The IARU Campus Sustainability Project workshop was held at Yale University from 7-9 March 2011. There were representatives from eight member Universities, with the University of Oxford and Peking University sending their apologies.

The workshop was structured over three days, with sessions on the IARU Fellowship program, reports on key initiatives being undertaken by Universities and discussions on opportunities to collaborate and expand the project.

The following was agreed by the representatives:

- The group should explore options to collaborate/exchange info on Green ICT programs, an area where opportunities for cost effective reductions in energy/emissions exist and the development of Green Lab standards (there is currently no real standards to define a green lab in the sector and IARU, with its research focus seems in a good position to provide meaningful input into this area. There is also an opportunity for researchers and practitioners to collaborate.

- Collaborating on the development of funding and cost recovery strategies adaptable to the particular financial circumstances of the Universities and the information needs for decision makers.

- Building community engagement models particularly outreach to student and academic groups on issues of campus sustainability. There was also some support for engagement on campus sustainability in Universities outside the IARU - for example, engagement with International Sustainable Campuses Network.

- Development of online education packages - interactive modules for general use that building a basic foundation for designing, funding and operating campus/corporate environmental management programs.

- Identification of campus pilot programs between sub group groups within IARU - where the collaboration make sense (similar size/scale of operation; similar infrastructure etc) - with the project results being reported and analyzed by the larger group.

- Running web based 2-hour workshops that would involve a broader range of people/specialists at each IARU university - with a focus on a specific topic (eg. lowering carbon foot print of site lighting; developing energy efficiency strategies of fume hoods; developing sustainable landscapes etc)

- Further development of the knowledge base on the IARU website, by establishing a library of Fellows reports and project case studies.

The representatives also supported the continuation of the IARU Fellowship program, with all those present at the workshop reporting that the 2010 experience was positive and yielded good outcomes that have been integrated into their respective campus sustainability programs. The participation in the 2011 Fellowship will be finalized by 1 April 2011.

The representatives also agreed with the “Future Direction” proposals outlined in the Report to IARU Presidents, including staging an international conference/forum on campus sustainability, which could include streams for collaboration with students and academics/researchers.

The general consensus was that this workshop was very productive with the extra day (bringing it to three days) giving more time for detailed discussions on initiatives and future planning.
Sustainable Campus Program & Sustainability Fellowships Report to Presidents

IARU has collectively agreed to establish a program in which individual members commit to improving their environmental performance. As a group, they have also committed to developing an approach to campus sustainability that will be an example and provide leadership within the Sector. The current details of the IARU Campus Sustainability program are on the IARU website.

The following report provides a summary of the members’ latest available campus environmental performance against the goals each has established. In some cases more detailed reports are available from the respective University and subject to their agreement, these will be linked from the IARU website. At the time of drafting this paper, the report from Peking University was not available. This will be provided as soon as it is received.

In addition to summarizing the members’ reports, this report also provides details of the IARU Fellowship Program in 2010.

Progress to date

Since the launch of the IARU Sustainability Project in 2009, there has been significant progress. All members now have an Environmental Sustainability Department (or equivalent) and have established effective goals to improve their environmental performance and reduce their emissions.

The IARU Sustainability Fellows initiative has expanded to include all Universities. Several of the projects undertaken by the Fellows have been integrated into campus environmental programs and are yielding results.

An IARU sustainability website has been developed and was formally launched at International Science Congress on Climate Change held in Copenhagen. The website includes a “campus sustainability tool kit” and from 2010, a Campus Sustainability “How – to” Guide which was developed in part by an IARU Fellow (see details in summary below).

As an overview of current performance, while there have been significant improvements in all programs established by IARU members, the outcomes in 2009/2010 have been varied. Some Universities have had small increases in emissions, while others have had reductions. Where there have been increases these are largely attributable to growth in campus population, building footprint and/or expansion of research activities. These emissions increases were anticipated in the early stages of this project, as several members have only recently formalized their programs. Consequently the impact of these new programs, within an environment of campus growth, may take 2-3 years before they are reflected in the metrics.

