

# The “Greening the Ivory Towers” Project: The University of Auckland case study

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## Introduction

The collaboration between the University of Toronto and the World Society for Ekistics over the Symposium on “The Natural City” (June 2004) has provided an opportunity for students from the Department of Planning at The University of Auckland, New Zealand to extend their interdisciplinary thinking, as introduced through study of *Ekistics*, by contributing to the Symposium. This paper describes that contribution as an example of thinking ekistically.

With the subject of Sustainable Development featured in their courses, it has been appropriate to take some aspect of it as a focus for their contribution. The Canadian-initiated “Greening the Ivory Towers Project” (or GITP), with its emphasis on University campus sustainability, provided this focus. By preparing a case study of The University of Auckland's city campus, the Planning students have been able to apply the Campus Sustainability Assessment Framework (CSAF) as developed for the Sierra Youth Coalition as part of the GITP (see [www.syc-cjs.org/gitp/](http://www.syc-cjs.org/gitp/)).

## The Greening the Ivory Towers Project

The GITP forms part of a larger Sustainable Campuses initiative by the Sierra Youth Coalition and it is intended to operate across Canada at a post-secondary level. Participation by other countries is encouraged. The objectives of the Sustainable Campuses Project are:

- Catalyze and support the development of Sustainability Projects on campuses across the country;
- Use campus sustainability indicators to inform and pressure universities to change their practices.
- Actively promote the inclusion of university faculty, staff and students.
- Support existing groups and actively build groups in their absence.
- Promote the exchange of information, skills, strategies and resources between university environmental groups and from other sources.

- Lobby municipal, provincial and federal governments and those in positions of power on issues that concern the Network in a coordinated fashion.
- Work to make education for sustainability and active learning a part of all formal post-secondary education.
- Provide an annual forum (conference) when students from across the country can gather and share ideas and inspiration in the movement towards campus sustainability. ([www.syc-cjs.org/gitp/](http://www.syc-cjs.org/gitp/))

## Campus Sustainability Assessment Framework

The Campus Sustainability Assessment Framework (CSAF) is an integrated methodology across the sustainability dimensions of environment, society, economics, culture and health. While it contributes towards understanding environmental and socio-economic impacts, it is intended to go further: to develop “solutions that address overarching structural problems in society and facilitate institutional as well as lifestyle change” (*ibid.*).

The CSAF focused on two sub-systems which are recognized as being “interconnected in the sacred balance of life on this planet” (*ibid.*). The sub-systems are: *Ecosystems* and *People*. Each

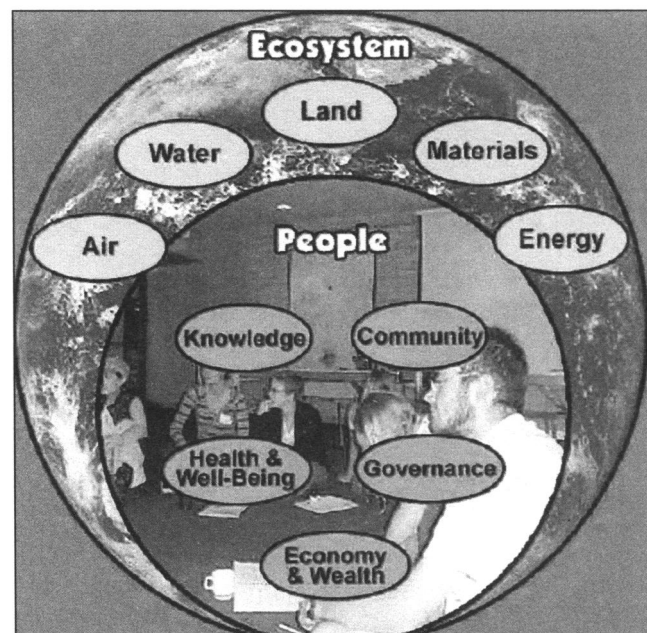


Fig.1: The Sustainability Egg Model for the Greening the Ivory Towers Project (GITP). (Source: Sierra Youth Coalition).

sub-system has five dimensions (fig. 1). The many aspects to each dimension are identified as a sub-structure for the model, and indicators are associated with them. Figure 2 illustrates the dimension

Energy within Ecosystem. The full list of indicators for the dimension Energy is presented as table 1 together with all the indicators of the two sub-systems (Ecosystem and People) of the model.

