

Keio University

ISCN-GULF Sustainable Campus Charter Report 2011/12

Introduction

About Keio University:

Keio University is a private institution founded in 1858 at the end of the Japanese feudal period by renowned philosopher and educator Yukichi Fukuzawa, who contributed significantly to the modernization of Japan. Yukichi Fukuzawa valued "intellect and morality" and "honorable character" in the course of learning, aspiring to shape the characters of individuals fit to lead society. That vision has been inherited until this very day, and Keio's overarching goals include contributing to environmental conservation and development of a sustainable, recycling-based society through its educational, medical, and research activities.

Keio University consists of 10 undergraduate faculties and 14 graduate schools, a total of 8 affiliated primary and secondary schools, 1 university hospital, 10 research institutes, and 26 various research centers. Keio has around 40,000 students and 6,000 full-time faculty and staff members. The total floor area of Keio's 6 campuses, 8 affiliated schools, and university hospital combined is 696,704 square meters.

Keio University does not have a specialized organization engaged in sustainable campus activities but encourages each division to conduct activities autonomously. For example, each of Keio's faculties and graduate schools endeavor to give back intellectually to society without bias, actively holding public lectures and symposiums including research related to sustainability and conducting technology transfer of research findings. Conversely, the Facility Management Office, which supervises Keio facilities and equipment, plays a leadership role in the environmental burden caused by campus activities and is promoting policies to consistently reduce the amount of energy usage per square meter of total floor area. In order to cope with the drastic reduction in power supply capabilities caused by the Great East Japan Earthquake of 2011, Keio took measures to reduce its power usage, especially during the summer and winter seasons during the 2011 academic year. In the 2012 academic year, Keio took energy-saving measures throughout the year considering its accommodations for possible power shortages and also conservation of non-renewable resources and the environment.

Specifically, Keio University took institutional energy-saving measures such as raising the minimum temperature allowed for air conditioning; "delamping," or the reduction/removal of unnecessary light bulbs/fixtures; and decreasing the number of running elevators. In addition, "energy-saving patrols" were carried out in the summer, when the demand for power supply is at its peak, and students were encouraged to cooperate in energy-saving measures.

In the 2012 academic year, energy usage has increased on most of Keio's campuses, but a total increase of 3.6% when compared with the prior academic year can be largely attributed to the completion of and start of operations at the South Wing of Building No. 3 on Shinanomachi Campus. We are taking steps to minimize this increase and make continued efforts to reduce energy usage.

Keio University reports its activities in its Annual Report published in May of each year and on the official Keio University website.

On this report:

Keio University is a member of the Global University Leadership Forum (GULF), and a signatory of the International Sustainable Campus Network (ISCN) charter. This ISCN-GULF Charter Report covers the calendar year period from 2012 to 2013 (using all data which was available at the time of report publication for 2013 indicators). This report is a stand-alone document, with content drawn from other documentation developed by Keio University related to sustainability.

For questions or comments on this report, please contact:

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Principle 1 – Sustainability Performance of Buildings on Campus

Principle 1: To demonstrate respect for nature and society, sustainability considerations should be an integral part of planning, construction, renovation, and operation of buildings on campus.

A sustainable campus infrastructure is governed by respect for natural resources and social responsibility, and embraces the principle of a low carbon economy. Concrete goals embodied in individual buildings can include minimizing environmental impacts (such as energy and water consumption or waste), furthering equal access (such as nondiscrimination of the disabled), and optimizing the integration of the built and natural environments. To ensure buildings on campus can meet these goals in the long term, and in a flexible manner, useful processes include participatory planning (integrating end-users such as faculty, staff, and students) and life-cycle costing (taking into account future cost-savings from sustainable construction).

Management Approach to Principle 1 Topics

Main initiatives and results

Keio University promotes a reduction in energy usage as a priority issue. Keio currently promotes a reduction in energy usage as a priority issue. Keio has shown successful results in decreasing negative effects on the environment by installing energy-saving machines and equipment; the sustained collaborative efforts of both students and faculty/staff members to frequently turn off lights and recycle have also contributed to this success.