Notwithstanding this, there are some encouraging signs. The increases are much less than would be expected and where measured against intensity metrics such a per capita, per square meter or research loads, there are reductions against ‘business as usual’ models. However, in the longer term, absolute reductions are the key to making any meaningful contribution to improved environmental performance and are necessary for IARU to meet its challenge of achieving sector leadership.

Current membership – IARU Campus Sustainability Team

The following are the members of the team nominated by their respective Universities:

Dr Julie Newman, Yale University  
Hans Halvorsen, University of Copenhagen  
Professor Hanaki Keisuke, The University of Tokyo  
Michael Bienias, University of Cambridge  
Martin Whiteland, University of Cambridge  
Dr Dominik Brem, ETH Zurich  
Lina Goh, National University of Singapore  
Jenny Eklund, University of Oxford (appointed during the project and attended the workshop at NUS)  
Phillip Pike, University of Oxford (attended workshop at University of Copenhagen)
Future Direction

Given that campus growth is inevitable (and desirable), IARU members will need to develop strategies that reduce energy and water consumption (particularly waste water and energy), both through engineered solutions and behavioral change. The programs that are currently in place will develop over time and undoubtedly achieve the targets set by the universities provided institutional and community commitment is maintained. Therefore consideration should be given to expanding the strategic direction of the IARU Sustainability Project to achieve the goal of sector leadership. The expanded program would build stronger collaborative links and include the following:

- Share experiences to identify good and best practice community and operational models for improving the campus environmental footprint and reducing the carbon intensity of University activities.

- Review programs outside the IARU and tertiary sector, to identify cost effective solutions (both behavioral and engineered) for improving environment performance. Within operational activities, a greater emphasis placed on improving the efficiency of existing buildings and campus infrastructure (for example, by re-calibration of plant and equipment, reviewing set points for heating, ventilation and air-conditioning, improving thermal efficiency, minimizing leakage, automating systems, metering of energy and water consumption).

- Review programs for improving the energy efficiency of information and communications technology on campus, including direct and indirect (space cooling) energy consumption.

- Enhance the focus on water conservation within the IARU members’ environmental plans.

- Consider the viability for metrics measuring bio diversity and the ecological integrity of campuses.

- Develop strategies for creating sustainability as a community value that influences individual behavior, teaching and research practices as well as, changing comfort and business expectations (for example, building greater tolerance for lower internal temperatures in winter and/or higher temperatures in summer).

- Develop media that will promote engagement on campus sustainability within a broader range of Universities particularly in the developing world.

A specific project that has been canvassed by the Chair and other members of the IARU, is the viability of staging an International Campus Sustainability Conference, which would allow colleagues from Universities outside the IARU to convene and discuss good/best practice approaches and opportunities for collaboration on key initiatives. The conference could be designed with forums involving academics and campus sustainability practitioners, as well as students – allowing a broad program that included discussions on the development of education for sustainability curriculum using opportunities within campus initiatives. This Conference would build on the IARU success in coordinating previous conferences and forums, and would assist in meeting the goal of establishing sector leadership in this area. The conference could also engage other groups working in this area, such as the International Sustainable Campuses Network (http://www.international-sustainable-campus-network.org/).

These matters will be discussed in more detail at the Campus Sustainability Team workshop being held at Yale University in March 2011 (noting this paper is being drafted in February 2011 to meet the deadline for tabling documents for the Presidents’ Meeting in April 2011). A report on this discussion and any changes/amendments from that team will be forwarded for tabling at the Presidents’ Meeting.

In addition to the above, the further development of the IARU Campus Sustainability website will be discussed at the workshop, with particular emphasis on creating a “library” of the reports from IARU Fellows and enhancing the current “toolkit” to make it an effective on-line education tool.
Proposal

In order to achieve the objectives of an expanded program, resources will be needed. While some of the initiatives could be undertaken as part of IARU Fellowships, other may be dedicated projects.

