

VISION 2020: CREATING A SUSTAINABLE MCGILL

A SITUATIONAL ANALYSIS

McGill University

Spring 2012

Purpose: Describe McGill's sustainability initiatives and position them relative to peers and best practices.

Primary Audience: McGill community members interested in learning more about McGill's sustainability initiatives and performance, particularly as contrasted with other North American universities.



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EXECUTIVE SUMMARY

Vision 2020: Creating a Sustainable McGill is a yearlong consultation and planning process that builds on recent successes to set a sustainability strategy for—and from—the McGill community. The process has three phases, each of which is driven by a key question and yields a specific document as its primary deliverable:

- Phase 1: Situational Analysis
 - What is the McGill community currently doing around sustainability and how do these efforts compare to those of its peers and to best practices?
- Phase 2: Vision and Goals
 - Where do we want to be on sustainability in approximately 10 years?
- Phase 3: Action Plan
 - How do we get there?

The purpose of this Situational Analysis is to document McGill’s current sustainability initiatives and performance, situating those efforts relative to each other and within a broader context of peer institutions and best practices. It is intended to provoke questions and spark conversation. The information presented here will feed directly into the Vision & Goals and Action Plan phases to come.

What is McGill currently doing around sustainability?

The McGill community generally approaches sustainability as:

A future orientation: working together toward a shared vision for a better future in a manner that integrates social, economic, and environmental dimensions.

Within this conceptual framework, activities are categorized as they relate to three broad realms of the university: academics, operations, and culture.

Historically, much of the focus around sustainability at McGill, as elsewhere, has been on operations—reducing the environmental footprint of the university through initiatives such as energy efficiency, paper use reduction, and composting. There have also been notable efforts on the academic side to incorporate sustainability into both research and teaching, including the founding of the McGill School of Environment and the establishment of a joint BA & Sc major in Sustainability, Science and Society through the Department of Geography.

In recent years there has been an increasing focus on initiatives that nominally fall into the realm of “culture” but which serve to integrate the way the McGill community approaches sustainability. These include the adoption of a university-wide Sustainability Policy, the establishment of an Office of Sustainability with multiple staff positions, and the creation of an \$800,000 per year Sustainability Projects Fund (SPF) that is funded by student fees matched dollar-for-dollar by the McGill administration. Dozens of student groups have emerged on campus with mandates to bring about socially and environmentally beneficial change in the community. Also of particular interest is the emergence of applied student research (ASR) as an integrated model that blends experiential learning with a problem-solving approach, often focused on the university as a model system.

Conversations about sustainability initiatives within the McGill community often reveal a common story—progress has happened because of the personal commitment of a few individuals willing to work collaboratively across boundaries. There are, and have long been, pockets of dedication and activity in many places across the university community. But the other side of this generally positive story is that until recently many of these efforts took place in isolation, lacking a sense of connection, shared purpose and broader support.

One of the stated goals of the Sustainability Projects Fund—also reflected in other recent efforts—is building a culture of sustainability at McGill. It is out of this desire to integrate, institutionalize and scale up the sustainability efforts of the McGill community that the Vision 2020 process was born.

How does McGill compare to peers and best practices?

The briefest—and least illustrative—answer is “pretty well.” McGill earned a rating of mid-range silver in its recent AASHE STARS¹ assessment. In many respects it is holding its own relative to peer institutions, even those with substantially more per-capita resources. And yet McGill is not entirely a sustainability leader. There are a number of comparable North American institutions whose across-the-board sustainability performance is better than McGill’s and there are many that demonstrate leadership and innovation around particular elements of sustainability. The Benchmarking and Best Practices sections of this report highlight some of the institutions from which the McGill community can learn.

The homogenized “pretty well” answer hides a more complex story about McGill’s sustainability performance. There are areas where McGill is setting the bar for other institutions—the Sustainability Projects Fund is a model, as are initiatives around sustainable food systems and efforts to green the campuses—and there are areas where McGill lags substantially behind. Some of the lagging areas are easy to attribute to structural limitations—McGill’s historic infrastructure poses real challenges for energy efficiency and sustainable building, for instance. Yet there may be ways to creatively work around these challenges.

This report is not comprehensive. It is limited by the availability of data and, in some cases, even of definitions. It is a product of a particular moment in time and inevitably reflects both the current climate on campus and the way that sustainability is currently understood at McGill. In spite of its limitations, however, this situational analysis puts the McGill community in a position to have a richer, deeper, more informed dialogue about where to go in terms of sustainability and in what ways McGill can lead. It will be an interesting conversation.

¹ Association for the Advancement of Sustainability in Higher Education (AASHE) Sustainability Tracking, Assessment and Rating System (STARS)—currently the most widely used tool for assessing the sustainability performance of higher education institutions in North America.