Overview of Keio's Principle 1 Goals

Topics	Goals and Initiatives		Results	
Priority topics (with units of measurement)	Objectives and targets (for reporting year, for the following year, and/or beyond)	Key Initiatives (in reporting year, and /or planned for the following and beyond)	Performance 2011/2012	Performance 2012/2013
Resource use				
Energy Consumption	Further reduction of energy consumption	<p>Gas-engine cogeneration systems (CGS) installed on each campus with the exception of Shiba-Kyoritsu Campus. Installation of two systems each on the Shonan Fujisawa Campus and Yagami Campus in 2000. By 2008, that number rose to nine throughout all campuses for a total electrical output of 2,800 kWh.</p> <p>By-product heat from gas engines used primarily in air conditioning.</p> <p>Moreover, efforts are being made to reduce the environmental impact of buildings by proactively utilizing natural energy and improving insulation when building new structures.</p>	<p>*Figures for the previous year in parentheses</p> <p>Mita Campus 108,186 GJ</p> <p>Hiyoshi Campus 185,037GJ</p> <p>Yagami Campus 173,421GJ</p> <p>Shinanomachi Campus 446,674GJ</p> <p>Shonan Fujisawa Campus 101,811GJ</p> <p>Shiba-Kyoritsu Campus 40,575GJ</p> <p>Affiliated Schools 32,981GJ</p> <p>Total 1,088,685GJ</p>	<p>*Figures for the previous year in parentheses</p> <p>Mita Campus 107,831 GJ (99.7%)</p> <p>Hiyoshi Campus 186,870 GJ (101.0%)</p> <p>Yagami Campus 176,883 GJ (102.0%)</p> <p>Shinanomachi Campus 523,871 GJ (107.5%)</p> <p>Shonan Fujisawa Campus 97,909 GJ (96.2%)</p> <p>Shiba-Kyoritsu Campus 41,724 GJ (102.8%)</p> <p>Affiliated Schools 35,222 GJ (106.8%)</p> <p>Total 1,170,310GJ (103.6%)</p>