Therefore, subject to agreement on expanding the project, we seek approval for a one off grant of US$15,000, which would be used to cover the cost of engaging students and/or staff, to undertake the following work:

- Development of new web based functionality, including an on-line education program for general use by students and practitioners within the Sector and a knowledge base comprising reports by IARU Fellows and relevant case studies
- Complete a review of good and best practice environmental initiatives across the Sector and identify opportunities to integrate into IARU programs
- Identify opportunities to collaborate (and/or exchange information) on relevant projects/initiatives within IARU membership
- Coordinate the staging of an international conference/forum, working with the IARU Secretariat
- Work with IARU members to develop metrics to measure/benchmark the collective environmental performance of the Alliance

The timeline for this project would be completion by EOY 2012.

Brief Summary – IARU Member Reports

Yale University

Yale University has established a comprehensive Sustainability Strategic Plan with goals across a range of areas including: greenhouse gas emissions; waste reduction; water conservation; green building design and operations; transportation and procurement. The latest campus report indicates the following achievements against targets since the implementation of the plan:

- GHG Emissions: 6% reduction against 2005 levels
- Waste reduction: 12% decrease in solid waste to landfill from 2009 levels
- Water: 13% reduction against 2009 levels
- Green Buildings: 8 LEED Certified buildings/renovations and 5 LEED certified laboratory spaces completed on campus.

The University is also running a number of projects including Green Laboratory and Green Workplace Certification; real time energy “dashboards”; sustainability micro loan fund; and a campus wide compost trial. Additionally, Yale is engaged in broader initiatives such as the Community Carbon Fund (which supports carbon mitigation projects in the wider community) and the Global Climate Action Coalition (which involves students from 11 Universities in 8 countries)

University of Copenhagen

The key activities and achievements for CPH in 2010 included:

- Ongoing implementation of technical energy efficiency projects
- Development of new funding model for energy investment
- Development of building programs with high level sustainability performance targets
- Implementation of an improved energy management system
- Rollout of Green Action campaigns
- Implementation of a Green IT Action Plan
The following is the latest available data for campus environmental performance (EOY 2009, against 2008):

- Total energy consumption reduced by 8.9%
- CO2 emissions reduced by 2.4%
- CO2 per person (man year) reduced 6.4%
- Electricity consumption reduced 0.5%
- Heat consumption reduced by 13.2%

(2011 report will be made available in April/May 2011.)

**The University of Tokyo**

The University of Tokyo has established the Todai Sustainable Campus Project (TSCP) and set a target of reducing GHG emissions from “non experimental activities” (that is emissions reduced from campus teaching and operational activities) by 15% by 2012. This will require a reduction of 14 253 tons CO2e, per annum. However, the construction of new buildings has increased the emissions by 14396 tons pa, thus creating a need to reduce emissions by 28649 tons pa overall, to meet the original campus sustainability targets.

To achieve the current goals, TSCP has:

- Established a program to upgrade light fitting to more energy efficient technology, as well as replacing large scale heat generation machines and boilers.
- Conducted detailed surveys of heating/cooling plant and equipment in 35 buildings.
- Established programs to promote better energy use by faculty, staff and students.

This is expected to generate savings of 17385 tons CO2 e per annum (pa) and when combined with a decrease in carbon intensity of grid electricity and sequestration through the University Forest Station, which will result in further reduction of 15866 ton CO2 e pa, the total expected reduction against current carbon profile will be 33251 tons pa (in excess of the target established by the University).

**ETH Zurich**

The University has established an environmental management strategy including targets for the reduction of greenhouse gas emissions, including those directly attributable to campus activities, as well as staff/student commuting and travel.

The energy source for campus heating has been progressively changed from direct burning of fossil fuels to electricity (noting that electricity in Switzerland is largely generated from low CO2e sources) and as a consequence, the carbon profile per square meter and per capita has fallen, despite growth in the use of electricity generated by the expansion of the building portfolio.