1. BACKGROUND

1.1. PURPOSE

This situational analysis is intended to inform and energize the members of the McGill community involved in the upcoming vision and action planning phases of *Vision 2020: Creating a Sustainable McGill*, providing context for emerging ideas by describing some of McGill's past and present sustainability initiatives and those of some peer institutions.

Vision 2020 emerged from the recognition that lots of innovative sustainability projects were happening across the McGill community, but people were often working in isolation. This document will tell the stories of some of these projects, identifying opportunities for connection and growth. It will also identify some lessons learned and places where there is room to do better. It is an honest attempt to honour the past, understand the present and support the goal of *Vision 2020* to involve the entire community building a sustainability strategy for McGill.

Ultimately this situational analysis should do exactly as the name suggests—situate and analyse McGill's sustainability initiatives relative to each other and a broader context of sustainability in institutions of higher education. This will help participants in the *Vision 2020* process ensure that the vision, goals and action plan are simultaneously ambitious and realistic.

To help situate McGill's successes and failures, existing efforts have been divided into categories of Academics, Operations, and Culture. These categories provide grounds for internal comparison and comparison with peer universities. This report does not attempt to specifically document the experience of different stakeholder groups (students, academic staff, administrative staff), though the contributions of those stakeholders are visible within the various sections of the report.

Many of those now involved in sustainability initiatives on McGill's campuses will no longer be at McGill in the year 2020. With this in mind this situational analysis is also designed to serve as a reference for the next generation of

sustainability leaders at McGill, and for others interested in learning about McGill's sustainability efforts.

1.2. REPORT METHODOLOGY

Both quantitative and qualitative information was used in the preparation of this report. A list of institutions used for comparison is included in Appendix A. Four key activities make up the review and subsequent analysis:

- Review of McGill's existing literature, policies, reports, websites and data available online about McGill's sustainability initiatives and performance, including the Campus Sustainability Report Card (CSRC) and the Sustainability Tracking, Assessment, and Rating System (STARS).
- Interviews with McGill community members to provide information and context behind the data and information gathered in step 1. Interviews offered insight into performance and assessments, organizational dynamics, history, priorities and future endeavors.
- Collection and comparison of available data related to McGill's comparator institutions via online sustainability reporting and tracking programs (CSRC and STARS). This was done both for McGill's self-identified peer universities and for a separate group of recognized sustainability leaders.²
- Collection of relevant best practices from both McGill's comparator institutions and other North American institutions demonstrating sustainability leadership in particular areas³. These are presented for

² Two groups of comparator institutions were used: ones relative to which McGill routinely benchmarks itself on a variety of topics (and for which STARS and CSRC data are available), and a small group of additional institutions that achieved high overall marks in STARS and/or CSRC.

³ Best practices were drawn from a variety of higher education institutions and even from other sectors. Institutions highlighted as having best practices are not necessarily across-the-board leaders, nor particularly comparable with McGill, but rather those with innovative and relevant initiatives in particular areas of sustainability performance.

discussion, not necessarily as solutions that can or should be adopted at McGill in their current form.

This situational analysis was undertaken as a joint project of McGill's Office of Sustainability and Sustainability Solutions Group. Before being finalized, the document went through internal review via members of the Vision 2020 steering committee and other key stakeholders from within McGill's faculty, staff, administration, students and alumni. See Appendix B for a list of report contributors and reviewers.

2. SUSTAINABILITY

2.1. CONCEPT AND DEFINITIONS

To arrive at a robust definition of sustainability is outside the scope of this report and the Vision 2020 process. It is important, however, to clarify the way in which sustainability is generally conceived and talked about within the McGill community.

Among the many existing concepts of sustainability, the works of Orr and Nilsson resonate in the McGill community:

A sustainable future is one where "human intentions are recalibrated with the way the world works as a physical system" (Orr, 2004)⁴. The possible content of this future is endlessly diverse. The process of moving toward sustainability is where focus is required. Moving toward sustainability requires a process of engaging a community in shared experiences to transform "how our community encounters the world" (Nilsson, 2009)⁵.

⁴ Orr, D. (2004). "Can educational institutions learn?" in *Sustainability on campus: Stories and strategies for change* (ed. Peggy F. Bartlett and Geoffrey W. Chase). Cambridge: MIT Press, p. 174.

⁵ Nilsson, W.O. (2009) *Sustaining engagement in social purpose organizations: An institutional perspective on positive organizational practices*. (PhD dissertation. McGill University. Available on eScholarship@McGill, PID:86538)

As referenced in McGill's Sustainability Policy (2010), McGill takes sustainability to mean:

A future orientation: working together toward a shared vision for a better future in a manner that integrates social, economic, and environmental dimensions.

