

**Creating Campus Culture:  
A Critical Analysis of Residence Sustainability Initiatives at Queen's University**

by

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## **Abstract**

The thesis project considers the role of the university as a major place to build social culture and educate, motivate, and support community sustainable action. The sustainability education initiatives in residences at Queen's University attempt to utilize growing environmental awareness on campus to motivate collective action and transform the way in which the residences and students impact the environment. The programs address pressing issues on campus, such as excessive consumption of resources, and attempt to mobilize the students and the university community. An analysis of these initiatives revealed that students appreciate the importance of sustainability, but are ultimately unwilling to voluntarily modify their behaviour and resource consumption. The programs' lack of success is due to the nature and implementation of the programs themselves as well as an overarching campus culture of inaction. They lack the incentive and motivation needed to effectively engage students in conserving resources and committing to sustainability.

The sustainability movement on campus has been hindered by the complexity of the university and failed attempts to achieve a comprehensive interdisciplinary plan. Numerous subcultures, time constraints, priorities, and experiences between the students, administration, and faculty have weakened the university's effectiveness to address sustainability. The lack of knowledge, culture of inaction, and strong sense of tradition have further contributed to this. Sustainability remains on the fringe of campus culture with little motivation to fully incorporate it into the institution's daily activities. The residence sustainability initiatives demonstrate the university's struggle to conserve resources and enhance students' understanding of and commitment to sustainability.

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## **Chapter 1: Introduction**

### **1.1 Project Overview**

The thesis project considers the role of universities in establishing a culture of sustainability in residences. It examines experimental education opportunities for students in residences at Queen's University to learn about sustainability and resource consumption. Through questionnaires and focus groups, the project evaluates whether the programs have influenced students to become more environmentally aware and committed to sustainable practices. This thesis has three objectives: first, to consider the role of universities in fostering a culture of sustainability. Secondly, it seeks to examine Queen's University's commitment to sustainability and environmental protection. Third, to evaluate the overall effectiveness of residence sustainability programs in raising awareness, conserving resources, and enhancing students' understanding of and commitment to sustainability.

Universities are important because they are well-established centres for discourse and vehicles of social change (M'Gonigle & Starke, 2006). As world leaders in research, innovation, and education, they are key places to address global issues and foster progressive action within current and future generations (Moore, 2005). Concern for the environment and sustainability within institutions of higher education has evolved since the early 1970's when academics recognized the ongoing degradation of the environment and ominous social and economic consequences (Clougston & Calder, 1999). At Queen's University, initiatives to 'green' campus institutions and address the pressures of the looming global environmental crisis have increased significantly in the past ten years to incorporate

over fifty student groups and established offices (Queen's Sustainability Office [QSO], 2009). The university is an important site of study because it plays a key role in establishing social culture and encouraging progressive action within younger generations.

With over 4,000 students and 96% of first year students living in residences on campus, Queen's University's residences represent a major place to build culture and influence younger members of the university community (Queen's Statistics & Information, 2009). Students live full-time in the residences and are often closely connected to their dwelling through social networks and programming. They offer a wide range of services and are supported by a team of professional and student staff that focus on community development, guidance, and support for students (Queen's Residence Life, 2010). With permanent staff and resources, residences are the ideal ground to educate, motivate, and support collective action. They have the opportunity to teach and exhibit the principles of awareness and stewardship of the environment that promotes a healthier natural world for the future (van Weenen, 2000). By implementing 'green' strategies in residences, the university can actively address the environmental degradation and reduce on the environmental impacts of residences while building awareness. Student leaders and staff have the potential to teach environmental literacy and sustainability ideologies to residents who will become influential members of society. With a clear focus on education and support, the residences are well suited to take on a leadership role for promoting sustainable development. The housing facilities and extended services have extensive purchasing power, through investments made and products bought. By demanding environmentally friendly products, research and technologies, the residences can promote the market for sustainable commodities. For these reasons, it is an

important endeavour to study sustainability programs in residences to improve implementation and effectiveness to raise education and awareness.

## **1.2 Emergence of Sustainability and Initiatives in Universities**

Concern for sustainability in the general public rose in the early 1970s as awareness that degradation of the environment detrimentally affected international goals of prosperity and economic justice grew (Clougston & Calder, 1999). The most frequently cited definition of sustainability was stated in the report on the World Commission on Environment and Development (1987) with its focus on new aims for 'our common future.' Sustainable development is 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs.' The definitions and interpretive approaches to sustainability vary depending on the definer's perspective and interest; but as Clougston and Calder (1999) note, each effort generally emphasizes that activities are ecologically sound, socially just, economically viable and humane for present and future generations.

Most of the efforts to date addressing sustainability in institutions of higher education (HE) are heavily oriented toward environmental initiatives. Dahle and Neumayer (2001) describe HE institutions as 'microcosm' sites of environmental issues facing greater society. Hazardous chemicals used in laboratories and abundant pesticides contribute to water pollution and indoor air pollution problems. Transportation to and from campus leads to congestion, air quality and noise problems. Furthermore, carbon dioxide emissions and air pollutants result from burning oil and natural gas to heat water and cool or heat buildings.

Creighton (1999) defines the process of greening HE institutions as the method of reducing on- and off-site environmental impacts that result from campus

decisions and activities, as well as raising environmental and sustainability awareness within the institution's community. By greening their campuses, universities and colleges can teach and exhibit the principles of awareness and stewardship of the environment that promotes a healthier natural world for the future (van Weenen, 2000). The successful activation of campus 'greening' involves the development of a vision that conceptualizes the sustainable university.

Universities are beginning to recognize their own ecological footprint resulting from campus production and consumption practices. HE Institutions have attempted to implement institutional ecology principles and practices to conserve resources, recycle, reduce waste, and improve environmentally sound operations (Wright, 2002). Universities in Canada have enforced operational procedures such as carbon dioxide reduction practices, emission control devices, sustainable building construction, and local food purchasing to meet sustainability targets and goals (Velazquez et al., 2006). For example, the University of Toronto frames its commitment to sustainability through improving its physical operations. The institution's specific objectives include the minimization of energy and water use, waste generation, and pollution (Wright, 2002).

Luis Velazquez and colleagues (2006) reflect that progress can be slow and painful: some institutions' sustainability initiatives have been successful, while other programs have ceased to continue or have an effective presence on campus. The diversity of HE institutions within and between countries makes it difficult to establish an exact overview of where universities stand today with respect to greening. Dahle and Neumayer (2001) argue that institutions are starting to implement daily practices, declarations, and action plans; although efforts in one part of the university are typically offset by lagging operational units.

### **1.3 Addressing Energy and Waste Management in Universities**

Leal Filho (2000, p. 193) suggests that 'going into specifics,' in other words dealing with specific issues and themes such as energy use and waste management, is a strong method of promoting sustainability on campus. With clear approaches and outcomes, successful implementation can give universities a positive impression of greening and catalyze the development of further environmental initiatives. Dahle and Neumayer (2001) credit resource management undertaken to promote conservation and efficiency as a suitable and encouraging starting point for the greening process because the projects are relatively easy to implement and have the opportunity for financial payback. Furthermore, the energy and waste-saving measures in residences focus on students and their habits rather than solely on technology; thereby teaching and demonstrating principles of environmental awareness and stewardship (Creighton, 1999).

Dahle and Neumayer (2001) surveyed universities in the United Kingdom and North America and found that the majority had employed energy managers to supervise conservation and improve the efficiency of their energy systems. Numerous institutions had invested in building energy management systems to control and monitor temperatures, but a significant minority of campus buildings contained such equipment. Only minimal efforts had been taken to incorporate equipment for safe and renewable energy sources, such as cogeneration and solar power. Institutions emphasized the barrier of expensive initial costs necessary to implement energy saving equipment. Ultimately, greening initiatives remained on the sideline of sampled institutions' main priorities.

#### **1.4 Case Study: Queen's University**

The thesis focuses upon sustainability programs in Queen's University, one of Canada's leading universities. It has a prestigious international reputation for learning, social purpose, and spirit. The university is located Kingston, Ontario, a city of approximately 120,000 people (City of Kingston, 2010). The university has 14,000 full-time undergraduate students and 3,200 graduate students. The student body represents 98 different countries, and alumni reside in 158 different countries. It is a highly residential university with over 90% of its first year population living in residences on campus (Queen's Statistics & Information, 2009).