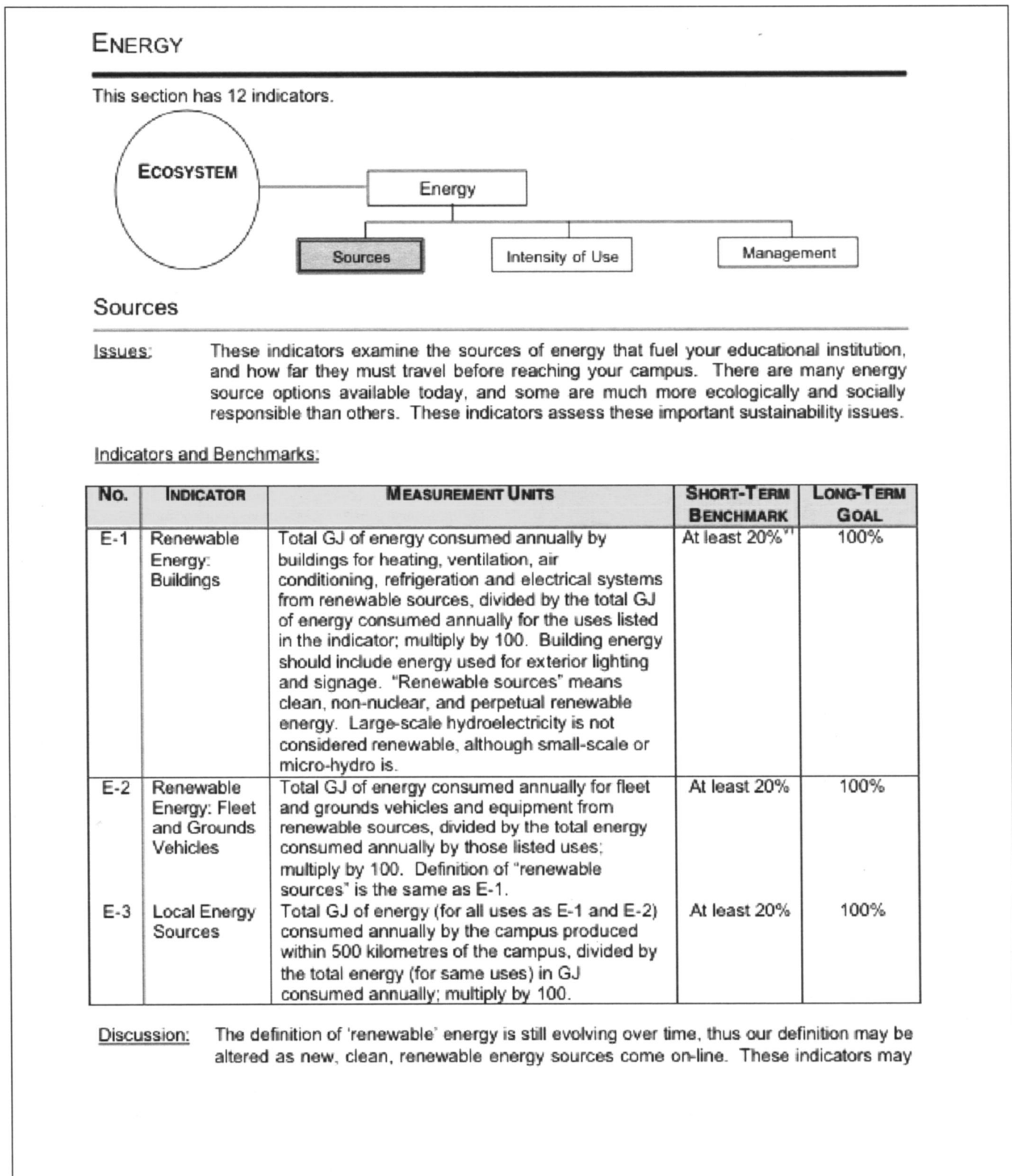


Fig. 2: Example of one dimension (Energy) with indicators for Sources. (Source: Sierra Youth Coalition).

**Table 1**  
**The Sustainability Egg Model for GTP – List of indicators by sub-system and dimension**

● Sub-system no. 1 – Ecosystem		Land	Knowledge	
<b>Water</b>		L-1 Managed Greenspace	K-1 New Faculty Orientation	
W-1	Potable Water Consumed	L-2 Inorganic Fertilizers	K-2 New Staff Orientation	
W-2	Storm- and Grey Water Reuse	L-3 Pesticides	K-3 New Student Orientation	
W-3	Leaking Fixtures	L-4 Native Plants	K-4 Faculty Sustainability Training	
W-4	Water Metering: Potable	L-5 Healthy Natural Areas	K-5 Staff Sustainability Training	
W-5	Water Metering: Wastewater	L-6 Restoration of Degraded Areas	K-6 On-campus Student Sustainability Jobs	
W-6	Pressure Testing for Leaks	L-7 Protection of Natural Areas	K-9 Research Collaboration - On-campus	
W-7	Efficiency of Fixtures	L-8 Unresolved Land Claims	K-10 Research Collaboration - Non-profit	
W-8	Motion Detectors Installed	L-9 Impermeable Surface Coverage	K-11 Research Collaboration - For Profit	
W-9	Wastewater Produced	L-10 Parking Density	K-12 Sustainability Research Expenditures	
W-10	Wastewater Treatment	L-11 Building Density	K-13 For-profit Research Contributions	
W-11	Stormwater Contaminant Separation/Collection	L-12 Occupancy Rates: On-Campus Residences	K-14 Faculty Sustainability Research	
<b>Materials</b>		L-13 Occupancy Rates: Classrooms	K-15 Sustainability Pledge	
M-1	LEED Certified Base Buildings	● Sub-system no. 2 – People		
M-2	LEED Certified Interiors	<b>Health and Well-being</b>		
M-3	Paper Consumption	HW-1 Recreation Space	K-16 Sustainability Literacy Survey	
M-4	Recycled Content of Paper	HW-2 Recreation Participation	K-17 Courses With Applied Learning	
M-5	Tree-free Paper	HW-3 Diet Types	K-18 Courses With Sustainability Content	
M-6	Chlorine-free Paper	HW-4 Nutritional Information	K-19 Students Taking Sustainability Courses	
M-7	Local Food Production	HW-5 Organic, Non-GMO, Fair Trade Food	K-20 Faculty Teaching Sustainability Courses	
M-8	Life-cycle Cost Assessment of Equipment	HW-6 Motor Vehicle Accidents	K-21 Quality of Sustainability Courses	
M-9	Solid Waste and Recyclables Produced	HW-7 Workplace Incidents	K-22 Collaborative Course Development	
M-10	Solid Waste Reduction	HW-8 Incidents of Assault	K-23 For-profit Course Development	
M-11	Recyclables Being Landfilled	HW-9 Physical Health Care Practitioners	<b>Governance</b>	
M-12	Compost	HW-10 Sick Days	G-1 University Government Policy	
M-13	Hazardous Waste Produced	HW-11 Smoking	G-2 Student Government Policy	
M-14	Reuse of Hazardous Waste	HW-12 Mental Health Care Practitioners	G-3 University Government Working Groups	
M-15	Recycling of Hazardous Waste	HW-13 Retention Rate	G-4 Diversity of University Government Working Groups	
M-16	Reduction of Hazardous Waste	HW-14 Spiritual Services	G-5 Reporting of University Government Working Groups	
<b>Air</b>		HW-15 Mental Illness	G-6 University Staffing for Sustainability	
A-1	Asbestos and Mould	HW-16 Student Suicide Rate	G-7 University Financing of Sustainability	
A-2	Scent-free Indoor Spaces	HW-17 Accessible Greenspace	G-10 Diversity of Student Government Working Groups	
A-3	Opening Windows	HW-18 Noise Pollution	G-11 Reporting of Student Government Working Groups	
A-4	Air Change Effectiveness	HW-19 Light Pollution	G-12 Student Government Staffing for Sustainability	
A-5	Smoke-free Indoor Spaces	<b>Community</b>		
A-6	Living Plants Indoors	C-1 Volunteerism	G-13 Student Government Financing of Sustainability	
A-7	Chemical Free Cleaning	C-2 Financing Volunteer Groups	G-14 Reporting of Student Government Sustainability Staff	
A-8	Pesticides Used Indoors	C-3 Alumni Volunteerism	G-15 University Government: Implementation Planning	
A-9	Cleaning of Air Handling Units	C-4 Graduates in the Community	G-16 University Government: Reporting	
A-10	Carbon Dioxide Monitoring Indoors	C-5 Sense of Community	G-17 University Government: Information Management	
A-11	Indoor Air Quality Complaints	C-6 Voter Turnout	G-18 Student Government: Implementation Planning	
A-12	Smoke-free Outdoor Spaces	C-7 Faculty With Disabilities	G-19 Student Government: Reporting	
A-13	Living Trees Outdoors	C-8 Staff With Disabilities	G-20 Student Government: Information Management	
A-14	Living Trees Outdoors	C-9 Students With Disabilities	<b>Economy and Wealth</b>	
<b>Energy</b>		C-10 Faculty of Ethnic Minorities	EW-1 Students With Loans	
E-1	Renewable Energy: Buildings	C-11 Staff of Ethnic Minorities	EW-2 Student Debt Load	
E-2	Renewable Energy: Fleet and Grounds Vehicles	C-12 Student of Ethnic Minorities	EW-3 Student Fees	
E-3	Local Energy Sources	C-13 Faculty Gender	EW-4 Number of Financial Awards	
E-4	Greenhouse Gas Emissions: Buildings	C-14 Staff Gender	EW-5 Value of Financial Awards	
E-5	Greenhouse Gas Emissions: Commuting Transport	C-15 Student Gender	EW-6 Allocation of Financial Awards	
E-6	Greenhouse Gas Emissions: Fleet & Grounds Vehicles	C-16 Equity of Indigenous Peoples: Faculty	EW-7 Wage Gap	
E-7	Greenhouse Gas Emissions: Campus Travel	C-17 Equity of Indigenous Peoples: Staff	EW-8 Gender Pay Equity	
E-8	Reduction in Energy Consumption	C-18 Equity of Indigenous Peoples: Students	EW-9 Ethnic Minority/Caucasian Pay Equity	
E-9	Energy Metering	C-19 Indoor Community Space	EW-10 Indigenous Peoples/Caucasian Pay Equity	
E-10	Energy Efficient Equipment	C-20 On-campus Housing	EW-11 Income From Student Fees	
E-11	HVAC&R System Control	C-21 On-campus Housing Affordability	EW-12 Income From Government	
E-12	Automatic Lighting Sensors	C-22 On-campus Employment Services	EW-13 Income from Private Sources	
		C-23 Community Library Cards	EW-14 Departmental Expenditures per FTE Students	
		C-24 On-campus Media Expenditures	EW-15 Locally Purchased Goods and Services	
		C-25 Affordability of Public Transit	EW-16 Deferred Maintenance	
			EW-17 Ethically and Environmentally Sound Investments	
			EW-18 Local Investments	