The language in this statement is intentionally broad and inclusive. While sustainability is integrated differently in different units and segments of the McGill community, an over-arching shared vision is needed as a common reference point. However, to be effective, this vision's scope must be compatible with more nuanced conceptualizations of sustainability found at more specialized levels and units. This will nurture cohesion (breadth) and rigor (depth) in how sustainability is pursued at McGill.

The scope of Vision 2020 is McGill University's realms of academics, operations, and culture, each of which is comprised of many parts and layers.

2.2. SUSTAINABILITY IN HIGHER EDUCATION

What Makes Sustainability in Higher Education Different?

The question here is not simply "how can universities be 'more sustainable'?" Rather, the movement to integrate sustainability into institutions of higher education asks more broadly "what does the world need in the coming generations that universities, as centres of research and learning, are particularly fit to provide society?"

In this broad context, the questions posed by the UNESCO's *Education for Sustainable Development* program are useful:

What if learning was about knowledge and also about doing, being, interacting with others and changing the world?

What if formal learning was enjoyable, hands-on and relevant to life outside school while addressing the problems of our world?

What if every person benefited from an education promoting [societal] development that is environmentally sound, socially equitable, culturally sensitive and economically just?

What if education systems prepared learners to enter the workforce as well as handle a crisis, be resilient, become responsible citizens, adapt to change, recognize and solve local problems with global roots, meet other cultures with respect, and create a peaceful and sustainable society?

What if every person benefited from genuine learning opportunities throughout life, in the workplace, and within the community?

*Then we would be educating for a more sustainable future.*⁶

UNESCO sees its program of *Education for Sustainable Development* as key to achieving other important international priorities, including meeting the Millennium Development Goals.

In addition to their role as knowledge *generators*, universities are also centres of knowledge *application* in their operation and administration. From dorms, cafeterias and modern medical research labs, to farms, gardens and boreal field work stations, the university is an unusually diverse multi-scale system of human-environment interactions, with material-energy flows connected to a large network of industrial supply-chains, ecosystems and landscapes. In light of this, the university can be taken as a “living laboratory”, a place where theory and practice are encouraged to mix and develop together, where universities adapt and respond to changing conditions, and where practical problems enhance the learning and leadership training experience of students

⁶ UNESCO. (2012). *Education for sustainable development*. Retrieved March 2012 from: <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/>

(Greenwood and Levin as cited in Denzin and Lincoln 2005, M’Gonigle and Starke, 2006; Creighton, 1998)⁷.

The topic of sustainability represents a great intellectual challenge for universities—a point of departure for advanced and specialized research, for interdisciplinary collaborations, and for myriad student projects. All disciplines, from chemistry, engineering and medicine, to management, political science and law, are called to rethink their core teachings, practices and research questions to address this omnipresent challenge.

Sustainability in Higher Education: Who, What and When?

This section provides a brief overview of important developments around sustainability in higher education in the past 20 years, with particular focus on events and organizations that relate directly to or provide context for McGill’s sustainability efforts.

⁷ Denzin, Norman K. and Lincoln, Yvonna S. (eds) *The Sage Handbook of Qualitative Research*. 3rd edition. Sage Publications Inc. 2005.

M’Gonigle, M., & Starke, J. (2006). *Planet U: Sustaining the world, reinventing the university*. Gabriola Island, BC: New Society Publishers.

Creighton, S. H. (1998). *Greening the ivory tower: Improving the environmental track record of universities, colleges, and other institutions*. Cambridge, MA: MIT Press.

Many leading academics have written extensively about the transformative opportunity which campus sustainability represents, including Profs. David Orr, Michael M’Gonigle, and Bill Rees, among others.

Table 1: Campus Sustainability Milestones: US and Canadian context (including relevant McGill information)

Date	Milestone
1990-1991	Talloires Declaration and Halifax Declaration (both signed by McGill)
1992	Earth Summit - Rio Conference on the Environment and Development.
1997-1998	Kyoto Protocol First Canadian sustainability policy and office established - University of British Columbia.
1998	Launching of the Sustainable Campuses Program– Sierra Youth Coalition.
2001-2002	McGill passes its Environment Policy
2002	Opening of Sustainable Concordia.
2003	Release of the Campus Sustainability Assessment Framework (CSAF) by the Sierra Youth Coalition, with 170 social and environmental indicators. First assessment of a university using CSAF – Concordia University
2004	Formation of the Conférence des recteurs et principaux des universités du Québec working group on environment and sustainability Opening of the University of Toronto Sustainability Office
2005-2006	Formation of the Association for the Advancement of Sustainability in Higher Education (AASHE), and first annual meeting (850 universities members).
2005	Launch of UN Decade of Education for Sustainable Development
2006	Quebec Sustainable Development Act mandating all ministries to initiate comprehensive sustainable development policies and action plans
2006-2008	Launch of American College & University Presidents' Climate Commitment. Climate Change Statement of Action for Canada (22 signatories—McGill not among them)
2007	Release of the first College Sustainability Report Card by the Sustainable Endowments Institute
2008	Montreal is recognized by the United Nations University as a Regional Center of Expertise for Education for Sustainable Development. Opening of the Queens University Sustainability Office.