Key initiatives and achievements include:

- Science City Campus; Two geo thermal storage fields have been established on the new campus, which will progressively allow buildings to operate from a renewable energy source. When the project is completed in 2023, campus emissions will be reduced to “close to zero”.
- Waste Heat recovery: The University operates several large central cooling plants. The waste heat from this plant is captured and reused (approximately 9.5 gigawatt per annum) thereby reducing demand on other energy sources.
- Paper use: Programs to reduce paper consumption have been established resulting in approximately 5% reduction in 2009 (against 2008 consumption figures). The percentage of recycled paper has increased significantly and currently sits at 46.5%.
- Waste management: Recycling programs have been established, particularly promoting safe reuse of chemicals and recycling of solvents, IT and electrical waste.
• Eco Works Platform: The University operates a 24 hour workshop allowing staff/students to submit ideas for improving campus environmental performance. The ideas are subject to rigorous evaluation as part of the workshop and those that are successful are funded. In 2010, the successful projects included programs to link processes for waste management, food production and agricultural biodiversity at Science City campus; group education programs, using peer group dynamic to develop more sustainable lifestyle choices and behaviour; establishing an Electric Bike rental system that links the main ETH campuses.

• Biodiversity – Establishing various programs at Science City campus to protect and enhance biodiversity values, protection of amphibians and endangered wild bee species.

University of California, Berkeley

The University has an established environmental management plan. The following lists some of the key achievements/initiatives in 2009/2010:

• Greenhouse emissions were reduced by 4.5% (against 2008 levels) and by 27% when measured against per $1000 of research expenditure (against 1990 levels). The University will need to reduce emissions by 50K tons per annum to meet its 2014 target.

• Energy consumption has been reduced by 11.5M (million) kWh since 2005, through combinations of projects that improve the efficiency of new and existing buildings.

• A second campus building was certified to LEED Gold standard.

• Solid waste to landfill was reduced by 12%.

• The fuel use from fleet and commuter vehicles was reduced by 28.7% against 1990 levels), exceeding the target set in the plan (25%). All vehicles purchased in 2009 were “green” (low carbon vehicles) bringing the green fleet to 18% of University vehicles.

• CalDining purchase of sustainable food increased by 3% bringing the total purchase to 26.8%.

• Water usage decreased by 1.2% last year, resulting in a 20% reduction since 1990.

• Bicycle commuter numbers have increased by 20% to approximately 5100 daily riders.

A wide range of other initiatives were also established, such as electronic submission of dissertations; academic programs to promote sustainability education/research and to engage departments on campus sustainability; green department and event certifications; development of green cleaning policies; on-line material exchange; ride share programs.

University of Oxford

University of Oxford established a new Carbon Management Strategy which was approved by Council in January 2011. The key goal is to reduce Scope 1 and 2 CO2e emissions by 11% by 2015/2016 and by 33% by 2020/2021 (against 2005/2006 levels). Targets have also been set for Scope 3 emissions related to commuter and air travel.

Growth in the University infrastructure (the completion of new capital works) saw building related emissions rise by 1.9% in 2010, though when broken down there were positive signs reflected in reductions related to energy used for personal comfort (i.e. oil heating; medium temperature hot water; gas).

The following details the initiatives undertaken by the University in 2010:

• Energy savings: The University has invested £525K in a range of plant and equipment upgrades (heat recovery, ventilation, insulation, lighting etc) which has saved 624 tonnes CO2e emissions per annum. Currently reviewing operations of 24 hour laboratories to identify opportunities to reduce energy and water use.
• **Community education**: developed energy and business travel toolkits for staff, as well as running monthly “surgeries” for building managers and administrators to discuss energy and water saving measures.

• **Building Design**: All new buildings will be designed to meet the requirements of Building Research Establishment Environmental Assessment Method (BREEAM) Excellent rating. A “Sustainable Building Guide” is currently being developed for release in 2011.