<p>Electricity Consumption</p>	<p>Further reduction of electricity consumption (pursuing increased energy-saving measures to cope with the drastic reduction of power supplying capabilities of the Tokyo Electric Power Company (TEPCO) due to the Great East Japan Earthquake)</p>	<p>Under the electric power circumstances caused by the Great East Japan Earthquake, Keio University conducted energy-saving measures in the previous year which included handling the supply-demand balance for power and hikes in electricity rates and considerations for finite resources and conservation of the environment. Keio continued with these energy-saving measures in the 2012 year. Based on the "Act on the Rational Use of Energy," Keio currently reports its energy usage to the Ministry of Economy, Trade and Industry. Under this law, obligations for energy reduction are stipulated. Keio is making efforts to accomplish the energy conservation of "a reduction of at least 1% of annual average energy consumption (5-year average), looking in the mid-to-long term."</p> <p>(Reference) Keio Campuses Energy Usage for the Past 2 4 Hours http://setsuden.keio.ac.jp/chart/power_all.html</p> <p>(Reference) Energy Conservation Target for the 2012 Academic Year http://www.keio.ac.jp/ja/news/2013/kr7a430000bwhq3.html</p>	<p>*Figures for the previous year in parentheses</p> <p>Mita Campus 8,755,000KWh</p> <p>Hiyoshi Campus 13,249,000 KWh</p> <p>Yagami Campus 13,317,000 KWh</p> <p>Shinanomachi Campus 31,130,000 KW</p> <p>Shonan Fujisawa Campus 8,458,000 KWh</p> <p>Shiba-Kyoritsu Campus 3,393,000 KWh</p> <p>Affiliated Schools 2,921,000 KWh</p> <p>Total 81,223,000 KWh</p>	<p>*Figures for the previous year in parentheses</p> <p>Mita Campus 8,726,000KWh (99.7%)</p> <p>Hiyoshi Campus 13,648,000 KWh (103.0%)</p> <p>Yagami Campus 13,490,000 KWh (102.5%)</p> <p>Shinanomachi Campus 38,034,000 KWh (112.2%)</p> <p>Shonan Fujisawa Campus 7,909,000 KWh (93.5%)</p> <p>Shiba-Kyoritsu Campus 3,519,000 KWh (103.7%)</p> <p>Affiliated Schools 3,127,000 KWh (107.1%)</p> <p>Total 88,453,000 KWh (105.3%)</p>
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Gas Consumption	Further reduction of gas consumption	<p>Not only reduced gas consumption, but also reduced amount of smoke produced by making its boilers' heating process more efficient as a measure against air pollution caused by burning fossil fuels. (*Keio disposed of all oil-burning heat source equipment which had a major environmental impact in the 2011 year.)</p>	<p>*Figures for the previous year in parentheses</p> <p>Mita Campus 505,000 m³</p> <p>Hiyoshi Campus 1,238,000 m³</p> <p>Yagami Campus 965,000 m³</p> <p>Shinanomachi Campus 3,174,000 m³</p> <p>Shonan Fujisawa Campus 428,000 m³</p> <p>Shiba-Kyoritsu Campus 166,000 m³</p> <p>Keio-affiliated elementary, junior high, and high schools 100,000 m³</p> <p>Total 6,577,000 m³</p>	<p>*Figures for the previous year in parentheses</p> <p>Mita Campus 504,000 m³ (99.7%)</p> <p>Hiyoshi Campus 1,193,000 m³ (96.3%)</p> <p>Yagami Campus 1,005,000 m³ (104.1%)</p> <p>Shinanomachi Campus 3,392,000 m³ (97.5%)</p> <p>Shonan Fujisawa Campus 460,000 m³ (107.6%)</p> <p>Shiba-Kyoritsu Campus 164,000 m³ (98.9%)</p> <p>Keio-affiliated elementary, junior high, and high schools 104,000 m³ (105.%)</p> <p>Total 6,822,000 m³ (99.1%)</p>
Water Consumption	Further reduction of water consumption	<p>Uses rainwater and has installed water-saving equipment as water conservation measures. Additionally, water collected on the 3,600 m² roof of the Raiosha on Hiyoshi Campus is used to clean the restrooms. More reductions anticipated as renovations occur and more water-collection systems installed.</p> <p>Water-saving equipment also installed whenever restrooms are renovated. Water conservation achieved by installing low</p>	<p>*Figures for the previous year in parentheses</p> <p>Mita Campus 54,000 m³</p> <p>Hiyoshi Campus 154,000 m³</p> <p>Yagami Campus 94,000 m³</p> <p>Shinanomachi Campus 334,000 m³</p> <p>Shonan Fujisawa Campus</p>	<p>*Figures for the previous year in parentheses</p> <p>Mita Campus 56,000 m³ (103.6%)</p> <p>Hiyoshi Campus 163,000 m³ (106.2%)</p> <p>Yagami Campus 90,000 m³ (96.1%)</p> <p>Shinanomachi Campus 357,000 m³ (106.9%)</p> <p>Shonan Fujisawa Campus</p>

		flux, sensor sinks and toilet flush valves which consume less water.	52,000 m ³ Shiba-Kyoritsu Campus 29,000 m ³ Keio-affiliated elementary, junior high, and high schools 45,000 m ³ Total 762,000 m ³	54,000 m ³ (102.4%) Shiba-Kyoritsu Campus 28,000 m ³ (97.9%) Keio-affiliated elementary, junior high, and high schools 42,000 m ³ (93.6%) Total 790,000 m ³ (103.8%)
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Waste, recycling, local emissions, and non-compliance

Topics	Goals and Initiatives	Results
Waste	<p>●Waste Reduction Acting on the belief that the first step to waste and resource issues is to suppress the quantity of waste produced, Keio strives to become a paperless workplace by digitalizing its documents and installing combined FAX, scanner, printer, and copy machines with PDF-creating capabilities.</p> <p>●Drainage Appropriate water management performed by regularly monitoring the water quality criteria of chemical wastewater generated through hospital medical examinations or equipment used in experiments.</p>	<p>Mita 399 t Hiyoshi 475 t Yagami 191 t Shonan Fujisawa 207 t Shinanomachi 1,151 t Shiba-Kyoritsu 157 t</p> <p>Total 2,583 t</p>
Recycling	<p>●Reuse Effective use of resources by reusing envelopes and printing on the reverse side of used paper.</p> <p>●Recycle It is necessary to thoroughly sort waste first in order to recycle resources effectively. Raised the recycling rate by installing highly visible waste-sorting containers on all campuses and providing thorough sorting signs. Installed paper recycling boxes where student organizations recycle used paper products, such as unneeded copy paper, to improve paper recycling rates. Reexamined its sorting methods and placement of waste receptacles as a joint project with student organizations on Mita Campus. Special wastepaper collection receptacles installed since the 2006 academic year. Facilitated an environment able to recycle paper as recyclable waste by separating it from burnable waste. Significant improvement of recycling rate as a result.</p>	<p>*The recycling rate of total waste in parentheses.</p> <p>Mita 336 t (84.2%) Hiyoshi 156 t (33.0%) Yagami 165 t (86.3%) Shonan Fujisawa 82 t (39.8%) Shinanomachi 503 t (43.7%) Shiba-Kyoritsu 66 t (42.4%)</p> <p>Total 1,310 t (50.8%)</p>