2009-2010	Opening of the McGill Office of Sustainability, adoption of the McGill Sustainability Policy and creation of the McGill Sustainability Projects Fund. AASHE launches the Sustainability Tracking and Rating System (STARS) assessment tool.
2011	Creation of the International Sustainable Campus Network

In the 1990s, in preparation for and following the historic Earth-Summit in Rio, 1992, many university presidents and principals signed bold declarations and commitments to support sustainable development in higher education. This lofty and well-intentioned trend continued following the Kyoto protocol, particularly with regard to efforts to mitigate climate change. However, it took many years, sometimes decades, before universities began to make concrete steps towards their commitments. Mobilizing resources (staff, funds, expertise, monitoring systems, research projects, professional development, etc.) to meet these commitments has been an even slower process.

Since the late 1990s and early 2000s, and following sustained efforts by organizations like the Sierra Youth Coalition, student groups on many campuses started collecting data and creating partnerships with their universities to measure and help implement change in university research, teaching, operations and culture.

In response to these efforts, a number of universities, including McGill, helped create and fund Sustainability Offices to support, sustain and institutionalize ad-hoc initiatives, and ultimately to integrate sustainability into the long-term planning and day-to-day research, teaching, and management practices of the university.

ORGANIZATIONS AND PROFESSIONAL ASSOCIATIONS

A large range of organizations have formed in North America to support campus sustainability efforts. A few of those most relevant to McGill are:

Sierra Youth Coalition's Sustainable Campuses Project (1998)

Coordinated and supported student sustainability efforts at universities across Canada, including deployment of the Campus Sustainability Assessment Framework (CSAF), which included more than 170 performance-based indicators (2003); and the Sustainable Campus certification (2009), which is process- rather than indicator-focused.

Northeast Campus Sustainability Consortium (2004)

Represents more than 40 institutions of higher education from the northeast United States and Eastern Canadian provinces. Holds an annual campus sustainability gathering. Steering committee consists of representatives of universities from 9 states and 4 provinces. The 2010 conference was held at McGill.

Association for the Advancement of Sustainability in Higher Education (2005)

Largest and most active of the organizations in North America at this point. AASHE hosts an annual conference, meetings and webinars, has a widely-used campus rating system (STARS), and provides guidebooks and resources to its 850 member universities, including McGill. McGill played an active role in the development of the STARS system.

Disciplinary Associations Network for Sustainability (2006)

Informal network of professional associations working on curricula, standards and tenure requirements that reflect sustainability, sustainability-related professional development opportunities, and cross disciplinary projects on education for sustainability.

Members include the American Chemical Society, the American Societies for Civil and Mechanical Engineering, the American Philosophical Association, American Psychology Association, Association of Collegiate Schools of Architecture, and many others. Works under the US Partnership for Education for Sustainable Development.

3. MCGILL UNIVERSITY CONTEXT

3.1. ABOUT MCGILL UNIVERSITY

The purpose of this section is to highlight very briefly some of the things that “make McGill *McGill*.” Like any university, McGill has a distinct culture and narrative that shape the experience of McGill community members and also the way in which the community approaches questions around sustainability. This “McGill identity” flows from a complex mix of factors. Understanding what makes McGill tick provides context not only for past and present sustainability efforts, but for the types of organizational changes that are likely to succeed in the future.

Founded in 1821, McGill University is a publicly-funded research university in Quebec with an enrolment of approximately 38,000 students. Approximately 10,000 people are employed at McGill; 1,700 of them are tenure-track faculty members and many more are academic staff. The primary language of instruction and business at McGill is English. The university’s 22 faculties and schools are spread out over two campuses in the Montreal region, with research activities and stations extending worldwide.

McGill University is a research-intensive teaching institution with the mission of:

“... the advancement of learning through teaching, scholarship and service to society: by offering to outstanding undergraduate and graduate students the best education available; by carrying out scholarly activities judged to be excellent when measured against the highest international standards; and by providing service to society in those ways for which we are well-suited by virtue of our academic strengths.”

A quick browse of the McGill University website and promotional materials highlights several elements of McGill’s strategic positioning and institutional points of pride:

- **Excellence**—Consistently ranked as a top university in Canada and one of the top 20 worldwide, whose students and faculty are notable for their many achievements and awards.
- **Research-intensiveness**—\$470 million in research funding in FY 2010, a high publication impact rating, and cutting-edge research groups in numerous fields from medicine to music.
- **International reach**—McGill’s students come from approximately 150 countries and its alumni and research networks spread to even more. Half of McGill’s students speak a first language other than English.