Students have become involved in the sustainability movement on campus and were the first group to establish an official sustainability office. In 2006, the student government, the Alma Mater Society (AMS), employed a student sustainability coordinator to organize committees and direct the actions student volunteers. The office grew out of a growing recognition of the need to address sustainability-related issues at the University and greater Kingston community. It is grounded internally within the AMS and focuses on the environmental, social, and economic sustainability of the student government and its corporate actions. There are three committees that concentrate on student responsibility for a viable environment, as well as reducing energy consumption in both residences and the student village (AMS Sustainability Office, 2009). The Society of Graduate and Professional Students established a sustainability committee in 2008 to address the growing interest in sustainability. The movement on campus has grown from a few grassroots student-led groups leading campaigns and events on campus. Since 2007, the momentum of the sustainability movement has motivated the establishment of offices, coordinators, and formal action plans (QSO, 2009).

Queen's University expressed its commitments to sustainability in 2006 and incorporated these philosophies into written statements in the mission and purpose of the university. The 2006 University Strategic Plan states:

Responsible and engaged citizenship encompasses our need to protect and sustain the environments in which we operate. We will strive to achieve environmental, economic and social sustainability as we foster academic excellence at Queen's. We are committed to helping meet the needs of society while respecting and protecting the ability of future generations to meet their needs (p. 10).

The institution has attempted to address sustainability issues through a variety of outlets, including planning, construction, energy generation and consumption, and research. Queen's has developed a comprehensive long-term development plan that is 'respectful of heritage and the environment, social and financial sustainability of the built and natural environments' (Queen's Strategic Plan, 2006, p. 30).

The institution has established committees involving integral community partners: faculty, staff, students, departments, administrators, and representation from the surrounding community. Physical Plant Services, Campus Planning and Development, University Residences, Hospitality Services, and other departments have established sustainability initiatives within their operations (QSO, 2009). The administration has refined its sustainability policy and developed the Queen's Sustainability Office (QSO) to implement environmental, education, and policy initiatives. The QSO was established in 2008 to advance green initiatives and work with faculty, students, and staff to create a greater degree of awareness about environmental issues. A sustainability manager was hired in addition to three other full-time sustainability staff (QSO, 2009).

The Office of the Assistant Vice Principal (AVP) and Dean of Student Affairs has also addressed sustainability and developed a sustainability coordinator internship in 2007. Student Affairs delivers programs and services on campus in a

wide array of capacities, ranging from health and disability counselors to residence housekeepers to athletic coaches. The division employs 170 staff involved in housing services on and off campus, food services, childcare programs, career services, health and athletic programming, and other diverse outlets (Student Affairs Strategic Plan, 2007). The Student Affairs Strategic Plan (2007) provides a guide to create an active, respectful, and healthy campus for students and staff. The division's active involvement in diverse student activities enables Student Affairs to foster innovative programs and support, encourage, and challenge student awareness of world issues. The Plan suggests formal methods of assessment and evaluation to create and improve programs and services in accordance with the principles of community development.

The university's implementation of community sustainability focuses on revising environmental practices, such as waste diversion, energy conservation, reuse of building materials for new construction, and regulated building materials to improve indoor air quality (QSO, 2009). The university has implemented several energy conservation projects, such as efficient heating, ventilation, and air conditioning systems as well as efficient lighting. The Live Building Integrated Learning Centre incorporates environmental features, including a bio-wall for air filtration, a light well to utilize natural daylight, and display screens with research consumption information. A 20-kilowatt photovoltaic array generates a small amount of the building's power. The university has no formal green building policy, but all new buildings at the university have been designed to meet Leadership in Energy and Environmental Design (LEED) green building standards since 2004. Queen's Hospitality Services mandates that their food suppliers provide as much local produce as possible. The Tea Room, a student-operated café, promotes fair trade

and ethical consumption. Most products are packaged in biodegradable containers, and the recycling program has been intensified to reduce waste. According to the College Sustainability Report Card (2010), the university does not invest in renewable energy funds or community development loan funds. The Sustainable Endowment Institute awarded Queen's University a 'B-' in 2009 for its overall campus sustainability initiatives (College Sustainability Report Card, 2010).

### **1.5 Sustainability Initiatives in Residences**

Queen's Residences provides housing services for approximately 4000 undergraduate and graduate students. Residence Life is a key structure in residences: it employs student and professional staff that aim to form a positive community in the residences and provide guidance and support. The department consist of Residence Life coordinators, full-time, live-in professionals that manage student life, advise house councils, and handle emergencies. They also supervise the dons, who are senior students or university staff that live in residence and work part-time. The dons promote educational programming, enforce community standards, mediate disputes, and provide on-campus academic, financial, medical, or personal health resources for students. The Residence Facilitators are upper-year students that organize social activities, assist in establishing and maintaining community standards, and work with the Dons to create a positive and educational residence experience (Residence Life, 2010). As a key permanent structure in the residences, Residence Life runs a variety of sustainability education programs that are designed to encourage students to incorporate conservation into every day activities (QSO, 2008). The department provides education about sustainability through e-mails, posters, and informational sessions hosted by guest presenters.

They do not have a formal education program implemented, but do encourage students to be aware and reduce their energy consumption.

All students living in residence on Main Campus belong to the Main Campus Residents' Society. The society has over 3,000 members, and students living on West Campus or in graduate buildings belong to the Jean Royce Hall society. The society is governed by the Main Campus Residents' Council (MCRC) and is responsible for maintaining a positive living environment for all residents. The Council is formed primarily of elected student representatives, including the House Presidents, and has three decision-making bodies: the President, three Vice Presidents (Residence Affairs, Discipline, and Finance), and three Coordinators (Events, Services, and Sustainability) (MCRC, 2009). The student Sustainability Coordinator works within the MCRC to make residence operations as green as possible through staff training, distributing plants and composters, and other small-scale actions. The coordinator collaborates with the administration and different groups around campus on large-scale projects with the goal of minimizing redundancy, repetition, and competition. For example, an eco-art project coordinated in late February 2010 between the MCRC, Society of Graduate and Professional Students, and Masters of Environmental Studies students. The program made artwork from non-recyclable waste collected from residences over a two-week time span to promote the message of waste reduction. The coordinator also facilitates the Green Team, a voluntary student organization that offers a variety of opportunities for residents to become involved in sustainability, including a recycling committee, composting and anti-food wastage teams, and a campus cleanup crew (MCRC, 2009). Their goal is to use collective action to conserve resources regionally as well

as encourage the generation of young leaders to make eco-friendly choices in the future.

The Green Team is composed of five committees: Queen's Students Against Wasting Food (QSAWF), Clean-Up Crew, Recycling Team, Composting Crew, Special Ops, and On-call volunteer team. QSAWF has had some success encouraging students to reduce their food consumption in the cafeteria. The group has collected approximately 1000 signatures from students in Leonard Cafeteria who pledge to 'take what they want but eat what they take.' Trayless Tuesdays at the cafeteria on West Campus involve approximately 250 students a week who do not use any trays for lunch. The students visibly take less food and reduce their amount of waste, although a Green Team member noted that participation largely consists of students living in residence who are there for convenience rather than their beliefs in sustainability. The Clean-Up Crew aims to make students aware of the amount of waste produced in residences and encourages residents to reduce the amount. The group meets weekly, but attendance has been declining as the year progresses to approximately two people each week. The group has linked to the Residence Disciplinary system, in which Discipline Facilitators can give students a clean-up sanction for misbehaviour. This has contributed approximately 30-40 students to the crew this year and benefits both the Green Team and disciplinary system.

The Composting Crew has introduced 11 vermicomposters<sup>1</sup> into residence buildings: all main campus residences except Morris Hall and one graduate wing on West Campus. The group has provided education sessions for floors on how to use a vermicomposter and its benefits. Launched this year, the soil from the composters is being used in residence windowsill planters to grow beans and peas. The program

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<sup>1</sup> Vermicomposters are a low-cost form of composting that uses earthworms to break down organic waste (Ndegwa & Thompson, 2001)

is currently on a trial run with the possibility to expand the operation in the future depending on how much waste is diverted (Tousignant, 2009).