Research/IT facilities and sustainability			
Users			
Building design aspects			
Architectural Design Guidelines and the Comprehensive Assessment System for Built Environment Efficiency (CASBEE)	Sustainable architecture	Design guidelines	As a part of the 150th Anniversary Commemorative Project in 2008, Keio conducted the construction and renovation of over 10 buildings. The Collaboration Complex "Kyosei-kan" and Independence Wing on Hiyoshi Campus were inspected by the standard of CASBEE by Yokohama City and rated S-rank (the highest ranking) as eco-friendly buildings. Environmental impact is considered in each building's design in an effort to construct sustainable architecture. Keio strives to keep an increase in power usage that accompanies facility expansion to a minimum while reducing power consumption at already existing facilities.

Principle 2 – Campus wide Master Planning and Target Setting

Principle 2: To ensure long-term sustainable campus development, campus-wide master planning and target-setting should include environmental and social goals.

Sustainable campus development needs to rely on forward-looking planning processes that consider the campus as a whole, and not just individual buildings. These processes can include comprehensive master planning with goals for impact management (for example, limiting use of land and other natural resources and protecting ecosystems), responsible operation (for example encouraging environmentally compatible transport modes and efficiently managing urban flows), and social integration (ensuring user diversity, creating indoor and outdoor spaces for social exchange and shared learning, and supporting ease of access to commerce and services). Such integrated planning can profit from including users and neighbors, and can be strengthened by organization-wide target setting (for example greenhouse gas emission goals). Existing low-carbon lifestyles and practices within individual campuses that foster sustainability, such as easy access for pedestrians, grey water recycling and low levels of resource use and waste generation, need to be identified, expanded and disseminated widely.

Management Approach to Principle 2 Topics

Main initiatives and results

In addition to complying with strict national and prefectural CO2 reduction targets, Keio University implements comprehensive campus-wide environment conservation activities such as the "Hiyoshi Green Plan" on Hiyoshi Campus.

Overview of Keio's Principle 2 Goals

Topics	Goals and Initiatives		Results	
Priority topics (with units of measurement)	Objectives and targets (for reporting year, for the following year, and/or beyond)	Key Initiatives (in reporting year, and /or planned for the following and beyond)	Performance 2011/2012	Performance 2012/2013
Institution-wide carbon targets and related achievements				
CO2 Emissions			*Figures for the previous year in parentheses Mita Campus 5,941 CO2-t Hiyoshi Campus 10,018 CO2-t	*Figures for the previous year in parentheses Mita Campus 5,923 CO2-t (99.7%) Hiyoshi Campus

			Yagami Campus 9,454 CO2-t	10,151 CO2-t (101.3%)
			Shinanomachi Campus 24,072 CO2-t	Yagami Campus 9,629 CO2-t (101.9%)
			Shonan Fujisawa Campus 5,615 CO2-t	Shinanomachi Campus 28,372 CO2-t (108.1%)
			Shiba-Kyoritsu Campus 2,245 CO2-t	Shonan Fujisawa Campus 5,379 CO2-t (95.8%)
			Keio-affiliated elementary, junior high, and high schools 1,853 CO2-t	Shiba-Kyoritsu Campus 2,311 CO2-t (102.9%)
			Total 59,198 CO2-t	Keio-affiliated elementary, junior high, and high schools 1,977 CO2-t (106.7%)
				Total 63,742 CO2-t (103.9%)

Master Planning

	Reduction Goals	Initiatives	Results
Energy Conservation Council	Set a target of 1% reduction of the energy consumption rate on each campus based on the figures for the 2009 academic year.	Implemented partial elevator service and delamping and modified the operating methods for air-conditioning and heating equipment. Additionally, old air-conditioning equipment and lighting fixtures are being replaced with highly-efficient equipment. Aiming to reduce energy use by installing motion sensors for lights in hallways and restrooms.	As a result of performing further energy reduction measures year-round in addition to upgrading to highly-efficient equipment, Keio was able to reach an approximate 17% reduction when compared with the 2009 base year.