As an anglophone university in a francophone province, within a complex, vibrant, multicultural, multilingual city, McGill is inseparable from its place. The role of McGill University in Montreal is broad and varied—it is affiliated with a comprehensive health-care network; is custodian to many culturally significant museums, concert halls and libraries; and is the steward of two of the largest green spaces in the greater Montreal region (the Morgan Arboretum and the Gault Nature Reserve).

McGill is also defined by the ways in which it bridges urban and natural spaces. The main campus lies in the heart of downtown Montreal, almost entirely within the Historic and Natural District of Mount Royal. McGill owns more than 100 buildings on its downtown campus, most constructed in the late nineteenth and early twentieth century.

In contrast, McGill’s Macdonald campus, home to the Faculty of Agricultural and Environmental Sciences, is located at the western tip of the Island of Montreal in Sainte Anne-de-Bellevue. The Macdonald campus is home to only 130 full-time faculty and 1,000 students, but consists of over 645 hectares, including a working farm, greenhouses, horticultural field research facilities and the Morgan Arboretum.

It is important to note that the *Vision 2020* process is unfolding at a time when there is significant dissent and unrest both within the McGill community and throughout Quebec society. Throughout 2011-12, relationships between members of the campus community have been strained by disagreement on issues including labour disputes, student referenda, tuition increases, and the meaning and appropriate boundaries of freedom of expression. Questions

around tuition and freedom of expression have also been a focus for the city of Montreal and all of Quebec. It would be impossible for *Vision 2020* to be separate from this context. Both the shape that the process takes and the outcomes that flow from it will undoubtedly reflect the recent experiences of the McGill community, though it is not yet clear exactly what their impact will be.

3.2. THE HISTORY OF SUSTAINABILITY AT MCGILL— LOOKING BACK TO MOVE FORWARD

This section seeks to provide insight into how and why sustainability initiatives at McGill have evolved to their current state. This is not a comprehensive account of history: it focuses on particularly important or innovative shifts in either the content or the dynamics of sustainability efforts at McGill.

One of the challenges of trying to capture the full range of social, economic and environmental dimensions of “sustainability” under the broad conceptual definition that guides *Vision 2020* is that not everyone self-identified with the term “sustainability” in the past, and some still do not. The challenge of being inclusive, while not laying claim where the sustainability label is unwelcome, is a difficulty both when chronicling the past and mapping the present.

Some of the examples presented in this section have been chosen to help illustrate the underlying character of sustainability activism at McGill, while others were included because they were considered particularly consequential for the campus as a whole. Inclusion in this quasi-historical analysis of sustainability initiatives at McGill does not mean that the projects or people were necessarily connected to each other or centrally supported. Many of them were, for better and worse, quite autonomous.

Table 2: Timeline of some sustainability milestones at McGill from the late 1990s to 2012

(A = Academics, O = Operations, C = Culture)

Date	Social	Environmental	Economic
Late 1990s		Energy efficiency projects introduced, paper recycling system launched (O)	
	QPIRG (C)		
			Social Context of Business MGMT course (A)
		Multi-stakeholder Environmental Policy Workgroup set up (O C)	
1999	Creation of the McGill University School of Environment (A C)		
	Creation of intercampus shuttle (A C)		
2000		Construction of EcoResidences at Macdonald campus (O C)	
2001		Environmental Policy approved by Senate, first annual ReThink Conference (O C)	
		Creation of Sub-committee on the Environment (O C)	
		ReThink McGill: annual gathering designed to engage and encourage the McGill University community to rethink its relation to the environment (O C)	
2002		Senate approves set of environmental principles and actions (O C)	
2003		First full-time staff member (Environmental Officer) hired to implement Environmental Policy (O C)	
Mid-2000s		Gorilla Composting (O C)	
	SEDE Office (C)		
	First Peoples' House (C)		
	Midnight Kitchen (O C)		
	SSMU Equity Policy and services (C)		
	Alternative frosh (C)		
	Queer McGill (C)		
	The Union for Gender Empowerment (C)		
	SACOMSS (C)		
Mid-2000s	Office for		

Date	Social	Environmental	Economic
(cont'd)	Students with Disabilities (O C)		
2003		Sustainable McGill Project (O C)	
2004		Greenhouse gas inventory (O)	
2005		Campus Sustainability Assessment Framework (A O C)	
2006		SSMU Environmental policy (C)	
2007		SSMU Green fee (O C)	
			Net Impact (A O C)
2008			Desautels sustainability conference (A O C)
		McGill Food Systems Project (A O C)	
2005		Paper Use Policy approved (O)	
2008		Director of Sustainability position created (O C)	
2009		Opening of the Office of Sustainability (O C)	
2009	Creation of the Sustainability Projects Fund (SPF) (A O C)		
2010	Sustainability Policy approved (A O C)		
2010	SPF funding begins and associated Administrator position filled (A O C)		
2010	Creation of the Sustainability, Science and Society BA & Sc Program (A C)		
2010		Energy Management Plan, 2010-2015 (O C)	
2012	Sustainability identified in both Achieving Strategic Academic Priorities (ASAP) 2012 and Strategic Research Plan (A O C)		
2012	Launch of Vision 2020: Creating a Sustainable McGill (A O C)		