• **Water and Waste**: Water and waste management strategies are being developed for approval in 2011

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**University of Cambridge**

The University of Cambridge formalized its Carbon Management Plan in 2010 which requires a 34% reduction of building generated emissions which are not related to scientific and technical research. The targeted reduction is in absolute terms benchmarked against 2005 levels.

There has been an approximately 9% increase in emissions since 2005 and this can be largely attributed to the growth and success in teaching/research activities. However, when normalised for these factors, emissions per unit of total income have reduced by 16.34%.

The University has also committed to reduce its construction waste to landfill by 50% by 2012.

The University has established the following initiatives:

- Investment program: The University has established funding of £2M per annum in a program to reduce carbon emissions. Existing programs (including participation in the UK Education Carbon Management Scheme) continue, with a rolling fund of £750K being established to service energy conservations initiatives.

- Electricity Incentivization Scheme: The scheme makes departments more accountable for energy costs, and has resulted in savings of 3606 tones CO2e (against business as usual) in the first year of operation.

- Building design: The University design principles require integrated passive design such as natural ventilation, exposed thermal mass and night time cooling where practical, to reduce the carbon footprints of buildings. New buildings over 1000m2 are assessed in accordance with BREEAM standards, with a requirement that they target a rating of “Excellent” (with “Very Good” being the minimum rating accepted). To date, 8 buildings have been assessed under this scheme.

- On site energy: 10% of energy requirements of new buildings are provided from onsite renewable generators, such as Ground Source heat pumps; photo voltaic panels; biomass boiler; and labyrinth air pre treatment system.

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**National University of Singapore**

NUS has completed an inventory of campus greenhouse gas emissions (energy, staff air travel, and vehicle fleet and commuter miles) and has set significant targets for reduction/efficiency (i.e. 23% reduction against business as usual, in GHG levels inventoried by 2020). A growth in the net campus emissions from 120,705 tons in Academic Year (AY) 08/09 to 138,003 tons in AY09/10 was registered and this was due mainly to new buildings and research facilities. However, for AY 09/10, the university managed to achieve 4,883 tons reduction against the targeted emission level through a series of GHG reduction programs.

The other key issue for NUS is water conservation and while overall consumption increased by 8.5%, consumption on a per capita basis was reduced by 2.1%. 

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2011 IARU PRESIDENTS’ MEETING
The University has established a number of initiatives that will progressively improve the campus carbon footprint and build strong environmental awareness within the community. These include:

- **One Degree Up**: Increasing the temperature settings for air-conditioning to 25 degrees. In the first six months of operation, this program saved an estimated 3,320 tons of CO2e.

- **Water conservation**: Installation of water efficient infrastructure, including water efficient shower heads and taps; flow regulators and improved water flow rates. As a result several campus buildings have been certified with the water efficient label in 2010.

- **Metering infrastructure**: The project is evaluating all existing metering (electricity, water and chilled water) and to ensure meters are installed in all campus buildings, allowing building managers to monitor performance and identify energy trends and hot spots. These data will be used to identify energy conservation/efficiency projects.

- **New building design**: With the introduction of the BCA Green Mark Scheme, NUS established procedures that imposed more stringent ESD requirements on their new and existing buildings. These requirements include 25% energy savings in new building and 15% efficiency in existing buildings – compared to the FY07/08 consumption benchmark. Funding has also been established to upgrade 23 existing buildings to meet Green Mark Certification standards by 2020.

- **University Town**: The planning for this large development emphasized sustainability and protection/enhancement of biodiversity, and as consequence the project was given the Green Mark District Gold Award by the Building Construction Authority of Singapore.

- **Project ZeroWaste**: The project is in its third year and has seen steady improvement in the amount of waste diverted from landfill, and resources recycled or reused. The recycling rate (including food waste) is currently at 15.14% compared to 3.23% in the benchmark year (FY07/08).