The MCRC also helped to establish the Residence Energy Challenge (REC) in 2007 to promote positive behavioural changes towards energy consumption within the residence buildings. Partnered with the QSO, AMS Sustainability Office, Residence Life, and Student Affairs, the yearly program encourages residents to sign a pledge online committing to reducing their energy consumption during a five-week challenge. The inter-residence competition attempts to motivate students to collectively conserve the most energy and involve the highest percentage of people in their residence. During the 2009-2010 academic year the REC was supposed to run twice, in October and January, but due to organizational difficulties it occurred once from March 1<sup>st</sup> to April 1<sup>st</sup>. The winning residence won a trophy, donated a percentage of savings to a project of their choice, and was thrown a party at a student bar. In the previous years, the Sierra Youth Coalition donated solar panels to the winning residence (REC, 2010).

Hospitality Services coordinates the numerous dining hall facilities and food services on campus. The department has made an active commitment to balancing sustainability in the residence dining halls through supporting environmental and social equity initiatives, equitable customer service, and fiscal accountability. They promote several programs, including fully compostable paper plates, purchasing local seasonal produce, and providing non-bottled water in all locations (QSO, 2008). A primary focus is to minimize the amount of food waste generated in the dining halls through composting systems. The pilot program was installed in Leonard Dining Hall in 2008, and its success resulted in the installation of a large unit at Ban Righ Hall and plans for another large unit to be installed. They hope that the

installation of these units will lead to 95% diversion of food waste. Furthermore, any leftover food from the cafeterias is donated daily to Soul Food and brought to homeless shelters in the Kingston area (Hospitality Services, 2009). My Farm, a 76-acre property owned by Sodexo's Executive Corporate Chief Reginald Pearce, aims to strengthen student community experience and demonstrate environmental leadership. In 2008 the farm yielded approximately 200 litres of tomatoes, chili sauce, and beets; Hospitality Services acknowledges that not a significant amount was consumed in the dining halls, but the university plans to sell soups and stews made from the produce at campus farmers' markets.

Hospitality Services has made a concerted effort to commit to green research and packaging options. For example, compostable cups are now used in the Lazy Scholar, a lounge-style café located in the residence Victoria Hall. However, there are no locations in the Kingston area to compost them. They have attempted to use the size of their operations to enact change in the market: when Leonard Cafeteria first started composting there were no manufacturers in Kingston making industrial-size compost bags. By driving the volume of demand and using their influence to stimulate the economy, local manufacturers are now producing industrial-sized compost bags. Furthermore, Hospitality Services has introduced a Green-Seal certified program to clean the residences that has saved large amounts of water. They have begun upgrading residence facilities with modern appliances that are more environmentally friendly, such as low-flow toilets and energy-efficient kitchen appliances. The infrastructural improvements have been gradually implemented through redevelopments and construction projects (Hospitality Services employee, 2010).

The College Sustainability Report Card gave Hospitality Services an 'A' grade for their efforts to address the social justice and environmental impacts of food services on campus (Green Report Card, 2009). Hospitality Services collaborates with student groups and organizations including the Alma Mater Society and the College Sustainability Organization to develop sustainability initiatives in residences. These programs aim to promote awareness and develop a sustainably-oriented culture on campus (Hospitality Services, 2009).

### **1.6 Outline of the Following Chapters**

The following chapters investigate and evaluate experimental sustainability initiatives in residences and examine the overall commitment of the University's community to sustainability and environmental protection. First, the conceptual background explores how the thesis is grounded within ideologies of environmentalism and the green movement. The social construction of environmentalism has been utilized to justify change and mobilize collective action in societies and on campus (Harper, 2007). Castree's theory of 'social nature' (2001) relates the subjective meanings and discourses of nature and the environment according to the dominant culture's definition. Human power structures are embedded in the ideology of sustainability, which has been mobilized to propel the environmental movement on Queen's campus. The rise of global environmentalism has been stimulated by the pressing nature of transnational environmental problems. The Green Movement has built upon popular support based upon four pillars: ecology, social responsibility, grassroots democracy, and peacefulness (Roseland, 1997). The residence sustainability initiatives mobilize this public ecology movement to engage students in becoming more environmentally conscious. The chapter reviews the strengths and

weakness of environmentalism and the implications on campus sustainability initiatives.

The conceptual background then focuses on the university as a place to model Richard Register's eco-city concept (2006). The eco-city was envisioned as an organic ecological society incorporating green urban strategies, social equity, and economic development. It presents the opportunity to apply innovative green technology to make the city more sustainable and reduce its ecological footprint. The university campus functions as a city on a smaller scale and can incorporate Register's eco-city principles to enhance the institutions economic, social, and environmental integrity (Beatley, 2000). Applying the theories of sustainable green communities is a working project driven by small and large-scale visions. It represents a goal and direction for institutional development, and the residence sustainability initiatives are a key component to engage students in this.

The third chapter explains the project research methods and mixed-methods approach. It discusses the methods chosen and the strategic design of the instruments. It also describes the administration of each method, the participant responses, and how the data was analyzed. The fourth chapter provides the results and interpretations. It explores the key themes that emerged from the data collected regarding the role of Queen's in fostering a culture of sustainability, the institution's and student's commitment to sustainability, and the effectiveness of residence sustainability programs. The final chapter provides an overview of the project and major arguments. It provides conclusions and recommendations to establish a framework for visualizing and achieving a sustainable university.

## **Chapter 2: Conceptual Background**

### **2.1 Environmentalism: Ideology and Action**

The thesis project is grounded within environmentalism: an ideology and collective action regarding concerns for environmental conservation and the improvement of human-environment relationships. Harper (2007) defines environmentalism as a socially constructed set of beliefs that have transformed the way in which communities, corporations, governments, and societies relate to the natural environment. The ideology is not just an abstract concept; it has been used deliberately to justify change and mobilize people into collective action (Harper, 2007).

Castree (2001) explores the theory of 'social nature' that is embedded within environmentalism. Nature is not simply an external physical concept; it is internal and intrinsic to our society with subjective meanings and surrounding discourses. The eco-centric ideology underlying the green movement urges a fundamental respect for, and need to get back to, nature. It is inevitably social, and different cultures define and reconstitute nature, usually according to dominant social interests. Demeritt (2001) argues that the social construction of nature and environmental problems involve important political issues. For example, manifest destiny was a powerful human-environment ideological frame that remained largely unchallenged as the dominant environmental discourse from 1620 until the middle of the nineteenth century. Harper (2007, p. 273) argues that it was a 'moral and economic rationale for exploiting natural resources, assuming that nature has no intrinsic value, that human welfare depends on the exploitation and development of nature, and that human inventiveness and technology can transcend any resource problem.' Preservism in the 1830s portrayed nature as undisturbed pristine

wilderness and wildlife necessary to the physical and spiritual wellbeing of humans. By the 1890s, the wildlife management ideology gained predominance and claimed that the scientific management of ecosystems and harvesting was necessary for a healthy society (Harper, 2007). Various environmental discourses since then have shaped truths and skewed the actual conditions of reality according to the ideas and wishes of the observer.

Castree (2001) identifies the need to recognize the biases constituting different views of the environment and denaturalize and deconstruct the ideologies embedded within environmentalism. By analyzing the residence 'greening' initiatives and the culture of sustainability of universities, we can uncover human power structures embedded within the framework of language and common social conceptions on campus. We can analyze how ideologies of nature can be utilized to distort the truth as well as serve specific social interests, such as utilizing a certain vision of the environmental movement on campus to propel collective action (Castree, 2001).

## **2.2 Global Environmentalism**

Propelled by increasing cooperation among the world's scientific community, environmentalism has expanded beyond western developed nations to encompass the globe. Harper (2007) argues that this was stimulated by the emergence of environmental problems that transcended national boundaries, such as nuclear radiation concerns, air and water pollution, transnational shipment of hazardous materials, reduced global diversity, and dilemmas about the use of outer space, the seas, and the Antarctic region.

Reform environmentalism, a more recent environmental discourse that gained influence in the 1970s, viewed these problems as 'more complex in origin, often stemming from new technologies; having delayed, complex, and difficult-to-detect effects; and having consequences for human health and well-being as well as natural systems' (Harper, 2007, p. 276). The mainstream media highly publicized environmental disasters and broadened public awareness, such as the 1986 diffusion of radioactivity from the atomic nuclear reactor disaster at Chernobyl in the USSR. The event was widely reported in the international media, and dramatized the environment's vulnerabilities. Harper (2007, p. 277) claims: 'ecology became a word known – if incompletely understood- by the average citizen. Many were no longer willing to accept pollution and environmental disruption as business as usual and complained about businesses that produced them and governments which failed to protect against them.'

