providing the essential services. However due to lack of know-how, vision, commitment and gross inadequacy of funds, the upkeep and preservation of the environment seldom receives serious attention of the administration. Even prestigious and well-funded Institutions are unwilling to invest adequately in the upkeep of the services and infrastructure due to low priority accorded to preservation of environment on campus.

It is a stark reality that the quality of life on a residential campus depends heavily on the state of environment. In fact the very prestige and vitality of the Institution depends upon the environment it provides for the academic activity to flourish. The state of environment also profoundly influences the impressionable minds of the young students in shaping their attitudes and indeed ~~the very approach towards life and profession. Hostile ambience on campus develops indifferent attitudes and casual approach among the residents. They tend to reconcile to subhuman living conditions and adjust to low quality of life without any protest. Reconciliation by the students and researchers with the low-grade life at such an early age has a lasting effect and manifests itself in the way they perform in their profession and contribute to the national interests.~~ Therefore the fact that the physical environment needs to be accorded a high priority in terms of attention and allocation of funds, needs no emphasis. In fact the residential educational institutions should ideally set the trends in environmental upkeep of an organized human habitation and to serve as a role model for the townships to emulate.

<http://www.iitk.ac.in/iwd/educational.htm>

IITK:
*Organization with a
“green vision”*

Suggestions: Land

- ◆ Master plan!
 - ◆ Delineates permanent green (forest) areas.
 - ◆ Will reduce neelgai venturing into residential area.
 - ◆ Restrict grass cutting to only around roads/paths.
- ◆ NO further horizontal spread. (map)
- ◆ Grow vertically.
- ◆ Replace/retrofit older inefficient buildings.
- ◆ Eliminate large parking lots.
 - ◆ This is a residential campus.
- ◆ Maintain an accurate and transparent space audit.
 - ◆ Efficient use of available space essential!

Suggestions: Construction

- ◆ Green building codes be put in place and rigorously imposed. Examples:
 - ◆ Buildings harvest water and have proper waste disposal.
 - ◆ Buildings have a minimum number of floors, say eight.
 - ◆ Buildings have adequate capacity for vertical expansion
 - ◆ Be centrally air-conditioning when required.
 - ◆ Buildings be hazard resistant: earthquake + fire.
 - ◆ Buildings have proper ventilation and natural temperature control.
 - ◆ Construction employ environmentally friendly materials.
 - ◆ The functionality of the building be kept in mind at design stage.
- ◆ Only architects with proven “green” track records be hired.
- ◆ Contractors be required to follow “green practices”. And labor laws.

Suggestions: Water

- ◆ Recycle all water!
- ◆ Drinking water: for cooking, bathing, washing.
 - ◆ Not for washing cars, watering lawns, etc.
- ◆ Eliminate fresh-watered ornamental grass/lawns.
 - ◆ IWD: Water recycling can supply 60% of present lawns.
 - ◆ Replace by tree groves and/or playgrounds.
- ◆ Create large surface water body behind Hall 10.
 - ◆ Supply campus' water needs rather than bore-wells.
 - ◆ Stock with fish. Will be environmentally very beneficial.
- ◆ Water meters for hostels, academic and residential areas.
- ◆ All buildings harvest water.

Suggestions: Energy

- ◆ Aim for a Carbon-neutral campus.
- ◆ Solar hot-water systems and Solar street lights.
- ◆ Energy efficient air-conditioning.
 - ◆ Centralized, chilled-water based cooling?
- ◆ Maintain transparent and current energy audit of various academic buildings, departments, offices, hostels, etc.
- ◆ All buildings save energy by efficient technology
 - ◆ Natural lighting, proper ventilation, solar heating, double-glazed windows, etc.
 - ◆ Lights with motion sensors, timers, master switches, etc.

Suggestions: Pollution

- ◆ Recycle!
 - ◆ In-house Bio-gas/composting plants.
- ◆ Move to maximum paperless working.
- ◆ Proper disposal of chemical/hazardous waste
 - ◆ Presently a very serious problem on campus.
- ◆ Plan and implement policies to promote a pedestrian- and bike-friendly campus.
- ◆ Enforce zero-plastic bag policy.
- ◆ Burning of grass, leaves, etc. be stopped.

Suggestions: General

- ◆ Targets to departments and halls to reduce energy+water consumption.
- ◆ Student participation in institutional decision making on sustainability-related issues.
- ◆ Have sustainability-related mission statements, strategic plans, master plans.
- ◆ Need an independent apex body to oversee campus sustainability and ecology.
 - ◆ Have presence and publicity in line with “green” Universities like Cornell.