In addition to these initiatives, NUS became the first organization in Singapore to be awarded the Eco-food Court label, which recognized a range of environmentally sustainable design and operating features in the campus canteen.

The University is also managing a range of campus community awareness programs (such as Earth Hour; Interhall environmental awards; climate change cafes; movie screenings etc) to influence individual behavior and improve environmental performance.

**Peking University**

The Peking report was not available at the time of writing, though the University has established a very innovative and wide ranging program. At the 2010 meeting of IARU Presidents, the PKU President Zhou Qifeng, confirmed his University’s commitment to building a “Green Campus” and raising environmental awareness on campus, in particular by encouraging students to initiate and join in activities aimed at improving the ecological environment, e.g. paper recycling, tree planting, etc. The University has launched a campus sustainability website operated by its Sustainability department, though at this time it is still being translated into English (which will allow use by a wider international audience). This paper will be updated when a more detailed report is received.

**Australian National University**

The ANU established its first environmental program in 1999 and is currently in its third generation Environmental Management Plan (2009-2015) which covers a broad range of issues, including emissions reduction, water conservation, resources management, biodiversity, transport and community awareness and education.

The University had a very small growth of 0.1% in campus emissions (Scope 1, 2, 3) in 2009/2010 (by comparison with 2008/2009. Note there was a 2.2% absolute reduction in 2008/2009). This is considered a positive outcome in the interim, given the overall growth in buildings, research and population during the period. Concurrent with this, the per capita metric for emissions has shown a
23% reduction since 2006, indicating that programs to make space more environmentally efficient and the community more aware of their individual impact are working.

The overall trend in carbon intensity is showing significant reductions. However, there are a number of initiatives that have been established that should ensure the University will meet its emissions reduction target (35%, in absolute terms, against 2006 levels by 2025). These include the progressive upgrading of building plant and equipment, as well as improved redesign; the establishment of a Carbon Reduction Fund to provide funding for projects that will produce sustainable energy on campus (e.g. photo voltaic panels; geothermal etc) and improve building efficiency; and roll out of a Green ICT project to reduce direct and indirect energy consumption across campus.

In respect of the other key environmental target, campus water consumption was reduced by 11% against 2008/2009 levels and the program is on track to meet the environmental target of 50% reduction against 2006 levels by 2020.

The following provides a summary of key initiatives in 2010:

- Projects established to install photo voltaic/solar cells on the ANU Student Association Building (using Federal government funding through the Green Precincts Program) and on campus child care centers (using ACT Government grant funding). To be completed in 2011.
- Designing major new buildings using (as a minimum) national best practice Environmentally Sustainable Design’ principles, including the College of Science, Multi Purpose Building at Kioloa Coastal Campus and the Fenner School of Environment and Society. The latter is being designed and built to achieve a 6 Greenstar (international best practice) rating from the Green Building Council of Australia. The major student accommodation building currently being constructed for opening in 2012 has been designed against international best practice benchmarks and consequently will reflect high standards of environmentally sustainable design.
- Community participation in campus sustainability events doubled during the 2009-2010 period, while student participation in sustainability projects tripled.
- Integrating academic activities with campus environmental programs where appropriate, including working with students through environmental internships and the informal curriculum programs, such as the Sustainability Learning Community.
- Introduction of new and continued support of existing, alternative transport options, including the enhanced public transport services to campus, development of a car pooling data base, the expansion of the campus bicycle fleet and the construction of secure bicycle storage facilities.
- The construction of a world class synthetic turf oval (suitable for multiple sports) on campus was completed, including the installation of 500K litre sub surface storm water tank. The project will achieve significant saving in water for irrigation and is an important initiative is eliminating the use of potable water in the landscape. The project was funded through a Green Precincts grant provided by the Commonwealth Government.
- As part of the campus master planning process, the Campus Biodiversity Protection Plan has been reviewed and updated (for University approval in 2011).
- Development of a sustainable food menu at Bruce Hall (residential college) that has resulted in 85% of food being sourced locally (up from 15% in 2008). This project was based on work started by Austin Shiner – Yale IARU Fellow in 2009.