The Green Movement built on growing popular environmental support and took various social and political forms in different countries to promote reforms. The 'four pillars' based upon ecology, social responsibility, grassroots democracy, and non-violence unite the Green Movement. Roseland (1997) states that this translates into principles of 'community self-reliance, improving the quality of life, harmony with nature, decentralization, and diversity' (p. 199). The residence sustainability initiatives build upon growing popular environmental support to raise awareness in the on-campus residences. The projects encourage students to take social responsibility and make a commitment to reducing their ecological footprint and resource consumption.

### **2.3 Environmentalism: How Successful?**

Harper (2007) claims that early reform environmentalism in the 1970s focused primarily on pollution and health-related concerns, then expanded to encompass global ecological problems, such as biodiversity loss and global warming. Ecological scientists focused on the research of natural and physical scientists, largely failing to investigate the social and political causes of ecological degradation. The discourse obscured social driving forces and resulted in a partial analysis of environmental reforms. The residence greening initiatives evidence the transformed culture and consciousness calling for public ecology to engage community citizens in the collective effort. The programs advocate the democratization of the environmental movement by engaging students and campus members locally.

The environmental movement has forced governments, corporations, and institutions (including universities) to be more socially and environmentally acceptable. Harper (2007) states that it has encouraged the development of green technologies and the green job sector, including environmental planning and consulting. Environmental consciousness has become embedded into popular culture as well as political policies. Education, knowledge, and awareness have spread across a wider population. New academic programs and research opportunities, such as sustainable development and energy conservation, have consequently emerged. Widespread environmentalism has created a framework of social values that we can use to interpret environmental initiatives and activities.

In spite of much evidence of altered culture and awareness, Harper (2007) also states that it can still be argued that environmentalism has not been successful, evidenced by the ongoing problems in the biophysical environment. Despite decades

of mobilizing action and great investment, there have not been significant improvements in the environment. Ecological degradation and concerns have persisted, even worsened. One weakness in the movement is that most environmental groups treat supporters as donors rather than citizens. Information is presented in elitist technocratic language filled with challenging technical scientific jargon. The reliance on environmental 'experts' and non-democratic passive dissemination of information to members can slow progress and meaningful action (Harper, 2007).

#### **2.4 The University: A Place to Model The Eco-City**

In 1975 Richard Register developed the eco-city concept, an inspirational vision of the city as an organic ecological society in harmony with nature. Roseland (1997) summarizes the theory as incorporating ideas about housing, urban planning, transportation, health, energy, economic development, and social justice. Register (2006) argues: 'cities are by far the largest creations of humanity. Designing, building, and operating them has the greatest destructive impact on nature of any human activity' (p. 1). T. Beatley (2000) notes that cities must become more central in the global agenda of sustainability due to their sizeable ecological footprints, including the amount of energy and resources necessary to support the urban population and loss of sensitive habitat. Eco-cities propose a fundamentally new approach to building and living in cities, towns, and villages, a potentially more cohesive vision for human settlements. They present new opportunities to both apply innovative green technology to areas such as public transit, district heating, building and design, as well as encouraging major lifestyle changes in reducing resource consumption and unnecessary waste. Register (2006) states: 'if cities are to fulfill an

evolutionary and environmentally healthy purpose of some sort, it is necessary that they be as trim and energy-efficient in their activities as natural ecological systems invariably are' (p. 48).

University campuses function as a city on a smaller scale, therefore emphasizing the important role of positive urbanism in shaping more sustainable places and lifestyles (Beatley, 2000). Communities can incorporate Register's eco-city concepts to develop more economically, socially, and environmentally sustainable practices, such as alternative energy and public transit. The building strategies follow ten principles in order to restore damaged urban environments, revise land-use priorities, and create compact green cities – or campuses (Roseland, 1997, pgs. 197-198):

1. Revise land-use priorities to create compact, diverse, green, safe, pleasant and vital mixed-use communities near transit nodes and other transportation facilities
2. Revise transportation priorities to favor foot, bicycle, cart, and transit over autos, and to emphasize 'access by proximity'
3. Restore damaged urban environments, especially creeks, shore lines, ridgelines and wetlands
4. Create decent, affordable, safe, convenient, and racially and economically mixed housing
5. Nurture social justice and create improved opportunities for women, people of color and the disabled
6. Support local agriculture, urban greening projects and community gardening
7. Promote recycling, innovative appropriate technology, and resource conservation while reducing pollution and hazardous wastes
8. Work with businesses to support ecologically sound economic activity while discouraging pollution, waste, and the use and production of hazardous materials
9. Promote voluntary simplicity and discourage excessive consumption of material goods
10. Increase awareness of the local environment and bioregion through activist and educational projects that increase public awareness of ecological sustainability issues

Register (2006) establishes the eco-city principles to build sustainable communities and translate urban ecology concepts into practice. He examines how to build and live in a healthy physical structure, thereby treating the city as a living system

designed for living beings not machines. Reversing the transportation hierarchy in order to promote pedestrians and bicycling, as well as building soils and enhancing biodiversity, are steps to a healthier and more natural society. Universities are microcosm sites of social and environmental issues facing cities, including the use of hazardous chemicals, air and water pollution, social equity, transportation, and housing access (Dahle & Neumayer, 2001). These issues can be better addressed through the application of Register's theories, such as re-structuring public transit and utilizing alternative energy. To build a compact green campus, the university can use Register's guide for sustainability and regeneration.

### **2.5 Green Communities: From Concept to Practice**

Green communities have transformed existing sites and moved from experimental to mainstream. Nicholas Low and colleagues (2005) argue that the primary task is to transform the structure and urban planning of existing cities and towns so that their future building and rebuilding is planned within green principles. They argue: 'there is no single perfect political mechanism that will simultaneously deliver ecological sustainability, social justice, and economic success while protecting the rights of the individual' (p. 167). We must find the best combination of imperfect mechanisms, such as the political and economic system. Low et al. (2005) cite Allan Rodger, who states that every person, regardless of their function, status, or position in the global society, has a unique personal interest in the long-term well being of the planet.

Building green communities is a working project driven by committed individuals, social action groups, governments, and the private sector. Green policies gain strength through many coordinated small-scale actions heading towards the same goal. This includes housing and transportation regulations, as well as

governmental, workplace, and institutional policies. Environmental planning also incorporates wide scope plans beyond the confines of current town planning institutions and long term visions to address the enduring nature of environmental crises (Low et al., 2005).

The process of changing the institutional landscape is slow, complex, and frequently contested. It has faced political setbacks and bureaucratic roadblocks, but there is progress to sustainability (Velazquez et al., 2006). Low and colleagues (2005) state: 'The green city is a working project not a utopia' (p. 205). It represents a goal and direction for development driven by community collective action to abandon growth as the governing principle. Universities are slowly building towards the ideal sustainable community (Dahle & Neumayer, 2001), and the residence 'greening' initiatives are a key component of encouraging students to become more environmentally aware and committed to sustainable practices. As a leader in education and innovation, the university is an ideal place to overcome institutional barriers in order to address global issues and foster collective action within current and future generations.

## **Chapter 3: Research Methods**

### **3.1 Mixed-Methods Approach**

Methodologies employed during this investigation harnessed both quantitative and qualitative methodologies including two web-based questionnaires administered to students in residences and dons, semi-structured interviews with key members of residences and administration, and a focus group session with student sustainability leaders. The mixed-methods approach to evaluating the experimental sustainability education programs allowed for a rich and in-depth analysis. The mixture of qualitative and quantitative measures enabled a deeper exploration of the programs from a number of residence community members (Commander & Ward, 2009). These methods were selected because they allowed participants to express their personal experiences and opinions about the residence programs and sustainability initiatives in general at Queen's University. The methods were also able to analyze the student participant response of the programs while evaluating their effectiveness in increasing student's awareness of and commitment to sustainability. The qualitative research methods are contextualized and supported by the quantitative analysis from the questionnaires, thereby revealing the multiple layers of narrative meaning hidden by the numbers (Crang, 2002). A method of triangulation was employed to find convergences and corroboration between findings from the different methods. Furthermore, the findings from one method were used to elaborate, illustrate, enhance, and clarify results from the other method. Finally, the mixed-methods approach expanded the breadth and range of inquiry (Commander & Ward, 2009).