Land-use and biodiversity Landscaping impacts and biodiversity			
Hiyoshi Green Plan	Safe use of land considerate of the geography and water cycle, and the conservation, recovery, and utilization of biodiversity.	Over 1/3 of Hiyoshi Campus is a massive green space. Its diverse geography and abundant plant life is anticipated to be properly managed over a broad range of fields, such as the conservation of biodiversity, disaster prevention, amenity allocation, and educational and research activities. In order to tackle these issues, Keio initiated surveys and conducted comprehensive consolidation of information, sharing the results throughout the university.	Main Results of Organizational Survey <ul style="list-style-type: none"> • Organization of basic information and creation of base map • Organization and survey of landslide disaster-related information • Organization and survey of plant life • Organization and survey of water cycle-related information • Organization and survey of biodiversity • Assessment of current state of general management and future issues concerning the natural area • Organization of equipment, facility, and building information <p>Coordinated the direction of basic plans and strategies based on the results of the above data collection and surveys.</p>

Principle 3 – Integration of Facilities, Research, and Education

Principle 3: To align the organization’s core mission with sustainable development, facilities, research, and education should be linked to create a “living laboratory” for sustainability.

On a sustainable campus, the built environment, operational systems, research, scholarship, and education are linked as a “living laboratory” for sustainability. Users (such as students, faculty, and staff) have access to research, teaching, and learning opportunities on connections between environmental, social, and economic issues. Campus sustainability programs have concrete goals and can bring together campus residents with external partners, such as industry, government, or organized civil society. Beyond exploring a sustainable future in general, such programs can address issues pertinent to research and higher education (such as environmental impacts of research facilities, participatory teaching, or research that transcends disciplines). Institutional commitments (such as a sustainability policy) and dedicated resources (such as a person or team in the administration focused on this task) contribute to success.

Management Approach to Principle 3 Topics

Main initiatives and results

Keio University implements public, hands-on educational programs and environmental awareness projects with the local community while enhancing its curricular activities. Moreover, it actively conducts research in cooperation with the home community, including joint research in collaboration with local governments to construct social infrastructure and environmental conservation activities abroad.

Overview of Keio’s Principle 3 Goals

Topics	Goals and Initiatives		Results
Priority topics (with units of measurement)	Objectives and targets (for reporting year, for the following year, and/or beyond)	Key Initiatives (in reporting year, and /or planned for the following and beyond)	Performance
Topical Integration			
Established the International Program for Environmental Innovators in the Graduate	This course exceeds the boundaries of the humanities and natural sciences to conduct practical research on the handling and mitigating climate change in developing countries across Asia and Africa from the standpoints of environmental business, policy, design, and social entrepreneurship. It aims to produce innovative		Established in the 2011 year. As of May 31, 2013 Number of students enrolled: 68