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Fig. 3: The University of Auckland – The Clock Tower (a), Former house as Faculty Office (b), and Information Commons Building (c).

## The University of Auckland case study

### Context

The University of Auckland was established as a College of the University of New Zealand in 1882. The University of Auckland became an autonomous institution in 1958. The City Campus is located in the central city area of Auckland. Its current buildings date from 1926 when the Landmark heritage building – “The Clock Tower” – was built. Most of the Central City Campus was built between 1960 and 1970 and some existing houses were incorporated into the site. The most recent building was built in 2003 (figs. 3a, 3b and 3c).

### Objectives

The development of The University of Auckland case study was based on the following objectives:

- to participate in the Canadian-driven *Greening the Ivory Towers Project (GITP)*;
- to understand how students could influence practice through their work;
- to apply the *GITP Campus Sustainability Assessment Framework Approach*;
- to establish a baseline for the University of Auckland;
- to develop recommendations for improvements to the University’s performance on sustainability indicators.

The students had 12 weeks (a semester) to carry out the case study prior to departing for Toronto. The work formed a special topic which was additional to the main program of study on that semester which meant the students had to work on it in their own time.

### Application of the Model

Following the model illustrated in figure 1 (above), the Auckland case study set about applying it to the University of Auckland City Campus. All dimensions in the model (table 1) were actioned with the exception of Air (because that was a city-wide dimension and could be covered later).

#### ● Sub-system no. 1 – *Ecosystem* Energy

The University of Auckland has addressed major uses of energy within its Environmental Policy. The relevant sections are:

- “The University of Auckland is committed to environmental re-

sponsibility in the areas of the natural environment; development, design and management of the built environment; and resource conservation.”

- “Undertake the conservation and economic use of utilities such as water, electricity, steam and gas.”
- “Encourage the use of environmentally responsible transportation and provide facilities for that use.”

These policies can be related to the appropriate parts of the Energy model (fig. 4):

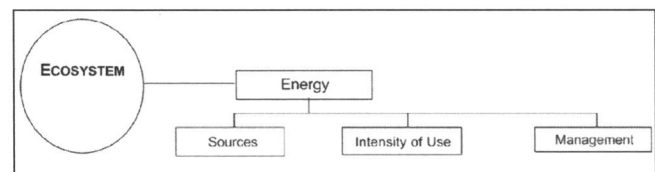


Fig. 4: The Energy model and its aspects.

● **Sources:** Within the University of Auckland City Campus in the year 2002, the energy consumption was 199,350GJ for the day-to-day running of the University. This amounted to an expenditure of over NZ\$4 million on energy alone. The main use of this energy is for the heating, ventilation, air-conditioning and refrigeration systems within buildings used by the University. This energy was purchased in three forms: gas, electricity and steam. Gas was taken from 16 suppliers, electricity from 109 sources nationally, and steam from one source, the Auckland Hospital. In 2002, the cost of steam purchased from the hospital was NZ\$231,394. This produced 2,185 tonnes of CO<sub>2</sub>.