With the involvement of human subjects, General Research Ethics Board (GREB) approval was required. The researcher submitted an application to the

Geography Unit Board detailing the project, research methods, and an appendix of the instruments and documents for participants. It reviewed recruitment procedures, benefits and risks of participation, informed consent, and participant privacy. The departmental unit approved the application, and GREB then expedited the process to grant full approval for the project.

### **3.2 Questionnaires**

The questionnaire method was a time and cost effective method to survey a large sample of residents and dons. The survey method was familiar and comfortable to most students since they have had some experience completing questionnaires (Winchester, 1999). The method is less intrusive and intimidating than telephone or face-to-face surveys, and students had the opportunity to complete the questionnaire on their own time within a three-week period. The uniform presentation of the questions reduces bias in the study because the researcher cannot influence the subject with verbal or visual cues (Crang, 2002).

The questionnaire examined students' perspectives about Queen's sustainability programs and asks for feedback on how to improve sustainability education and initiatives in residences. The instrument contained questions that assessed the role of the university and residences in committing to and fostering a culture of sustainability and environmental protection. It evaluated the overall effectiveness of the residence sustainability programs by asking students skill-testing questions about sustainability and their level of commitment to and activities within the programs. The instrument used a mixed format of different question styles: multiple-choice provided quantitative data that could be tabulated and analyzed, while short answer responses allowed for qualitative data collection. The qualitative responses

summarized students' opinions and provided 'hard, generizable' data (Commander & Ward, 2009, 26). The corresponding short answer questions probed for a deeper level of analysis by asking students to explain their attitudes and experiences. The personal responses linked to the quantitative data and served to elaborate, illustrate, enhance, and clarify the results (Commander & Ward, 2009).

A stratified sample of 600 students across all residence halls was drawn from the Queen's University's Residence Database. Following GREB procedures, a letter of information was distributed through email introducing the study and the types of questions on the questionnaire, as well as ensuring full disclosure, informed consent, voluntary participation, and anonymity. A follow-up email was sent one week later to remind students to participate. The email provided a link to the Student Voice platform, which provided the consent form and enabled students to complete the online questionnaire. 102 residents completed the online survey, and the platform provider StudentVoice captured and stored the responses. 70% of respondents were in their first academic year, 20% between second and fourth academic year, and 10% were graduate students. 12.5% of respondents lived in residence on West Campus in Jean Royce Hall, and the largest number of respondents lived in Watts and Victoria Hall with 16% of respondents each.

A similar questionnaire was sent to all residence dons at Queen's, whose contact information was located through the Queen's University's Residence Database. A letter of information was sent out introducing the study and the types of questions on the questionnaire, as well as ensuring full disclosure, informed consent, voluntary participation, and anonymity. A second email reminded the dons to follow the online link provided to participate in the online study. The instrument probed about sustainability education on campus and in residences, particularly how the dons

promoted sustainability initiatives on their floors. The design of the instrument was similar to the residence survey and used a mixed format of different question styles. The standardized multiple-choice questions provided qualitative data that was recorded, coded, and analyzed. It gathered a wide range of information surveying the participants' attitudes, values, beliefs, and past behaviours (Thomas, 2003). The open-ended questions enriched the statistical results and expanded the breadth of inquiry (Commander & Ward, 2009). The dons were asked to justify their opinions on programming and provide information on additional supports and resources they would have required to improve sustainability education in residences. 25 dons responded to the online questionnaire, and their responses were stored by the platform StudentVoice.

### **3.3 Focus Groups**

One focus group session was conducted with the MCRC Green Team members to explore opinions from students committed to sustainability. The focus group provided accurate information and gathered qualitative data about the student leaders' perceptions, opinions, beliefs, and attitudes towards sustainability in residence. The group discussion produced insights that were less accessible in the questionnaire without the interaction found in the group setting, such as listening to others' verbalized experiences and ideas (Thomas, 2003). The group interaction constructed a common language that was used to describe similar interpretations and personal experiences regarding sustainability in residences. It provided the opportunity for disclosure among similar peers, in which their experiences were validated. The focus group was a time-efficient method of garnering a large amount of in-depth qualitative data (Morgan, 1997).

The focus group session utilized a semi-structured question format designed to guide the discussion for approximately one hour. The open format allowed for open communication and a comfortable friendly atmosphere that promoted the free expression of opinions and ideas. A letter of information was sent to all Green Team members, approximately 30 students, inviting them to participate in a discussion focused upon sustainability programs in residences. Students signed a consent form before engaging in the discussion that ensured informed consent, voluntary participation, and confidentiality. The researcher moderated the group of eight students in their first and second year of academic study and living in residence. A tape recorder was used to capture the interview exactly as it was spoken, eliminating the stress and distraction of missing a remark. The taped interview was later transcribed, thereby creating a text that reproduced the discourse and provided exact quotes to be used in the report (Lindlof & Taylor, 2002).

### **3.4 Individual Interviews**

Individual interviews were conducted with the MCRC student sustainability coordinator and key administrators in residences and hospitality services. The interviews provided in-depth and comprehensive information regarding residence sustainability programs and their programs' specific initiatives. The method was well suited to understand the university community member's experience and perspective through accounts, opinions, and explanations (Lindlof & Taylor, 2002). It also verified, validated, and enriched the data collected from the questionnaires and focus groups. Through the face-to-face interview, the researcher was able to establish trust and rapport with the respondent, as well as observe the participant's body language and facial expression (Crang, 2002).

The interviews employed a semi-structured interview format that was less rigid than the structured questionnaires, thereby allowing for a greater diversity of responses and outcomes. The participants were able to explore more complex questions and elaborate on any areas of particular interest or importance (Lindlof & Taylor, 2002). The question format enabled the interviewees to become informants by providing data from their own perspective and words (Commander & Ward, 2009).

The interviews were conducted over a one-month period. Following GREB procedures, participants were first approached through a letter of information explaining the purpose of the project and the interview format. Staff and members of the MCRC, Hospitality Services, and Residence Life, and the AMS were approached through an introductory email. They were selected because of their key involvement in residences and sustainability on campus. Student members of the AMS and MCRC that were emailed replied that they did not have time to participate in an interview, with the exception of the MCRC Sustainability Coordinator. Hospitality Services and Residence Life employees were willing to conduct the interview, and the researcher conducted two interviews with staff members. Before beginning the interview, the participants signed a consent form that ensured informed consent, voluntary participation, and confidentiality. The interviews lasted forty-five minutes on average and were tape-recorded and later transcribed by the researcher. The qualitative data gathered from the interviews and focus group complemented the quantitative data of the questionnaires to provide a comprehensive analysis of sustainability programs in residences.

### 3.5 Data Analysis

In order to examine and judge the successes and effectiveness of sustainability initiatives in residences, the project involved various forms of qualitative and quantitative data analysis. Analyzing statistical data from the questionnaires and then comparing the data to the qualitative interpretations of the interviews established themes, patterns, and categories. Triangulation, a research analysis technique, was used to validate data through cross verification from the multiple sources. By combining multiple theories and mixed-methods, the project was better able to overcome the weaknesses and intrinsic biases inherent from a single method, single-theory study (Patton, 1990).

Statistical analysis was applied to the quantitative portion of the research derived from the online questionnaires. The data was formatted as data tables and produced illustrative figures and charts based on basic tabulation. The interpretive examination of the data considered emerging trends and patterns within student understanding of and commitment to sustainability, as well as the role of the university in establishing cultural change. The corresponding analysis of focus group and interview data involved a number of stages and in-depth, thematic examination (Morgan, 1997).

The quantitative analysis used the analytical concept *grounded theory* (Patton, 1990), which emphasized generation of theory from data in the process of conducting research. After data collection, transcripts of the sessions were reviewed, and a list of key terms and codes established. The codes were grouped into similar concepts, and this formed the basis for categories and theories. The themes were based upon the student culture of sustainability at Queen's, and perceptions of experimental sustainability programs.