<p>School of Media and Governance</p>	<p>environmental leaders equipped with sense for both business and the public interest. There are three courses available: the one-year basic course, two-year master's course, and three-year doctoral course. All class and research seminars are held in English, and we welcome international students from countries around Asia and Africa. Japanese and international students alike research mitigation and adaptation strategies in regions and cities in Asia and Africa as the program supports the domestic and international partnerships to do so. Upon completion, students of the one-year basic course will receive a "Certificate of Completion for the Basic Environmental Innovator Course." Master's and doctoral students will acquire their "Environmental Innovator" and "Advanced Environmental Innovator" certifications, respectively, in addition to their degrees.</p> <p>*This course receives support from the Leading Creative Science and Technology Development Grant provided by the Ministry of Education, Culture, Sports, Science and Technology and the "International Environment Leaders Training Program" as part of the integrated promotion of social system reform and research development. http://ei.sfc.keio.ac.jp/</p>	
<p>Global Environmental System Leaders Program established in the Graduate School of Media and Governance and Graduate School of Science and Technology.</p>	<p>The purpose of this program is to generate global environmental systems which are capable of responding expeditiously and appropriately to environmental changes on a global scale and the leaders who can utilize them. It integrates the specialized fields of social systems, including environment, energy, ICT, policy, and international relation with the aim of forming an educational center for future creative social leaders who will implement global environmental systems under a multidisciplinary international framework. It is a coherent five-year program in which students spend their two-year master's program in the Graduate School of Media and Governance and a three-year doctoral program in the Graduate School of Science and Technology. Hardware technology intended for monitoring and controlling a real-space environment and ICT which measures the impact and causes of environmental change are linked and coordinated. This program trains individuals who can design and construct global environmental systems capable of (1) adapting to usual, moderate environmental changes over the mid-to-long term; and (2) immediately responding to changes which cause drastic damage on an environment in times of crisis. With the design ability and knowledge of social rules regarding environmental issues and the systems intended for the purposes listed above, this program trains individuals who generate global environmental systems that</p>	<p>Established in the 2013 academic year</p> <p>As of May 31, 2013 Number of students enrolled: **</p>

	<p>are multidisciplinary, integrating technology and social rules.</p> <p>The course curriculum is a total of five years: a two-year master's program and three-year doctoral program. Under the system of the International Academia-Industry-NPO Collaborative Advisory Group, the curriculum incorporates international training courses (international fieldwork/practical internships) which blend remote and face-to-face interaction with internationally acclaimed universities and research institutions from around the world and universities and research institutions in regions plagued with environmental issues. In this program, master's and doctoral candidates are required to complete fieldwork and internship abroad for three months during the master's course and a total of six months during the doctoral course at collaborating or partner institutions (universities, research institutions, corporations, and NPOs other than partner institutions with which Keio has exchange agreements or has conducted joint research). In an international environment, individuals grow to possess the practical and research capabilities to lead the implementation of global environmental systems. Students who complete the program will acquire the "Global Environmental System Leader (Doctorate)" certificate in addition to the academic degree of "Program for Leading Graduate Schools (Global Environmental System Leaders Program."</p> <p>*This program has been adopted as a Program for Leading Graduate Schools <Multidisciplinary Type> by the Ministry of Education, Culture, Sports, Science and Technology (MEXT). http://gesl.sfc.keio.ac.jp/index.html</p>		
<p>Social Integration</p>			
<p>Held "Environment Week"</p>	<p>"Environment Week" held each June to think about environmental issues as a part of the festivities to welcome new students.</p>	<p>Implement various activities to create interest in the environment, such as clean-up activities between students and members of the community and panel discussions with environment conservation clubs and organizations.</p>	<p>•</p>

Research & Education projects on Laboratory/IT facilities and sustainability

<p>Experimental studies in campus energy management begun towards reducing CO2 on Keio's university campuses.</p>	<p>Established Research Center on Environment and Energy</p>	<p>The following ten activities were implemented in this experimental research.</p> <ol style="list-style-type: none"> (1) Compiled energy consumption statistics for Keio University from FY 2005 onwards and a database of major energy facilities as part of the data infrastructure in the total management approach to reduction of carbon dioxide (CO2) emissions. (2) Installed a sensor network capable of recording full-time measurements for electricity consumption and the educational environment. Experimental data from the energy control program was acquired from classrooms on Mita Campus, and data collection has begun on Yagami Campus as well. (3) Constructed a mathematical model of power interchange and its payment system and developed the model as a numerical analysis simulator. (4) Organized the challenges regarding the power interchange billing system and carried out financial investigations into the energy billing system. (5) Environment sensor networks installed and operated on Mita Campus in the FY 2011 and expanded to Yagami Campus in the FY 2012. Acquired data for real time measurements. (6) Refined evaluation index for overall management of energy-using facilities. (7) Determined the characteristics of the ejector-type cool box system by manufacturing a prototype. Produced solar thermal panels for the hot-water supply system and a heat-pump connected system and began acquiring experimental data for systemization. (8) Changed control logic for air conditioners on Yagami Campus and conducted experimental research while maintaining intellectual productivity as a condition. (9) Selected a candidate heat-storage hydrate material appropriate for air conditioning, and conducted thermophysical measurements and experiments on crystal growth and analysis. (10) Increased reliability of calculations for total amount of power generated by employing a mathematical model which examined possible ways to stabilize the amount of power generated using multiple facilities based on data from photovoltaic panels and small wind power generators.
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Commitments and resources for campus sustainability

