Green University Construction of Tsinghua University

Integration of Teaching, Science Research and Campus Construction Resources, Building a Sustainable University, and Promote Sustainable Talent Cultivation

Tsinghua University
2011-6-9
Facing resources and environmental problems, what is the responsibility of university?

1) promote the construction of green university

2) implement the principle and guideline of sustainable development and environmental protection in the various activities of university

3) cultivate high-quality technology and management personnel with sustainable development idea

4) spread and practice the idea of sustainable development
Sustainable、Green university

- University of Edinburgh Environment Agenda
- The Kyoto Declaration 1993
- The Luneburg Declaration 2001
- The Ubuntu Declaration 2002
- The Kyoto Declaration 1993
- Green University Tsinghua University 1998
- The Luneburg Declaration 2001
- University of Michigan Sustainable University of Michigan 1999
- GreenU George Washington University 1994
- Campus Sustainability in Higher Education Cornell University 2005
- Greening the campus Waterloo University 2005
- Australian Campuses Toward Sustainability 1997
- Campus Sustainability in Higher Education Cornell University 2005
- University of Michigan Sustainable University of Michigan 1999
- Green University Tsinghua University 1998
- The Kyoto Declaration 1993
- The Luneburg Declaration 2001
- The Ubuntu Declaration 2002
Tsinghua University · Green University

◆Tsinghua University has implemented “Green University Construction” and carried out the work of “Green Education”, “Green Scientific Research” and “Green Campus Demonstration” since 1998.

◆The aim is to integrate teaching, science research and campus construction resources, and promote sustainable talent cultivation and sustainable technology R&D.
Green University of Tsinghua

- **Green Education** will be used in cultivating people. The people cultivated are high-quality talents with consciousness of environmental protection and sustainable development, will spread across the country like green seeds after graduation, and will come to be the backbone and hardcore force in environmental protection and implementing strategy of sustainable development;

- **Green Technology** will be utilized in developing scientific research and promoting environmental protection industry. Consciousness of environmental protection and sustainable development will thread through all aspects and whole process of scientific researches;

- Demonstration project of **Green Campus** will come to edify people around. Ecological demonstration area with exquisite environment will be built in Tsinghua campus through comprehensive activities and exhibiting advanced environmental protection technologies at home and abroad, and will be taken as the base for education of environmental protection and sustainable development, while providing with fine condition of working, studying and living for general teachers and students.
Green University

- Green Education
  - Literacy classes
  - Cross class
  - Energy environment specialty
- Green research practice
  - SRT
  - Environment friendly competition
  - Students' social practice
  - Green forum

Sustainable talent cultivation
Course education

◆ We have built 279 curriculums of sustainable development since 1998, about two-thirds of all our departments are involved.
◆ According to statistics, 4,000-6,000 students have selected these curriculums every year.
42 basic curriculums among the curriculums of sustainable development are selected for constructing the “Green Curriculum Division”, which has been listed as one of the eight curriculum divisions of cultural quality education and included in the training program of important basic curriculums for undergraduates, more than 20,000 students have selected these curriculums.
Green practice

◆ SRT is to help the undergraduate students for researching on the topics they are interested under the guidance of teachers or to conduct the existing research topics along with the teachers.

◆ SRT became an important means in Tsinghua University in training the sustainable talents in practice. From 1996 to 2010, Tsinghua University has set up 503 SRT programs relevant to the sustainable development, 1135 students have been involved.
The environment-friendly technology competition has become an important event in Tsinghua, which encourages students to participate in the resource-saving and environment-friendly society construction with original idea and inventions of science and technology.
Green practice
Sustainable campus demonstration

- the behavior framework
- the green campus demonstration project construction
- the construction of good atmosphere

Sustainable development talent
The behavior framework

Public management system

The establishing green university planning
Tsinghua university management measures of energy saving and emission reduction
Tsinghua university environmental protection management measures
Power supply system Management measures
Water supply system management measures
Heating system Management measures
Recycle-water system Management measures
......

Code of personal conduct

About in-depth development of campus saving activity notice
Campus saving code
Building the saving-type Student organization
......
Green Campus Demonstration

The comparison of electricity consumption with two buildings from China and USA

Electricity Consumption of Upenn (2006)

0 100 200 300 400 500 600 700 800 900 1,000 kWh.a/m²

1 4 7 10 13 16 19 22 25 28 31 34 37 40 43 46 49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94


0 20 40 60 80 100 120 140 160 180 kWh.a/m²

The comparison of energy consumption with two buildings from China and USA

<table>
<thead>
<tr>
<th>Building</th>
<th>Heating</th>
<th>Air conditioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPenn</td>
<td>1.02GJ/m².a</td>
<td>0.84GJ/m².a</td>
</tr>
<tr>
<td>Tsinghua</td>
<td>0.38GJ/m².a</td>
<td>Without centralized cooling</td>
</tr>
<tr>
<td>Tokyo</td>
<td>0.43GJ/m².a</td>
<td>0.45GJ/m².a</td>
</tr>
<tr>
<td>Shanghai</td>
<td>0.36GJ/m².a</td>
<td>About 0.4GJ/m².a</td>
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</tbody>
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The same type building in Tokyo and Shanghai
The green campus demonstration project construction

Energy-saving management

New energy and renewable energy
The construction of good atmosphere

students activities

school propaganda

Sustainable development talent
We believe that the idea and technology of sustainable development are the qualities that the citizens should have, and we will also keep steps on "Green University" construction, so as to help every Tsinghua student become the innovator and communicator of the idea and technology of sustainable development.
Thank you!