## **Chapter 4: Results and Interpretations**

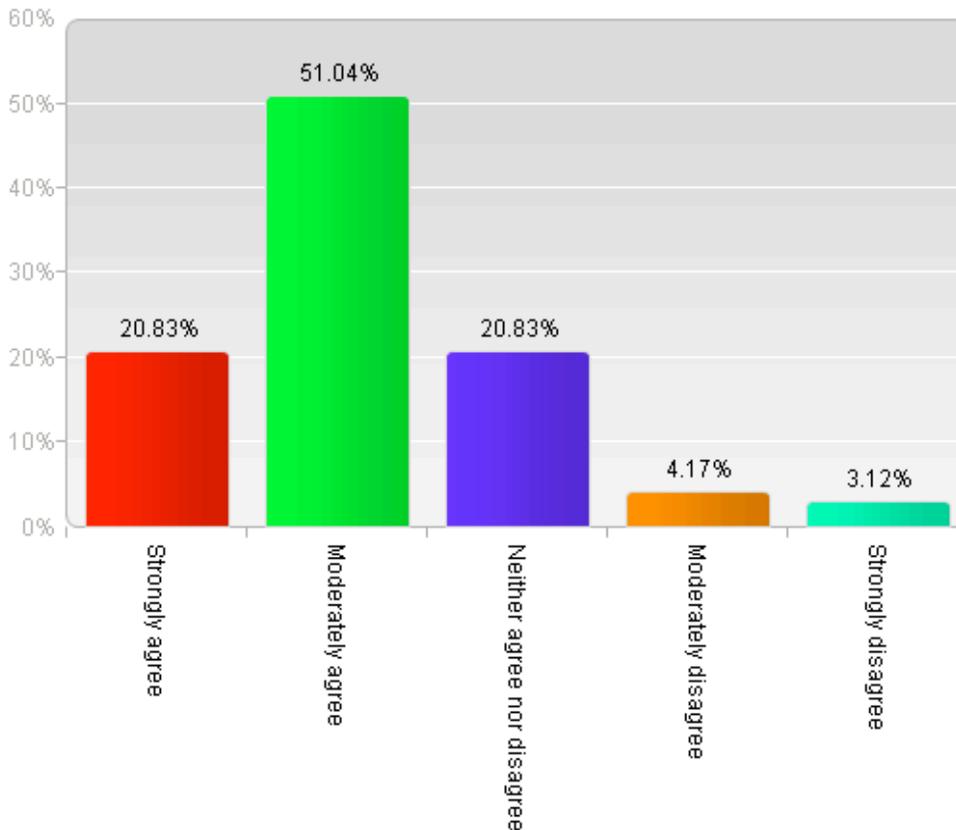
### **4.1 Major Themes**

A number of key themes emerged in the data collected from the questionnaires and interviews. First, students appreciate the importance of sustainability and consequently have made efforts to adjust personal habits to adopt a more sustainable lifestyle. Second, in order to establish sustainability within cultural norms, we must utilize both an individual and administrative approach. The University has a responsibility to teach future leaders, but individuals must also take the initiative to educate and act themselves. Third: despite expressing a commitment to sustainability, students lack engagement with the education programs in residences. Students are unaware of how to become involved in experimental residence programs and do not know much about them. Fourth, residents are unwilling to voluntarily dedicate their time and efforts to residence sustainability programs. Fifth, the programs lack the engagement, excitement, and incentives needed to motivate engagement. Sixth, this sentiment is couched within an overarching dissatisfaction surrounding sustainability initiatives at Queen's University. The institution's strongest weakness is that sustainability initiatives on campus lack coordination and organization, such as an over-arching central administrative body. Finally, the chapter will explore participants' recommendations to improve sustainability programs in residence and on campus in general.

### **4.2 Cultural Appreciation of the Importance of Sustainability**

The questionnaire revealed that students appreciate the importance of sustainability and believe that issues regarding social equity, environmental conservation, and economic sustainability are important. 95% of students and dons surveyed agreed

that sustainability issues should be addressed. They expressed a strong desire to make a difference through modifying their resource consumption and environmental practices. The majority of residents confirmed that they had made efforts to adjust their personal habits to adopt a more sustainable lifestyle (see Table 1).



**Table 1.** Student questionnaire responses to the statement: *'I have adjusted my personal habits to adopt a more sustainable lifestyle.'*

Students are concerned about our common future and want raise awareness, inspire others, and pressure widespread institutional change. One student responded: 'I want to be able to help make a visible impact on my local community, inspire my fellow students, and sway the minds of administration to adopt sustainability principles.' Education and awareness are essential to ensuring a sustainable future.

It is important because the issue is so complicated and multi-faceted, we need help to focus on the issues and realize that sustainability is complicated. The participants identified education's vital role in ensuring a resource-secure future with modern, renewable, and efficient technologies integrated into a widespread ethic of conservation.

#### **4.3 Dual Responsibility to Promote Sustainability Education Initiatives**

In order to establish sustainability within cultural norms, we must utilize both a bottom-up grassroots and top-down administrative approach. The participants expressed that the University has a responsibility to teach future leaders, and residences represent a major place to expose younger students to the concrete application of sustainable practices. A Residence Life employee stated that residence programming should provide the younger generation with opportunities to learn about sustainability and how to enact change while at the university and beyond. A multi-faceted approach is needed between different components of the university to better target diverse niches of students. The administration's permanent structure provides continuity to the frequent turnover of students.

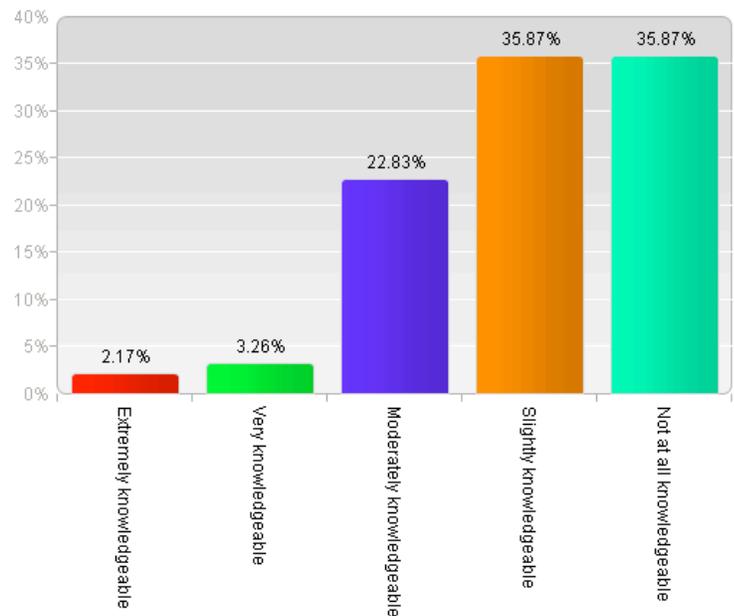
Individual student action was identified as the necessary balancing component to promote sustainability initiatives on campus. A Green Team member stated: 'Our society is composed of individuals. To blame the institution and greater society for failing to act sustainably serves to take the responsibility off of oneself.' Participants expressed that meaningful change is achieved through the collective efforts of committed individuals. They noted that the environment can be improved significantly if individuals change their behaviour to adopt more sustainable

practices. The residence sustainability initiatives focus responsibility for taking action upon students themselves.

#### 4.4 Students Largely Unaware of Residence Programs

Despite expressing the important responsibility of addressing sustainability, students lack engagement with the experimental sustainability education programs in residences. 43% of residents surveyed stated that they were unaware of the programs and did not know how to become involved. Students were not confident in their knowledge about the residence programs (see Figure 3).

This lack of knowledge was reflected in the difficulties students had answering basic questions about the residence sustainability programs. For example, over 50% of students did not know what type of composter had been installed on residence floors. On average, less than a third of respondents answered knowledge questions correctly, while 25% responded that they did not know the answer. The questionnaire results reflect students' lack of engagement in the residence programs and an underlying non-commitment to modify their behaviour.