APPENDIX I: Options for more detailed target and report topics and indicators

To provide more specific options for target setting and reporting for signatory organizations to choose from in the table reporting as outlined above, additional detail to the topic group options mentioned above under each principle is given below. For this, topic groups are broken down into possible individual topics. Furthermore, cross-references are provided to GRI and STARS indicators for reporting organizations that want to integrate their Charter Report with a more detailed sustainability report, or that want to use the indicator compilation methods outlined by GRI or STARS as a basis for a more in-depth approach to their chosen target and reporting topics. Integration of the Charter Report with a more detailed sustainability report as well as use of GRI or STARS indicator definitions are suggested as options and are not required.

- Detailed indicator descriptions (indicator protocols) for GRI indicators are publicly available at:
<http://www.globalreporting.org/ReportingFramework/ReportingFrameworkDownloads/G3GuidelinesIndividualDownloads.htm>
- A technical manual on the AASHE STARS system can be found at:<http://stars.aashe.org/pages/about/3993/>

1. Introduction

Topic groups	Topics	Related GRI and STARS Indicators (for detailed definitions see website links above)
The organization	Name	GRI 2.1 : Name of the organization
	Location and regions/markets served	GRI 2.4: Location of organization's headquarters
		GRI 2.7: Markets served
	Key activities/services	GRI 2.2: Primary brands, products, and services
	Size (e.g. number of students and degrees, members of faculty and staff, and annual budget)	GRI 2.8: Scale, incl. number of employees, net revenues and quantity of products/services provided
		GRI EC4: Significant financial assistance received from government
	Operational and governance structure	GRI 2.3: Operational structure of the organization
GRI 4.1: Governance structure of the organization (e.g. including committees)		
Ownership/funding basis	GRI 2.6: Nature of ownership and legal form	
The report	First of subsequent Charter Report?	
	Reporting period and boundary	GRI 3.1: Reporting period
		GRI 3.6: Boundary of the report (e.g. whole organization or only selected divisions?)
	Freestanding Charter Report or integrated ,e.g. in more detailed Sustainability Report?	
Contact	GRI 3.4: Contact point for questions regarding the report and its contents	

2. Reporting on Principle 1

Topic groups	Options for target topics	Related GRI and STARS Indicators (for detailed definitions see website links above)
Resource use	Energy use (per floor area or total), possibly per type of building	GRI EN3: Direct energy consumption (See also STARS OP7)
		GRI EN4: Indirect energy consumption (See also STARS OP7)
		GRI EN5: Energy saved by conservation
		GRI EN7: Indirect energy conservation results
		STARS OP8: Renewable energy
	Embedded (grey) building energy	
	Water use	GRI EN8: Total water consumption (See also STARS OP22)
		GRI EN10: Recycling and reuse of water
	Energy and water costs, and savings achieved	
	Overall purchased products/materials (e.g. paper)	GRI EN1 Materials used by weight and volume
Other ...		
Waste, recycling, local emissions, and non-compliance	Waste and recycling	GRI EN22: Weight of waste by disposal method (incl. recycling) (See also STARS OP 18)
		STARS OP17: Waste reduction
	Waste costs, and savings achieved	
	Emissions contributing to local air pollution	GRI EN19: NO _x , SO _x and other significant air emissions
	Incidents of non-compliance with environmental regulations	GRI EN23: Number and volume of significant spills
		GRI EN28: Fines/sanctions for environmental non-compliance
Other ...		
Research/IT facilities and sustainability	Energy use in laboratories/IT facilities	
	Chemicals consumed	
	Hazardous waste from research/IT facilities	GRI EN24: Transported/treated hazardous waste (See also STARS OP21)
	Other ...	
Users	Handicap access	
	Indoor air quality	STARS OP 3: Indoor Air Quality
	Stakeholder participation in planning (integrated design)	
	Other ...	STARS OP 6: Food Purchasing
Building design aspects	Sustainable building standards applied and explored	STARS OP 2: Building Design & Construction
	Long-term use flexibility	
	Life-cycle costing	
	Landscape integration of building design	
	Other ...	