The diesel that is used in Auckland is imported from the Middle East and then refined at Marsden Point near Whangarei before being piped to Auckland and delivered to individual stations. It is consumed by the University of Auckland in a number of vehicles for use by its academic departments, maintenance and for security. These vehicles are generally diesel powered vans or utility vehicles. Diesel vehicles can produce larger emissions if they are not serviced regularly. The distance that each of these vehicles travels per year is dictated by their role in the institution. For example, a van operated by the Geography Department is likely to travel a larger distance each year on field trips than will a maintenance utility vehicle, driving around the campus. Each department has responsibility for its own vehicle fleet.

● **Intensity of energy use:** The University of Auckland has staff and students commuting from all around the Auckland region. As the region consists of large areas of suburban sprawl, many have to travel a considerable distance to access the campus. Many students and staff choose to commute by private vehicle due to convenience and the limitations of the public transport system (bus, rail and harbor ferry) across the metropolitan area. This commuting compounds the congestion problems that Auckland currently faces and also adds the problem of adequate parking provision in the vicinity of the campus.

For students and staff living closer to the campus, the transport system is much better. Students can walk from the student accommodations located near to the university and there is a free bus that travels in a loop around the city center with stops at the University. This bus service uses Hybrid-Electric buses that take their power from a wet cell battery, which is charged by gas turbine running from LPG. This type of engine emits virtually no CO<sub>2</sub> and can travel 320 km per day. Many students use this service to travel around the campus and CBD. The inner loop is supplemented by a wider figure-of-eight loop serving the outer central city area with stops in the Downtown, including the University.

The largest energy user on campus is the Information Technology Systems and Services (ITSS) based on kWh per sq.m. This is no surprise as this department has computers running for most of the working hours along with lighting and air-conditioning. Most of the office space is occupied by computers and each staff member has at least one computer per desk.

## Water

Water is a major resource required by the University. This dimension to the model is analyzed under the following divisions: Consumption, Management, Storm and wastewater (fig. 5).

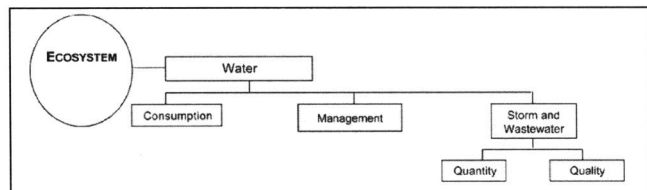


Fig. 5: Water model.

The University of Auckland City Campus has successfully managed to reduce consumption dramatically over the last 30 years (see figure 6), and has in place an Environmental Policy requiring the responsible and appropriate use of water.

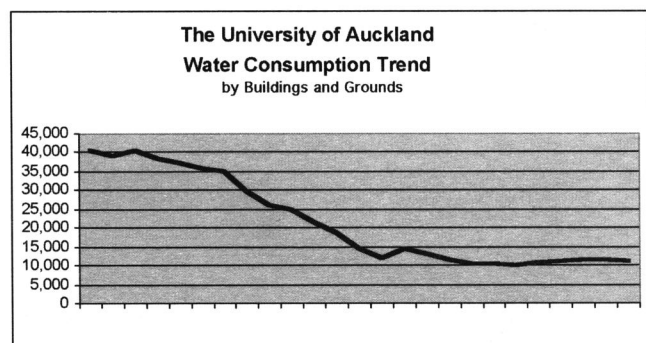


Fig. 6: Water consumption trend. (Source: University of Auckland).

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Other information relevant to the indicators for Water is as follows:

- During the year 2002, the university consumed 344,235,000 liters of potable water, which equates to 11,663 liters per CCM.
- Neither stormwater nor grey water is collected on the City Campus. However, stormwater is collected on the Tamaki Campus, as per conditions stated in the resource consent.
- The University performs very well in terms of repairing leaking fixtures. Call out times range in terms of severity, from instantly for a burst water main, to half a day, for a leaking tap.
- All of the buildings on campus have at least one water meter installed.
- Motion detectors are installed on the urinals on campus, of which there are approximately 172. The sinks (approx. 400) and toilets (approx. 800) do not have any motion detectors installed.
- The campus produces 213 million liters of wastewater each year, which equates to 7,216 liters per CCM.

## Materials

A vital ingredient in campus sustainability consists of the materials that are used and their disposal. This dimension includes materials used in Buildings, Paper, Food, Equipment, and Waste both solid and hazardous (fig. 7). The University of Auckland has addressed some of these elements of these materials within its Environmental Policy.

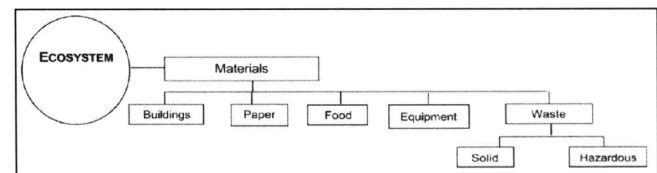


Fig. 7: Materials model.

- *“Educational institutions have a pivotal role in the promotion of environmentally sustainable management.”*
- *“The development and operation of the University must allow for a ... healthy environment for members of the University and wider community. This will be achieved through the avoidance ... of any adverse effects of the University's activities upon the natural and built environment.”*

The key points for the materials model are summarized below:

● **Buildings:** The University of Auckland currently does not have a green building policy in place and, due to this, we have no buildings that are LEED certified. There is currently no green accreditation program for buildings running in Auckland and, therefore, none of the newer buildings have been certified as energy and water efficient.

It is recommended that the Building Research Association of New Zealand (BRANZ) should bring the LEED accreditation system into New Zealand and the University of Auckland should design its new buildings to the LEED standard. The LEED system would help the University meet its own policy goals through the construction of energy efficient buildings. Through doing this, the University will be complying with its policy: *“Educational institutions have a pivotal role in the promotion of environmentally sustainable management.”*

● **Paper:** The purchasing of paper in the University is through a centralized office in the Finance Department. Other departments also purchase paper for their own use and when a special type of paper is required, such as for architecture or fine arts students.

The paper that is generally purchased by the University contains chlorine. The group was unable to find any paper that the University purchased that was tree free. Paper for projects is generally bought off site by students for presentation work and, therefore, this component cannot be accurately measured.