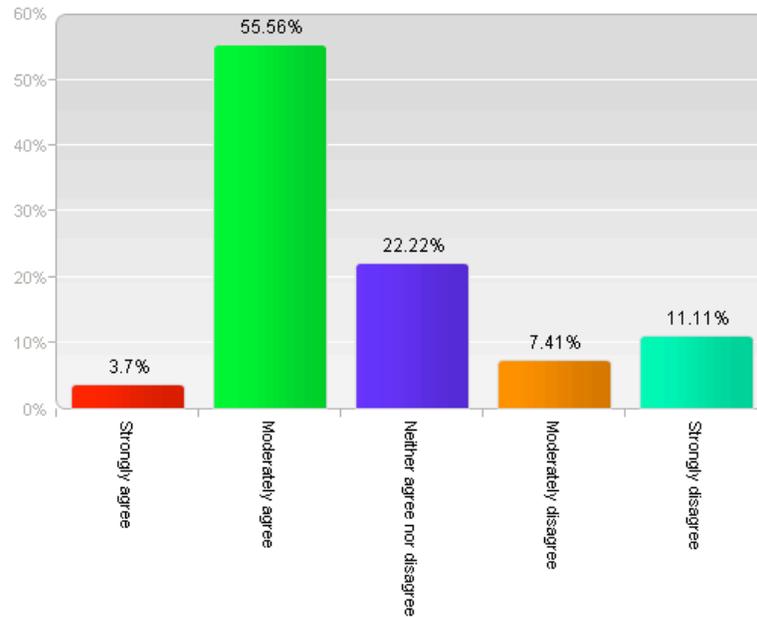
**Figure 3.** Student response to how knowledgeable they are about residence sustainability programs.

#### **4.5 Students Unmotivated to Voluntarily Commit to Sustainability Initiatives**

The majority of students are not willing to actively commit to sustainability initiatives; student leaders noted the key difference between expressing interest and dedicated involvement in a program. For example, the MCRC Green Team collected over 250 names at initial sign-up. 30 individuals have since joined the club, and approximately twelve core individuals have coordinated most of the group's activities. The Special Ops initiative has managed to distribute ten personal windowsill gardens this year despite many more residents initially expressing a keen interest. In 2009, Hospitality Services created a green-themed residence floor for students dedicated environmental practices, but had to combine the theme with two other floors in order to meet the required occupancy. Furthermore, Green Team members have noted that many students sign QSAWF's Leonard Food Pledge without altering their food consumption or reducing waste. The Green Team has grown in size since its establishment in 2008, but still involves less than one percent of all students living in residences (Queen's Statistics & Information, 2009).

Without enforcement or incentives, students are passively supportive of the sustainability initiatives without truly committing or modifying behaviour. Only 58% of respondents stated that they were committed to the program, and this does not account for the 500 residents who did not respond to the questionnaire. The majority explained that they were involved in QSAWF's Trayless Tuesday program at the West Campus cafeteria, although several residents stated that this participation was not voluntary. By living on West Campus and choosing to eat in the nearby cafeteria, the residents did not have a choice about whether or not to use a tray at Tuesday lunches because none were available. Those involved in the programs did not

express a widespread commitment; over 15% stated that the programs had not altered their consumption habits (see Figure 4).



**Figure 4.** Student perspective on whether participation in residence sustainability programs altered personal consumption habits.

Furthermore, the majority of students involved in the programs doubted that it would impact future resource consumption habits.

Residents expressed that this was because programs features, such as vermicomposters,

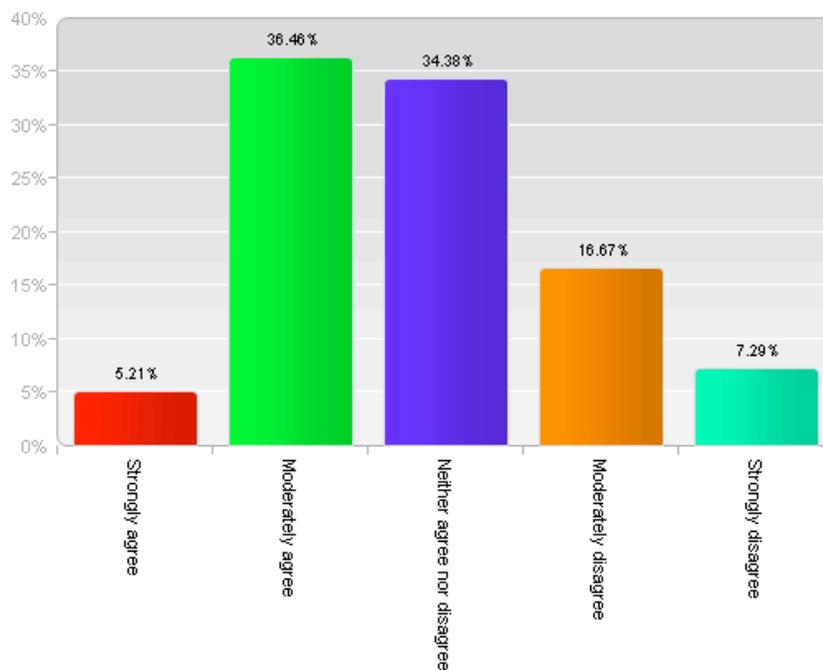
recycling resources, and windowsill gardens, would not be available outside of residence. They did not have the desire or initiative to continue the sustainable practices independently in the future.

Participants expressed that the programs lacked the entertainment and incentives needed to motivate committed participation. Over 65% of students surveyed had not participated in the programs, mainly because they were not compelled to seek out the programs and were too occupied with personal priorities, such as schoolwork and extracurricular activities. A Hospitality Services employee reflected that first year students entering the university environment can become very overwhelmed with the multitude of new experiences. They are attracted to exciting opportunities on campus, and the residence sustainability programs lack this

enthusiastic engagement. Students approved of the competitive-based nature of the REC and recommended the facilitation of more spirited programs to motivate action and awareness. They stated that the nature of the programs is informative and useful, but lacks engagement, interest, and fun. Several respondents expressed that the programs, such as Trayless Tuesdays and new dining hall procedures, were more of an inconvenience and nuisance than positive activity. Furthermore, students reported that it was discouraging to engage in resource consumption reduction programs when certain key elements were out of their control. Students explained that their residence hallway, washroom, and cafeteria lights are constantly on, and some criticized that they could not control their own heating or lighting system.

#### 4.6 Mixed Approval of Sustainability Initiatives at Queen's University

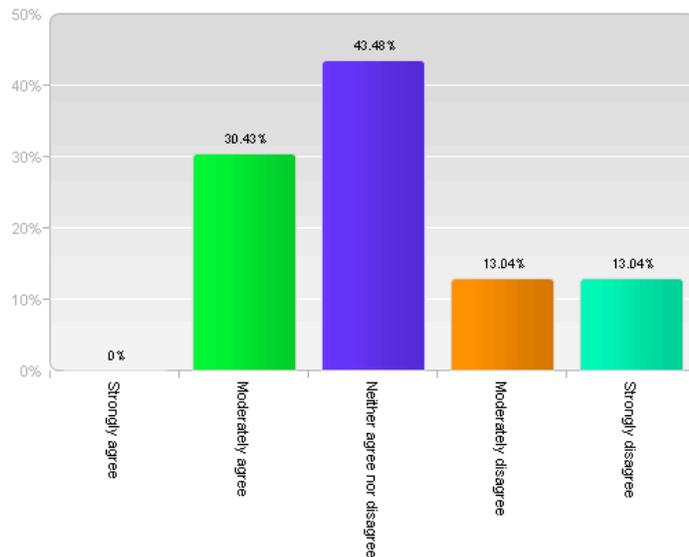
Students expressed mixed approval regarding how the University is handling sustainability issues on campus. Nearly one quarter of participants disapproved with Queen's policies and current sustainability action plans (see Figure 5).



**Figure 5.** Student response to way in which Queen's is handling sustainability issues on campus.

Students expressed concern that the university is only starting to address sustainability as an urgent issue and has been slow to implement widespread and effective change. For example, the widespread installation of solar panels on open roof-space has not been achieved. The winning residence of the REC did receive solar panels from the Sierra Youth Coalition, but the donation has not been continued nor has it been accompanied by the further installation of solar panels on residences. There were mixed concerns that the implementation of some green strategies may be part of a ‘greenwashing’ marketing campaign, in which the administration disingenuously promotes sustainable environmental policies for marketing and financial gains (Laufer, 2003). The MCRC Sustainability Coordinator discussed Principal Woolf’s effective leadership and recent positive contributions to sustainability. Woolf has signed the Ontario and Canadian Climate Commitment: a multi-step, long-term approach in developing an aggressive yet achievable position to advance sustainability

measures at Queen’s (Queen’s News Centre, 2010). The recent creation of the Queen’s Sustainability Advisory Committee (QSAC) is designed to bring together student representatives, faculty researchers, and administrative members. Although this is a positive step, the committee has not met regularly and progress has been hindered because each



**Figure 6.** Don response regarding whether the current curriculum provides students with sufficient opportunities to engage in sustainability education

member has individual priorities that can conflict. Students, and dons in particular, do not believe that the current curriculum provides sufficient opportunities for students to engage in sustainability (see Figure 6).