A SHIFT BEGINS: LATE 1990S – 2007

The starting point for most sustainability initiatives at McGill has been a few committed individuals who encounter something that they want to change. They seek out others with similar yearning and drive, and create organizations, formal or informal, to help them make change more effectively. Since the late 1990's there has been a slow but significant shift in both the approach and form that these efforts take, as well as the content on which they have focused. This section will illustrate that shift and some of its consequences.

Table 3: Characteristics of past and present sustainability initiatives at McGill

Was...	Is now becoming...
Single-issue	Cross-discipline, cross-sector
Single-dimension (environmental OR social OR economic)	Somewhat integrated
Isolated	Increasingly networked, collaborative
Extracurricular/voluntary	Mixed, more institutionalized
Perceived and/or proposed as competing priority	Perceived and proposed as within core mission

In the early phases of sustainability activity at McGill, most people encountered sustainability via a narrow approach to a single issue (e.g. recycling is important) or broad demands for an ambiguous goal (e.g. stop globalization). This made it difficult for members of the community and units within the university to see how these sustainability issues related to their roles and responsibilities, and made it easy to assume that someone else was or should be dealing with them. This helps explain why most early efforts were driven by a relatively isolated and small pocket of stakeholders, largely on a voluntary or extra-curricular basis.

In the late 1990s several key developments occurred at McGill which set the stage for the ongoing transition away from this early model to one that is more integrated and institutionalized.

Creation of McGill School of Environment (1999)

This was an ambitious, innovative and a significant development for McGill. In the thirteen years since its establishment the McGill School of Environment (MSE) has grown dramatically. It currently has 19 appointed faculty members and two faculty lecturers, representing five separate faculties. The MSE has had steadily increasing enrolment and between its founding and 2001 graduated 912 students.

The creation of the MSE was driven by desire from students, faculty and the administration. While each of these groups had somewhat different motivations, they shared a desire to build a program that would transcend a disciplinary approach to more adequately address the complexity of real-world problems.

As might be expected, the development of the MSE was not straightforward—there were concerns about academic rigour and freedom, disciplinary disagreements and inter-campus tensions. Ultimately, however, the process overcame barriers and succeeded in (1) increasing visibility of environmental problems in the academic community, (2) increasing access to sustainability content in curriculum (3) creating innovative forms and approaches (interdisciplinary collaboration and accreditation, cross-faculty joint appointments, capstone community/service-learning project), and (4) building connection between the downtown and Macdonald campuses (not just programs, but even led to the establishment of the inter-campus shuttle).

Student actions and policy changes (early 2000s)

In the late 1990s, years of growing grassroots activism around environmental issues culminated in student demonstrations and a banner being flown from the Leacock Building to demand a McGill environmental policy. In response to these events, a multi-stakeholder Environmental Policy Workgroup was set up and an Environmental Policy was adopted by McGill's Board of Governors in 2002, including a statement of aspirations and a commitment by the administration to create McGill's first full-time position dedicated to environmental issues at McGill. The primary focus of the policy was the environmental dimension of sustainability, and according to some, made

insufficient provision for the engagement of the community, implementation of policy recommendations or future assessment of progress outside of occasional reports to Senate.

In response, the Sub-Committee for the Environment (SCE) provided funding for a student position to lead a research group, “the Sustainable McGill Project (SMP)” to complete the Campus Sustainability Assessment Framework (CSAF) for the McGill campus⁸, and the ecosystem section of this assessment was completed in 2004-5. The assessment was intended by the authors to serve as a partial baseline for a cyclical process of assessment, recommendation and implementation of environmentally sustainable practices at McGill. This was a major shift from traditional student roles and approaches to change. Although the assessment was overseen by and presented to members of the SCE, limited financial and political capital limited the implementation of their findings.

Despite the progress evidenced by the Environmental Policy, a full-time position, an annual conference and a multi-stakeholder committee, campus-wide environmental efforts still lacked cohesion. With this in mind, the SMP created a taskforce in 2005 to investigate and discuss the creation of a central, easy to access hub to support, gather and implement student research findings as well as broader policy recommendations⁹. Partnering with a final year MSE course, the group researched a number of potential models from other universities. In 2006, they began to synthesize the results of their research and community consultations into a formal proposal for a “sustainability centre” focused on consolidating student and administrative efforts to implement sustainability practices on campus through accredited action-learning.