● **Waste:** The University as a whole does not undertake any large scale composting activity. However, in some cases, individual departments have taken their own approach to composting and other solid waste reduction techniques. The Planning Department has a worm farm on one of its rooftop decks which was built by a group of students. Food scraps are placed into the worm farm along with shredded paper, where they are decomposed by the worms. The worms eat through the material and their liquid excrement is collected at the bottom of the worm farm, where there is a tap. The tap then fills bottles of the "worm juice," which is used as organic fertilizer for plants and gardens. The worm farm was constructed from recycled materials such as an old dingy and old water tap and was built by lecturers and students.

● **Hazardous waste:** The University takes the handling and disposal of hazardous material very seriously. There is an appointed person to oversee the operation which is contracted out to a private waste company. Due to this contract, it was hard to gather the information on quantities produced per year. Hazardous wastes include radioactive and genetic material from the medical school and also many forms of chemicals from the Science Department. The University must comply with the following New Zealand legislation in relation to its disposal and handling of hazardous waste:

- The Health, Safety and Employment Act;
- The Resource Management Act (1991) – Part 13; Hazards Control Commission; and,
- The Hazardous Substances and New Organisms Act (1977).

## Land

The Land component of the resources "consumed" by the University is a central feature of any sustainability discussion (fig. 8).

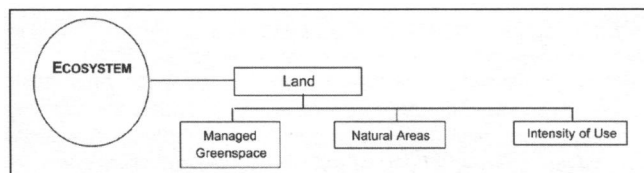


Fig. 8: The Land model.

The University of Auckland was formally opened on 23rd May, 1883 as part of the University of New Zealand, with a disused courthouse and jail housing 95 students and 4 teaching staff. Since this time, the University has been expanding into the surrounding urban environment. Today, the University is an integral part of the Auckland City urban environment and its surrounding grounds contain green space which is used by university students and the general public.

● **Managed green space:** The University of Auckland has few areas of green space remaining, as the pressure to accommodate growth has forced these areas to be used for buildings. The areas that do remain are generally those in the older parts of the University, which are located close to historic buildings. These areas are generally well maintained grass lawns with surrounding gardens. There are few natural areas remaining and most of these are inaccessible, as they are located behind buildings. However, those that do remain contain a variety of native species

of plant, but are plagued with weeds and, generally, not maintained in any way.

Albert Park is a large public park that is located across from the University and this area is well used by students and staff. The park contains well-maintained Victorian style gardens and areas of native vegetation, as well as large grass areas. This park mitigates the lack of green space within the campus itself.

● **Natural areas:** As the University of Auckland is a city campus and is located on former army barracks, there are few areas that remain in their natural state. Those that do remain are severely degraded and are only small pockets of land.

Before Europeans arrived in Auckland, the area in which the University of Auckland is located was inhabited by Maori. The tangata whenua (local people of the land), were Ngāti Whātua o Orakei. Today, Maori play an important role in the campus and the University "acknowledges the rights and obligations of the Treaty partners inherent within the Treaty of Waitangi and will endeavour, where appropriate, to meet those rights and obligations through the practice of equal educational and equal employment opportunities." Presently, there are no outstanding land claims on the campus.

● **Intensity of use:** A large majority of the land owned by the University is impermeable. There are no major student parking lots on campus grounds but there are large lots located within walking distance that most students and staff use. The University has 384,921 sq.m of built space on campus, but no student residential rooms. These are located off campus and some have been integrated into existing buildings, such as the Railway Campus, which is a historic railway station within walking distance of the Campus.

● **Internal courtyards:** The traditional Oxford/Cambridge University style of lawn courtyard of the initial University Gothic building has been augmented in new buildings by paved courtyards. These are popular, all-year round (but especially in winter) meeting areas. Most recently, the courtyards are attached to cafés which provide tables outside.

The study to date has concluded that the University should undertake an open space audit to determine the actual amounts of land available for green space use. A plan should then be created to improve the existing green space and protect it from unsuitable development. The University needs to focus on a native planting program, as currently most species within the University are exotic.

## ● Sub-system no. 2 – People Knowledge

*Knowledge* is a key component to working towards the goal of finding out:

- how committed Auckland University is to sustainability;
- the ideas and processes that can be implemented to help achieve sustainability within the University, and the Auckland Region.

The Knowledge dimension of the model is divided into the following aspects: Training, Research, and Curriculum (fig. 9).

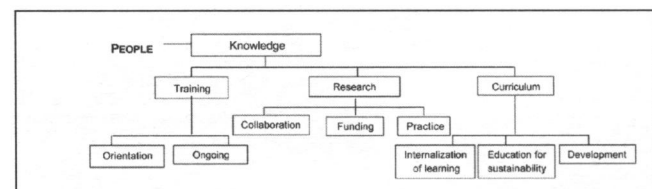


Fig. 9: The Knowledge model.

By examining the 1st level of components of Knowledge in figure 9 the following information can be reported:

● **Training: Orientation and ongoing:** Under the sub-component of "Orientation," the study found:

- the University already meets the long-term goal of 100 percent for faculty and staff orientation;
- while invited to orientation week and able to ask questions of their individual faculty, very few students have had an hour of social and environmental orientation each.

This GTP enquiry means that University staff and orientation organizers have been made aware that there needs to be a greater focus on the environmental policies and actions of the University, and also a greater understanding of Auckland City and surrounding suburbs.

Under the sub-component "Ongoing," the study found that:

- there is insufficient ongoing training for academic staff;
- each faculty is different and while some departments, such as Planning, Geography and Social Sciences will have a focus on training topics that cover sustainability issues, other faculties will not be so involved; and,
- the benchmark requires all staff members to get at least 24 hours of sustainability training per year. If staff are informed, students can be informed on sustainability issues also.

● **Research:**

- There is a large research sector within Auckland University;
- Research can be undertaken and funding can be applied for and is provided by the University and outside sources; and,
- The University of Auckland is host to four of the seven Centres of Research Excellence established by the Government in 2001 to encourage world-class research contributing to New Zealand's development.