The current structure of sustainability at Queen's lacks coordination and organization. Without an over-arching central administrative body, the effectiveness of sustainability initiatives is marred by the potential for repetition and missed opportunities. Students expressed that they did not know where to seek information and contacts about sustainability. One respondent wrote: 'I don't really understand what 'sustainability' means. It is a word that is thrown around an awful lot without any discussion on its true significance. It seems more like a trend than actual way of living.' Students advocated the integration of sustainability into diverse outlets of the university community to achieve widespread action.

#### **4.7 Suggestions for Improving Sustainability Initiatives**

The participants expressed numerous methods to improve sustainability programs in residence and on campus in general. The primary suggestion was to coordinate and organize sustainability initiatives to gain widespread awareness and a comprehensive interdisciplinary plan. The permanent structure of residence staff and administration provides continuity and resources to support student grassroots initiatives. The size of operations enables Hospitality Services and other facets to exert pressure on the institution and market place. For example, Kingston manufacturers are now producing industrial-size composting bags based upon the university's demand for local composting supplies. The size and permanency of the administration provides a balancing support to peer-to-peer education programs implemented by students. Students can better gauge student culture to promote

awareness among their peers. By condensing the sustainability pockets on campus and enhancing cooperation, the university can better address sustainability.

Participants expressed the need for additional supports and resources. The residence dons suggested the creation of additional hired live-in residence sustainability coordinators to mobilize action. One respondent expressed: 'dons are becoming overworked. There is already a lot expected of us, and as residence grows it becomes increasingly difficult to manage all the conflicting demands... I had to give priority to other urgent issues such as human rights abuses, mental breakdowns, exclusive language, and academic pressures that most first years are experiencing on a daily basis.' Residence dons expressed that it was difficult to find the time and motivation to become heavily involved in the sustainability programs. A Hospitality Services employee suggested the establishment of enhanced support in residences through hiring experts to seek out new information, introduce new ideas and technologies, and coordinate sustainability initiatives. Additional funding opportunities need to be created through further resources, advertisements, and other methods. Students also identified the need for accessible resources and contacts, and suggested the creation of a main website online with a list of campus organizations dedicated to environmental and social equity initiatives in Kingston.

Sustainability is a broad and general topic that needs to be better integrated into the structure of residences and the university. Comprehensive across-the-board stewardship in both educational and operational areas needs to be harnessed. Participants suggested the mandatory incorporation of prominent sustainability initiatives into orientation week, don training and programs, residence workshops and further activities. By facilitating early contact with new residents, programs can have a greater impact and send a stronger message of ethical resource

consumption and sustainability priorities. Improved recruitment methods are necessary to approach more students and raise awareness in additional channels of communication.

Finally, the residences and University need to develop formal methods of integration and assessment. Sustainability program organizers expressed optimism that the programs are affecting students, but admitted that they did not know the true effectiveness and successes of the initiatives. Beyond the visible actions of a small number of committed individuals, it is difficult to assess the long and short-term change made by the programs. A Residence Life employee suggested the establishment and ratification of guiding principles that creates a status quo for the university. One questionnaire respondent argued: "Volunteerism is not the answer. The change must be structural." By establishing standards, each department could work towards those requirements while making their own goals and activities. Comprehensive sustainability audits would monitor and analyze financial operations as well as the institution's social and environmental performance. Incorporating sustainability into the economy, society, politics, and culture of the university could provoke the paradigm cultural shift needed.

## **Chapter 5: Conclusions**

### **5.1 Overview**

The Queen's University sustainability initiatives in residences attempt to utilize growing environmental awareness within the green movement to transform the way in which the university residences impact the environment. The programs address pressing issues, such as excessive energy consumption and waste, and try to mobilize the students and the university community into collective action. Students appreciate the importance of sustainability and the necessity to increase awareness and enact change, but are not committed enough to voluntarily change their behaviour. The residence programs lack the engagement and fun needed to motivate students to change their habits.

Queen's University has not undertaken a comprehensive across-the-board environmental stewardship within both educational and operational areas; it is reminiscent of Moore's findings that institutional barriers are still impeding widespread and effective implementation of initiatives (Moore, 2005). The complexity of organizations and the environmental imperative thwart attempts to gain agreement and a comprehensive interdisciplinary plan. Queen's University is a multi-structured, complex organization without any single control from which the plans can be implemented. Numerous subcultures, time constraints, priorities, and experiences between the students, administration, and faculty hinder the organizational impact and momentum. Blake Anderson (2007) argues that Queen's University has become an assemblage of individual components that are only united because they share a common location. The institution's departments are disconnected and decentralized, and this has detrimentally affected the strength of coordinated sustainability efforts.

Some of the overpowering disincentives are inherently built into the institution's economy: subsidies and pricing do not distinguish between sustainable and destructive production methods. The institutional reluctance to change is partly due to a lack of knowledge about how greening initiatives can ultimately save costs. The long payback periods and general lack of incentives and information on environmental issues hinders the implementation of improved ecological infrastructure (Dahle & Neumayer, 2001). Sustainable change requires a significant amount of capital that deters implementation.

The success of greening initiatives is further hindered by a lack of awareness and commitment by the university community. Dahle and Neumayer (2001) argue that 'students must be aware of how their habits and choices on campus influences the institutions' own environmental 'footprint' before a change towards environmentally sustainable behaviour can be expected to take place' (p. 147).

Although staff and students at Queen's University declare their interest in on-campus environmental programs, many lack the will power and dedication to actively change conventional practices. The response to sustainability education programs in residences exhibited a prevalent culture of inaction: although students were keenly interested in the initiatives, they lacked the motivation to voluntarily modify their behaviour and become involved. Ultimately, the lack of knowledge, culture of inaction, and strong sense of tradition have hindered the sustainability movement's ability to implement widespread and effective change.

## **5.2 Framework for Visualizing and Achieving a Sustainable University**

Queen's University needs to implement comprehensive sustainability audits to monitor, analyze, and control the performance of programs. Given the growing drive

on campus to express sustainability elements in missions, plans and policies, van Weenen (2000) warns that it should not be assumed declarations of supporting sustainability will automatically result in better performance. An audit would measure financial operations as well as social and environmental performance (Velazquez et al., 2006). The University needs to develop a framework that assesses the critical conditions in determining the success of sustainability initiatives. Clark (2003) supports that sustainability organizers must ask a series of critical questions:

- What is the credibility, personality, and interest of the programs perceived by the greater campus community?
- Do the initiatives have the endorsement of key administrative leaders?
- Which departments are benefiting or threatened by the program?
- Is there sufficient publicity and support for new policies and initiatives?
- Is the process for critique of current programs and determining the next steps broadly participatory across the school community?

We need to question the dynamics of change by analyzing the interaction among transforming elements, the momentum of initiatives, and the collective commitment to the project.

Despite a growing awareness of sustainability, the movement on Queen's campus remains unorganized. There is still much room for environmental education to become integrated into the institution, and a ways to go before the environmental impacts resulting from their practices have been reduced to acceptable levels. The university must maintain and enhance existing education programs and resources, including key structures like the experimental residence sustainability initiatives coordinated in residences. They should continue to be supported and viewed as a vital component in the success of other sustainability initiatives on campus. The

residence programs provide an ideal opportunity to facilitate early contact with new residences through orientation week and don programs. Thus, further sustainability initiatives can build upon the groundwork laid in residences and find creative ways to enhance participation. The institution needs to provide contacts and training for involved members, as well as creating additional funding opportunities. By addressing and condensing what “sustainability” means on campus, the university can better coordinate sustainability programming and incentives to change.

The campus culture of inaction and unawareness must be replaced with one of dedicated commitment. Sustainability remains on the fringe of campus culture with little motivation to proactively incorporate it into institutional daily activities. The residence sustainability initiatives have struggled to conserve resources and enhance students’ understanding of and commitment to sustainability. The University should view this as an opportunity, not an obligation, to become an innovative green leader. It is a major place to build social culture, and should not be under-estimated as the ideal ground to educate, motivate, and support community sustainable action.

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