The message that emerged from these developments in the early 2000s was that there was a need to create an institutional home for sustainability efforts within the University—one that would be welcoming to students and would

⁸ Sustainable McGill Project (2006). Trees, toilets, and travel: Ecosystem sustainability assessment of McGill University. Unpublished.

⁹ (SMP – 08).

serve as a hub for connecting and catalysing grassroots initiatives. After years of dialogue and compromise, the McGill Office of Sustainability was committed to as a joint initiative between students and the administration in 2008, and during this same timeframe, a Director of Sustainability was hired to focus on sustainability particularly as related to university operations. The Office of Sustainability, housed within the University Services unit, was formally opened in February 2009.

THE SHIFT AND BEYOND: 2008 - 2012

In the past several years sustainability has gained traction as a concept and priority—both within and beyond the McGill community. Along with this shift has come an expectation that the university, as an institution, should take a leading role in advancing sustainability. Whereas in the past questions around sustainability were seen as sideline issues, sometimes in conflict with the bottom line or core mission of the university, they are now increasingly seen as integral to its functions.

People began to ask “what is the most effective role a *university* can play in the issues I care about most?” and to recognize the unique value of universities as microcosms for building and testing a more integrated, learning-centred approach to the complex social and environmental problems the world faces.

Recognizing that recent successes were the result of improved individual relations, sustainability leaders at McGill began to talk about how to scale up the model that had worked for them, distributing the leadership and removing structural and relational barriers to progress. What they were asking was “How could we create a culture of sustainability at McGill?”

One particular tool for building this culture of sustainability, discussed in greater detail in the curriculum section (4.1.4), is applied student research (ASR). By engaging students in improving the functioning of the university, ASR is a mechanism to deepen and broaden their learning experience, while contributing to gaps in institutional capacity—using the university as a living model for implementing positive change. ASR confounds the traditional

narrative of sacrifice for the environment—benefits radiate outward in many directions.

Below are a few examples of developments that demonstrate the maturing narrative around “building a culture of sustainability”—and some of its pitfalls.

Integrating the social dimension (2008-2012)

Up through the mid-2000s much of the discussion around sustainability still focused on the environment. Though the McGill community was active on issues of social justice, that activity was mostly separate from the conversations around sustainability.

As a large, urban research-intensive university, McGill has a greater challenge than some peer institutions in creating a supportive and connected undergraduate experience, as evidenced by below average scores in the National Survey of Student Engagement (NSSE) in categories such as academic advising, faculty interaction and class participation.

An analysis of McGill’s social dynamics must also acknowledge its position as an elite, primarily anglophone institution. Though McGill participates in many strong and innovative partnerships and collaborations within Montreal and throughout Quebec, its reputation remains associated with isolation and privilege.

These conditions are related to broader social justice concerns such as diversity, equity, reducing marginalization and increasing accessibility, both in the 1) demographics of the university students, staff, faculty; and, 2) the role of the university in addressing these issues in the larger community.

As with the environmental elements of sustainability, McGill’s activity on issues of social justice began at the grassroots, with action by small committed groups of students, faculty and staff, often operating in isolation and without strong institutional support. In parallel with the increasing integration and centralization around sustainability, the last several years have seen increasing institutional commitment from McGill to addressing questions related to access, equity and diversity. This has included the establishment of a

Principal’s Task Force on Diversity, Excellence and Community Engagement; Senate committees (on Women, Race and Equity Relations, etc.); the hiring of a social justice advocate as the Executive Director of Services for Students; and addition of staff in the Social Equity and Diversity Education Office. In a recent strategic plan for Student Services, sustainability was identified as both a gap and a core principle going forward.

Supporting the culture of sustainability (2009-2010)

Any analysis of sustainability action at McGill would highlight a cluster of activity in 2009-2010—including the gearing up of the Office of Sustainability, the adoption of the Sustainability Policy, the creation of the Sustainability Projects Fund and the hiring of an administrator to oversee it. These steps forward were the result of years of dialogue, give-and-take, and ultimately, collaboration. All represented a fundamental recognition of the need to institutionalize sustainability in a way that is both deep and broad. Each, in its way, seeks to disrupt deeply embedded institutional patterns and create healthier ones in their place.

The Sustainability Projects Fund, in particular, seeks to foster unlikely connections and catalyse individuals to go beyond their traditional roles. The SPF’s money, coordination, process and vision all serve as catalysts of sustained capacity for and more outcomes of (1) trust and dialogue (2) deep collaboration and support (3) scaling up (4) retaining/sharing institutional memory (5) experiencing our aspirations for the future in the present.

Key to the success of these projects has been a discovery-based perspective (“how can this create a culture of sustainability?”), such that few predetermined judgments about the specific forms this ‘culture of sustainability’ should take were made. This created space for the continuation of the ‘conversation’ and any re-visioning that was required to reconcile and build from the divergent ideas, beliefs and experiences that surfaced.