● **Curriculum:**

- In 2002 the University offered a total of 3,958 courses.
- Many courses do offer some sustainability content. For example, in 2002, Biological Sciences had 37 percent of their courses with a sustainability component; 17 percent of students enrolled in this department took these courses.
- For the Planning degrees most of the core courses address sustainability.
- There is not a sustainability pledge. The University needs to encourage students and faculty to work towards sustainability outcomes.

## Community

The *Community* dimension is divided into Involvement and Cohesion, Diversity and Services (fig. 10).

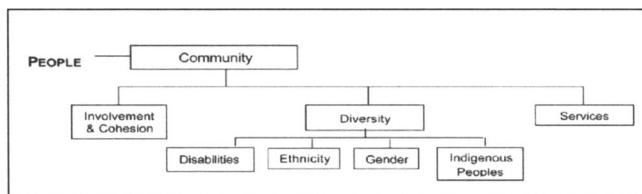


Fig. 10: Community model.

The information assembled under this part of the model includes:

- Equal opportunities for all are promoted; the University works hard to ensure that all people have access to facilities;
- Sports and cultural clubs are an important part of student life; and,
- By ensuring that relationships are strong, sustainable practices can be far-reaching.

Promoting a diverse social and cultural environment forms part of the University of Auckland's Environmental Policy. This policy recognizes and acknowledges that social and cultural values and rights, along with the effective management of the natural and built environment, are essential in achieving a sustainable future.

● **University Community:** The University aims to build strong relationships with the people in its immediate region and beyond. A student who has graduated with either a degree or diploma from the University of Auckland becomes a member of the Alumni Association, as are past staff members. Each year, some 3,000 new graduates are eligible to join the Alumni Association. The University's "friends" are those people who have become involved with the institution, for instance taking part in a careers network and attending public lectures. Currently, there are 100,000 such people who live within the Auckland Region (our local community). The University itself creates a community atmosphere by offering to students a wide range of support and services. Services include libraries within faculties as well as a general library, health services, disability services, childcare services, student commons, recreation center, bookshop, radio station, student magazine and association, Theatre, Gallery and accommodation. The Auckland University Students Association (AUSA) is a student organization committed purely to the students. Membership is voluntary. It looks after the University clubs and sport teams, distributes a magazine each week that contains information about up and coming events and articles from students. A team of 19 elected students run it and elections are held each year in August. The University provides accommodation by means of 3 halls of residences and 6 furnished self-catering residences. Employment opportunities are also offered to students. Part time and full time job opportunities are advertised at student job search (the on-campus employment office) and also for graduates online at [www.jobs4grads.net](http://www.jobs4grads.net).

● **Equal opportunities:** Giving equal opportunities is something the University of Auckland takes quite seriously and has been committed to for many years. It has made significant advances in the recruitment, retention and progress of staff and students from previously under-represented groups. It was one of the world's first universities to award degrees to women. Its first women professors were appointed during the 1970s when there were numerous social changes occurring. During this period, women enrolment figures increased quite substantially. Today, a significant proportion of students are women and they are not restricted from doing any degree. There are a high number of mature students who also attend, either as undergraduate students or post-grad students.

● **Disabilities:** The University has been constructed so that those who have disabilities can attend. Extra services are provided to these students and staff so that they are not disadvantaged in any way. Services provided include: note takers, sign language interpreters, test writers, lab assistances. Also, within each faculty, there is a disability support person for students and staff. There is a disability center where students with disabilities can go if they need assistance or support. Also within the center, there is a lounge and computer room made available to students when they do not have lectures.

● **Cultural diversity:** The University is culturally diverse. This diversity is recognized by the University, with people's different backgrounds incorporated into university life. The Treaty of Waitangi places particular responsibilities on the University with regard to Maori (New Zealand's indigenous people). There are currently 2,000 enrolled full-time Maori students on campus, along with approximately 50 Maori teaching staff. The University has both its own Marae (a traditional Maori meeting place), and Pacific Island Fava on campus.

## Economy and wealth

The Economy and Wealth dimension of the model is approached as "individual" and "institutional" (fig. 11).

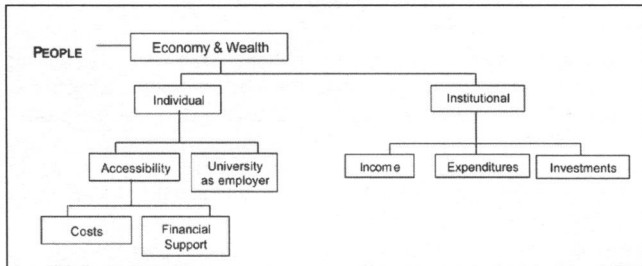


Fig. 11: Economy and Wealth Model.

The study to date focused on the institutional aspect of the model.

● **Institutional – Income:** The University's income derives from three primary sources. Revenue related to student enrolments includes Government subsidies and student tuition fees and is clearly the most significant source, followed by externally funded research and revenue from the provision of other services.

**Income from student fees:** In 2002, student fees accounted for 25 percent of the university's income and, in 2003, it accounted for 27 percent. The actual figure increased 16 percent in 2003 but the total income of the university was also increased by approximately 10 percent in year 2003. The average university fees showed a 10 percent increase in 2003 from 2002 for domestic students.

**Income from government:** There is a decrease of 1 percent in terms of percentage of total income from government grants from year 2002 to 2003. However, the total operating revenue the university received showed a 10 percent increase. Therefore, the actual figure of government grant in 2003 was actually increased by 6 percent, compared to the figures of 2002.

**Income from private sources:** Private sources are comprised of research contracts, service income, donations, interest and other income. This accounted for 36 percent of the university's income in 2002 and 35 percent in 2003.

● **Comparison:** The trend of incomes in terms of its composition at the University of Auckland is relatively consistent in years 2002 and 2003. *Government grants* made up 39 percent and 38 percent of the income; *Student Fees* made up 25 percent and 27 percent; and *private sources* made up 36 percent and 35 percent. The actual amounts from each category were all increased by 6 percent, 16 percent and 9 percent in government grants, student fees, and private sources; and the income of the university was increased by 10 percent. In short, the university received almost 40 percent of its income from government grant, approximately 25 percent from student fees and 35 percent from private sources. These calculations are based on the University's *Annual Report 2003*.