The University was the recipient of the inaugural Green Gowns Award for Australasia and several regional awards for campus recycling initiatives, heritage and cultural protection for the restoration work at the Mount Stromlo Observatory, as well as sustainable design for its new modular student accommodation.
IARU Sustainability Fellowship Program

This program was launched as part of the IARU Campus Sustainability Initiative and involves selected students spending up to 6 weeks in the Campus Sustainability Office of another IARU member, undertaking operational environmental management projects. The criteria used for selecting the projects includes identifying a student’s area of interest (passion), as well as an initiative that will provide a material benefit to the host organization. In addition, the Fellowship is also intended to provide an informal educational experience that complements to the development of the student.

The program began in a limited form with Yale and ANU exchanging students and has now grown, with all IARU members participating in 2010. A review of the program and that participation will be completed at the workshop being held at Yale University in March 2011. However, anecdotal feedback is positive and several fellowship have yield constructive outcomes that are being implemented by Universities. For example, a Yale Fellow working at ANU in 2009 commenced a project on localizing food sources for a catered residential college, which was then completed by other students living in the college. The Fellow collaborated with the Head Chef to develop new kitchen practices and purchase arrangements, and as result the menu now sources 85% of its food from producers with 150 kilometers of the University (as opposed to 15% prior to the project). Other Fellowship projects have developed on line training programs, analysis of space efficiency (and consequently environment performance of space) and a green rating system for campus events.

The next stages of the program will look at opportunities to link Fellowships across several years (that is have future Fellows build on the work of their predecessors) and publishing the best reports in a knowledge base on the IARU Campus Sustainability website.

The following lists the IARU Fellows in 2010 and briefly outlines their projects. The full project reports will be available in the coming weeks.

Note that the Fellows are listed under the University who hosted them in 2010, and that the number of Fellows were specified by the host based on the availability of accommodation and capacity to supervise. The Fellows were selected by the Parent University based on an internal process to identify a high performing student who could undertake this Fellowship and deliver significant outcomes. The hosting universities identified the projects to be undertaken and overall matching of Fellow to the institution and project was coordinated by Yale University and ANU (who established the program and participated in the first Fellowships).

Yale University

Sophia Christo (ANU) – Sophia worked with Austin Shiner, the Yale IARU Fellow based at ANU in 2009, developing the sustainable food and dining program for catered residential halls. At Yale, Sophia built on this experience working with Yale Dining and Catering and the Yale sustainable Food Project, to develop a comprehensive set of information material related to events. She also developed a draft framework for an updated Green Event Certification System, which will be launched in April 2011.

Chee Yong Tan (NUS) – worked on a range of projects related to energy management, building performance and finance, during his fellowship. Key achievements included collaborating on the development of a Communications Plan for Yale’s Climate Change Action; authoring web content to summarise the key design features of Yale’s LEED certified buildings; and conducting the background research for the establishment of the Sustainability MicroLoan Fund.

University of Copenhagen

Judith Ellens (ETH Zurich) - Judith undertook the following activities while at Copenhagen:
• contributed to improvement of our campaign on energy efficient behavior “Green Action”, particularly focusing on involving involvement of students
• did a valuable and inspiring research on possible actions on climate friendly food at the University of Copenhagen
• developed ideas for improvement of the Green Campus homepage
• generally contributed to development of green campus activities and actions.

The University of Tokyo

Joanna Young, (UC Berkeley) – Joanna undertook the following activities while at University of Tokyo:
• Joined various works at TSCP office
• Prepared an English summary of TSCP activities
• Developed a PR poster for energy saving in winter
• Participated to sustainable campus session at an international conference in Yokohama

ETH Zurich

Tom Latimer, (University of Cambridge): Tom undertook the following projects:
• Conceptual framework for the installation of power loading stations for E-Scooters and E-Bikes at existing bike racks on the two ETH-Campuses.
• Further Development of an iPad Software, called “Energy Dashboard” (working as an Info kiosk in certain buildings) for the easy access to ETH’s daily, monthly and yearly energy and resources consumption.