3. Reporting on Principle 2

Topic groups	Options for target topics	Related GRI and STARS Indicators (for detailed definitions see website links above)
Institution-wide carbon target	Carbon emissions (organization-wide)	GRI EN16: Direct & indirect (Scope 1&2) emissions (See also STARS OP4)
		GRI EN17: Other (Scope 3) GHG emissions (See also STARS OP4)
		GRI EN 18: Initiatives to reduce GHG emissions (See also STARS OP5, PAE5)
Master planning	Coverage of campus area (in %) by master planning initiatives	STARS PAE3: Physical Campus Plan
	Other ...	
Transportation	Frequency of traffic surveys	
	Bicycle and pedestrian access	
	Estimated commute distance or commute energy use per person	GRI EN29: Significant environmental impacts of transport (See also STARS OP15, OP16)
	Urban mobility integration planning	
	Other ...	STARS OP 14: Campus Fleet
Food	Food supply chain and environmental impacts (e.g. carbon intensity)	STARS OP 6: Food purchasing
	Fair trade food sourcing	STARS OP 6: Food purchasing
Social inclusion and protection	Diversity (faculty, staff, and students)	GRI LA13: Diversity in management and staff (See also STARS PAE6, PAE7)
	Incidents of discrimination	GRI HR4: Incidents of discrimination; actions taken
	Access to education (in case of substantial fees)	STARS PAE10: Affordability and Access Programs
	Open access spaces for interaction	
	Access to services and commerce	
	Participative campus planning integrating users and neighbors	GRI 4.14: Stakeholder groups engaged
		GRI 4.16: Approaches to stakeholder engagement, including frequencies
	Working conditions, including minimum wages, collective bargaining, and health and safety	GRI EC5: Ratio of standard entry wages to local minimum wage (See also STARS PAE11)
		GRI HR5: Operations at which right to freedom of association/collective bargaining may be at risk
GRI LA7: Injury and absenteeism rates		
	GRI LA8: Serious disease prevention and risk-control for staff, their families and the community	
Other ...		
Land use and biodiversity	Land and building reuse (brownfield development, adaptive renovations)	
	Landscaping impacts and biodiversity	GRI EN11: Land managed near protected areas
		GRI EN14: Management of biodiversity impacts
Other ...		

4. Reporting on Principle 3

Topic groups	Options for target topics	Related GRI and STARS Indicators (for detailed definitions see website links above)
Topical integration	Programs and projects that connect facilities, research, and education	
	Labeling and number of courses that have an integrated perspective on sustainability as a key component	STARS ER5: Sustainability course identification (See also GRI PR3) STARS ER6, ER7: Sustainability-focused and -related courses
	Courses and/or research that transcends disciplines	Stars ER 19: Interdisciplinary Research in Tenure and Promotion STARS ER4, ER15: Sustainability materials and publications; sustainability research identification
	Other ...	STARS ER 16: Faculty involved in Sustainability Research STARS ER12: Sustainability Immersive Experience
Social integration	Programs and projects that connect campus users with industry, government, and/or civil society	GRI EC8: Infrastructure, investments and services provided primarily for public benefit (See also STARS PAE19) GRI SO1 : Programs to assess and manage impacts of operations on communities GRI SO3 : Percentage of employees trained in organization's anti-corruption policies
	Programs to further student interaction and social cohesion on campus	
	Courses that use participatory and project based teaching	
	Behavioral programs aiming at more sustainable actions by students, staff, or external community members	STARS ER1, ER2: Student sustainability educators program and outreach campaign
	Other ...	
Research and education projects on laboratory/IT facilities and sustainability	Research and education on mitigating energy use in laboratories/IT facilities	
	Research and education on mitigating hazardous waste from research/IT facilities	
	Other ...	
Commitments and resources for campus sustainability	Existence of an organization-wide sustainability policy that integrates academic with operational issues?	GRI 4.8: Internal principles relevant to economic, social, and environmental performance (See also STARS PAE1, PAE2, PAE4)
	Commitment to external sustainability principles and initiatives (this Charter and other)	GRI 4.12: Externally developed economic, environmental, and social principles the organization endorses
	Dedicated resources (processes, human and financial resources) for campus sustainability	GRI EN30: Total environmental protection expenditures and investments by type
	Other ...	