● **Budget 2004:** The budget for 2004 predicts continuing growth in student numbers and research activity, resulting in total income expected to rise again in 2004. Total incomes are expected to rise from the 2003 forecast position by \$38.0m to a total of \$537.6m, exceeding \$500m for the first time. The growth, although healthy, is slowing at only 7.6 percent for 2004, compared with the recent high of 10 percent experienced in the previous year.

Changes in growth parallel the changing growth of student numbers. Student numbers are currently expected to increase by 827 EFTS, many of these amongst the international student population. This growth, combined with increases in fees and funding rates, is expected to produce an additional \$25.9m. Over

55 percent of the increase results from the growth and fee rate changes for international students. Research income is increasing by \$10m and revenue from other sources by \$2.0m. Much of the increased research income is associated with the Centres of Research Excellence operating at the University. Each of these four CoREs is expected to be operating at full capacity for the first time in 2004, with budgets reflecting this increased activity.

Ministry of Education bulk funding has fallen further as a percentage of total revenue to only 35.8 percent, down from 38 percent last year and 41.4 percent in 2000. Combined student fees now amount to 28.9 percent of total revenue, with international fees moving from 3.9 percent to 13.3 percent of total revenue over the 2000 to 2004 period.

Tuition fee income has been rising steadily for a number of years. This rise is traditionally the result of increasing numbers of both domestic and international students, and fees increases for international students. With the change in the Government's funding regime for 2003, the University has been able to realign domestic tuition fees for the first time since 1999.

## Governance

This part of the overall model divides *Governance* into a 1st level of Policy, Implementation, and Monitoring (fig. 12). Each of these divisions is considered in terms of University government and Student government.

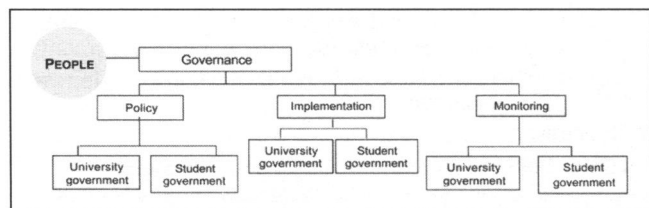


Fig. 12: Governance Model.

The study to date has focused on the area of Student government.

● **Student governance:** The findings to date have included the following:

- The body central to student governance is a voluntary Incorporated Society called the Auckland University Students' Association (Inc.) or AUSA.
- It is a society that is concerned with the problems and needs of students in their widest context.
- This organization is not isolated. There are ties and partnerships between Auckland City and Regional Councils and Central Government. - AUSA works with the principles of the Auckland University Environmental Policy.
- AUSA officers and members try to enforce waste management and recycling initiatives, but do not get much support from students or outside bodies.
- Auckland University works in partnership with Auckland Regional Council.

The body central to student governance is a voluntary, Incorporated Society called the *Auckland University Students' Association (Inc.)* or AUSA. The Association became a voluntary society in 1999 after the Government legislated for a student referendum to remove compulsory unionism on campus. AUSA has been in existence for more than 100 years. The official view of AUSA is that "it is a society that is concerned with the problems and needs of students in their widest context" (2004 *Calendar*, p. 644). AUSA is represented on the University Council and most University committees.



● **Policy:** There are three central documents for the AUSA, which are the Constitution, Administration Policy Book and SRC (Student Representative Committee) Policy Book. There are 266 policies in the Administration Policy Book on 1 January 2004. There are 37 sustainability related policies (i.e. 13.9 percent). Some policies are more detailed in their prescription than others (e.g. the policy on Harassment is three pages long, whereas most other policies only consist of one sentence). Policies in the Administration Policy Book generally aim to encourage consensus building, rather than set specific, strategic goals.

● **Implementation:** There are student representatives who are elected officers of AUSA with portfolios that relate to each of the following sustainability related issues: Education, Environmental Affairs, Welfare, Women's Rights, Maori students, Pacific Island students, and student representative council Chairperson. There is also a President, Administrative Vice President, Treasurer, Tamaki representative, clubs and society representatives, Media officers, Sports officer, Cultural Affairs officer, Overseas students officer, National Affairs officer, International Affairs officer, and the student magazine (Craccum) editor. Each AUSA officer is expected to spend 20 hours per week on their designated responsibilities. This equates to 3.5 FTE dedicated on sustainability related issues.

Responsibility may be more specifically described in the SRC Policy Book, which has major headings including Education, Welfare (health, employment, community development activities, child care, etc.), Women's Rights (trade unions, sexual harassment, education, etc.) and National (issues include accommodation, drug and alcohol, personal rights, etc.), whereas one on environmental policy is underway. Each Student Representative is obligated to report to the committee every fortnight.

● **Environmental Policy:** AUSA is now in the process of developing an Environmental Policy. There has already been consultation with a focus group. It has started with an initiative for a waste audit to persuade the University to implement their Environmental Policy by starting to actively recycle. What recycling occurs on campus is the result of AUSA officer action, such as the paper recycling policy and the "moving away from plastic plates" movement, and is implemented through goodwill.

The Environmental Officer works with other organizations such as the Waste Not, Auckland Regional Council waste minimization program for a waste audit, and AUSA can provide volunteer students if the contractor can provide the equipment. However, this initiative is not totally supported because there is no structured, long-term process in place. There is no recycling facility on the campus, although there is an aluminium can recycle bin in the Quad (the student space), but it is not really in use.

The Environmental Officer is the best person to act on sustainability matters (global and local). It is recognized that being environmentally friendly is also about people's attitude. Educating people does not necessarily change people's behavior. The Environmental officer reports that a lot of people know things, but cannot be bothered to do things. The idea of being environmentally friendly can be promoted as a "cool thing" that brings up people's incentives to be involved. There has been a lobby to hire permanent Environment sustainability staff and, although it is on the priority list, there is no indication of when it will happen.

## Health and Wellbeing

The *Health and Wellbeing* part of the model is divided into five aspects: Recreation, Food, Safety, Health Services, Environment (fig. 13).