University of California, Berkeley

Rachel James (University of Oxford) - Rachel drafted a paper based on campus research called: Promoting Sustainable Behavior – A guide to successful communications. This will be used in support of the upcoming UCB energy conservation project. Rachel also undertook a number of smaller energy and sustainability projects, including an assessment of the i-Tree Tool (developed by US Forest Service and preparing a pilot study for assessing the environmental benefits of trees in a University housing property.

Maria Markman (University of Copenhagen) – Maria researched the Green Globes (green building) rating system and prepared a report comparing this program to LEED. This information will inform future building projects and assists the University in making decisions that promote environmental efficiency.

University of Oxford

Shaun Wykes (ANU) – Shaun reviewed existing Eco Reps programs in University departments as well as, surveying the Swap Shop run by the Sustainability Teams. He has recommended strategies for improving these initiatives. Shaun also developed the strategy for the 10/10 UK Sustainability campaign (a national program to reduce emissions by 10% in 2010: http://www.1010global.org/uk) and created an “engagement package” for staff and students, including marketing material.

Zilu Liang (The University of Tokyo) – Zilu conducted a “Quick Win” energy survey of 11 buildings (surveying multiple times per day to develop a occupant user profile). He identified potential energy saving of between 1%-9% (depending on the building) that could be achieved by simple operational and behavioural changes.
University of Cambridge

Irene Seliverstov (UC Berkeley): She worked mainly on collating and analyzing data from various sources as a first step in trying to quantify our emissions associated with air travel on University business (Scope 3 emissions).

Wei Hong Tan (NUS): He worked mainly on collating and analyzing energy consumption and emissions data from different University buildings (Scope 1 & 2 emissions) and comparing our overall emissions with other Universities in the UK to help us get a better understanding of the impact of plug loads associated with academic scientific research within buildings compared with that associated with the building envelopes themselves. The initiative was a great success with both projects proving invaluable in helping us to develop our Carbon Management Plan. Let me know if you need any additional details.

National University of Singapore

Louise Ward (Yale University) – Louise conducted an environmental performance audit of the Ken Ridge campus, focussing on energy use in lighting and air conditioning. She developed standard procedures for measuring lux (illumination) levels in lighting across different areas/departments.

Rebecca Hawton (University of Cambridge) - Rebecca developed strategies for improving energy efficiency within buildings on the Kent Ridge campus, including identifying practices that result in waste energy (physical gaps in buildings that allow conditioned air to escape). Rebecca also worked on the development of the Eco-Office Action Plan.

Peking University

Sue-Lin Wong (ANU) – Sue-Lin worked on a range of campus awareness initiatives with the student community and on the development of various media, including commencing the translation of the PKU Sustainability Website.

Australian National University

David Skiphamer (Yale University) - David developed an Energy and Water conservation tool kit for use in residential halls. The tool kit allows users to rank the environmental efficiency of resident rooms. (This will be further developed – potentially as a downloadable app – by future IARU fellows.)

Marissa Van Epp (University of Oxford) - Marissa developed a “how to” guide based on (and expanding) the IARU campus sustainability tool kit. This has now been published on the IARU website. This work will feed into the proposed IARU project to develop on line learning tools for Universities/Colleges.

Wei Chen (Peking University) – Wei reviewed and redesigned the ANU Campus Sustainability Awards scheme in collaboration with academic departments, to ensure the program acknowledged both academic and operational excellence in environmental management.

Report prepared by Bart Meehan, ANU, with input on performance provided by the respective IARU member universities. The report will be tabled at their workshop in March 2011 (Yale University) and any changes or additions will be forwarded in an addendum.