There has been a three-fold increase of the population on campus during the past 20 years. The demand on campus facilities and spaces has increased tremendously. This report considers the 1st level of figure 11: Recreation, Food, Safety, Health ser-

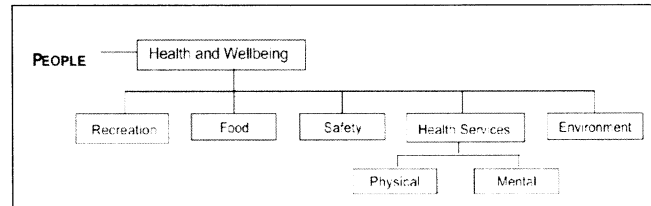


Fig. 13: Health and Wellbeing.

vices and Environment, referring to selected indicators.

### ● Recreation:

*Indicator HW-1: Total sq.m dedicated to recreation uses*

The city campus is strained for spaces. The City Campus is adjacent to major council-owned city parks. The domain is 75 hectares and contains parklands, gardens and sports fields. It also houses the War Memorial Museum. Albert Park is just across the road. Large amounts of shopping opportunities within a 5-minute walking distance (400m) may be categorized as recreation activities. Some of the biggest cinemas, theaters and popular pubs are also near the campus, and these activities can be categorized as recreation activities. There are also several dance studios and commercial gym operating outlets. Therefore, it is difficult to judge the circumstances for this campus with this indicator

*Indicator HW-2* asks the total number of CCMs participating in recreation programs. The on-campus recreation center is used by 21.7 percent of university staff and students. The demand on the campus gym has increased rapidly during the last 20 years, since the current gym was built. The functions and demands on the gym have also changed. Initially, the gym mainly accommodated squash, badminton and volleyball for local students. The squash facilities remain but the hall is now mainly used for basketball and in-door soccer by groups of Asian and Middle East students. It is also costs money to join the gym, although at an affordable price. Some students choose other alternative means of exercise, as options are rich within the central city. However, the gym on the campus is the second biggest facility in New Zealand in terms of membership. The biggest (privately-owned) gym is only about 1 km from the campus. The University also has another gym branch at the Tamaki Campus (15 minutes' drive from the city campus), which has much more on-campus green space dedicated to sports use.

● **Food:** To find out the percentage of accommodating different diet types (HW-3) is a complicated measure, since there are many other food outlets competing with the one on campus provided by the University. There has also been an increase recently of another seven food outlets. That brings the total number to 14 food outlets on the campus. (Seven are owned by university catering, while the other seven are private leases.) These outlets are mainly cafés. There is one sushi place, Indian food outlet, two Chinese/South-East Asian places and a kebab that sells halal food, as well three other university-owned hostels providing packed, as well as hot, lunches for their residents, not to mention other commercially run student hostels/apartments near the university. For the same reason, it is difficult to provide information on nutrition and availability of certified organic and/or non-genetically modified food.

● **Safety:** The city campus has developed within the street network, requiring students to move across major through routes like Symonds Street and Princes Street. A connecting street to the Grafton Gully motorway system bisects the campus along the Main Library and the Student Union. Underpasses are provided, but students are still injured crossing at street level. There has been a recent death but statistics are not readily available.

The University provides a 24-hour Security Service on Campus with foot patrols. Phones are provided around the campus to enable calls for help. Open spaces are well lit, as are parking areas.

#### *HW-7 Workplace incidents per year*

The University is subject to the Occupational Safety and Health legislation and associated Accident Compensation levies for workplace accidents. (HW-7 indicator:  $233 / 3,537 * 1000 = 65.9$  [accidents and incidents.]) Body stress, falls, trip, slip, and hitting objects have made up 60 percent of the common accidents. Sprain and strain made up over half the injuring results, followed by open wounds and bruising or crushing, with both of them making up just over 10 percent of the accident result. There are fewer incidents. ( $6 / 3,537 * 1000 = 1.69$ )

#### *HW-8 Incidents or assault per year*

Accident and incident:  $284 / 29,516 * 1000 = 9.62$

Incident only:  $7 / 29,516 * 1000 = 0.24$

This record refers only to reported incidents and accidents (where an incident claim form has been filed. Sometimes, it may take a doctor's approval for the claim).

The findings so far include:

- There has been a three-fold increase of the population on campus during the past 20 years. The demand on campus facilities and spaces has increased tremendously.
- The University has paid close attention to services that contribute to students' health and wellbeing. This has occurred in collaboration with the AUSA who can identify students' needs.
- Safety and security have emerged as a major aspect of campus wellbeing.
- Occupational Health and Safety laws apply to the University. The University has a "no smoking" policy inside all the buildings.
- There are considerable issues surrounding road safety, as the city campus is located in the heart of Auckland City, in amongst some busy roads.
- There are centers of spiritual wellbeing for many different members on campus.

## Conclusion

When the specific findings are reviewed across all parts of the model,<sup>2</sup> some general observations have been possible. These include:

- The University has an Environmental Policy but there is further scope for it to be implemented effectively;
- The ECOSYSTEM indicators are more readily recognized as contributing to Campus Sustainability than the PEOPLE indicators;
- A comprehensive set of Campus Sustainability Indicators from the SYC model will take some time to complete;
- The Campus Sustainability Assessment for the University of Auckland is capable of further expansion and adoption by the University Administration as well as most faculties.

In addition it is possible to make some observations about the Campus Sustainability Assessment Framework (CSAF) as an example of thinking ekistically. These observations include:

- The "egg of sustainability" model is an example of defining the scope of a problem, and portraying it, in a comprehensive way. This is the first step consistent with the idea of *thinking ekistically*.
- This approach is continued with the sub-models for each of the dimensions (e.g. *Ecosystem: Energy*) and the identification of Indicators with targets. This aspect of the approach is effectively introducing an example of a *cascade*, where one moves systematically and consistently through a progression of associated or linked ideas and components.

## Notes

1. "Thinking ekistically" is a description of a process where one brings together in a systematic and holistic way a number of components for an issue, thinks about the relationships between the components to develop the direction of the enquiry, and then works towards a synthesis as the basis of the conclusions. The components may be derived from the five ekistic elements (NATURE, ANTHROPOS, SOCIETY, SHELLS, NETWORKS).
2. With the exception of LAND which was not included in this round of the study for logistical reasons.