LESSONS LOOKING FORWARD

The shift highlighted here is neither complete nor universal. There are still many isolated sustainability projects struggling to gain traction across McGill's campuses and sustainability is still perceived by many across the McGill community to be a sideline issue. The work of building a culture of sustainability has just begun.

When looking back at initiatives that have succeeded it is easy to attribute their success to some magical combination of factors—the right people, the right resources, the right moment. While there is some truth to this, there are also many controllable characteristics that separate projects that succeed from those that stall.

Some factors that have enabled progress

- Leadership by well-known individuals whose identities bridge divides and who are willing to actively build collaborations and cross boundaries.
- Building partnerships with professors and integrating sustainability projects into research and curriculum.
- Willingness of stakeholders to compromise on different time horizons and organizational forms, while finding commonality in values, purposes and interests.
- Focus on improving of individual relations, building of trust and legitimacy as prerequisite to larger scale change.
- Openness to change—ongoing evaluation against original goal or intention, and iterative cycles of adaptation. Seeking to sustain the question, rather than a specific answer to the question.
- Fun—maintaining strong team dynamics, creating space for friendships to flourish, nurturing learning, and celebrating success.

Some factors that have hindered progress

- Form trap—losing sight of the original goal while working to sustain and perpetuate a particular tool or “form” (process, committee,

event, service, brochure, technology, etc.) that was designed to serve that original goal.

- False absolutism—a ripple effect from the form trap, when people see a lot of activity and assume an issue is being taken care of, without stopping to evaluate whether the activity is actually making progress toward a goal.
- Lack of clarity about ownership—often occurs when multiple groups get involved in trying to rescue a foundering initiative or scale up a growing one. This can have lasting negative impacts on relationships.
- Rigidity trap – organizational, financial, and regulatory structures that discourage institutional innovation and long-term integrated planning, ex. the divide between research, capital and operating budgets.
- Unwillingness to transcend role/need to defend “turf” of particular units, issues (“silos”)
- Misreading of institutional dynamics and the strength of emotional reactions.
- Focus on cost as justification for not taking action. Can be a showstopper, especially as current accounting systems do to internalize externalities (ex. life cycle costing).
- Tunnel vision - Focus on predetermined solution rather than evolving question.

This section has documented some of the sustainability-related experiences of the McGill community to date, and has chronicled the emergence of the narrative of “building a culture of sustainability.” It is vital, when planning for change, to consult and reflect on both the present and the past, but it is equally vital to rise above the constraints of what is currently possible.

As the *Vision 2020* process moves forward, an understanding of the history and context of sustainability efforts in the McGill community should help to frame a vision, goals and action plan that are realistic, but also ambitious, broadening and deepening the culture of sustainability while creating capacity for ongoing innovation.

Lessons Learned: Downtown campus pedestrian zone (2010)

This is an example of an initiative that was working to advance a sustainability goal—create a more pedestrian-centred campus—but which bumped up against some unanticipated obstacles. On one hand, the overall pedestrianization plan for the downtown campus was visionary, progressive and undertaken as part of a broad community partnership with the city of Montreal. A new bike path around campus was created, parking removed, and an entire city street turned pedestrian. On the other hand, the on-campus “walk-bike” policy or “bike ban”—as it remains known on campus, to the chagrin of project leaders—was contentious and left a lasting sour impression for many users. In spite of a consultation process and the approval of a plan in 2007, cyclists felt there was insufficient dialogue, an overestimation of the dangers of cycling and an underestimation of the possible effects of mitigating strategies.

An important factor in this case—and for all campus sustainability efforts—is that much of the decision-making and communication happened before McGill’s current students were on campus. The transient nature of the student population has positive (ability to quickly institutionalize changes as “the way things work at McGill”) and negative (need to continuously re-explain and re-justify decisions) implications for sustainability initiatives.

4. MCGILL'S SUSTAINABILITY INITIATIVES IN CONTEXT

4.1. ACADEMICS

4.1.1 INTRODUCTION

McGill University's primary mandate is to be a research-intensive teaching institution. It is important, therefore, for a consideration of McGill's sustainability efforts to begin with those two topics—research and teaching.

The sections that follow are in no way comprehensive. In fact, they are less complete and more preliminary than most other sections of this report. This reflects a number of factors—the sheer volume of research and teaching going on throughout the University, the decentralized nature of these activities, and the difficulty in defining what sustainability means in this context. It is also a result of the fact that the conversations around sustainability in research and teaching are at an earlier stage at McGill than those around topics such as sustainability in operations.

There is clearly room for the McGill community to grapple with questions around sustainability in research and teaching, both in order to document the efforts currently underway on the campuses and to identify how the community wants to approach these topics going forward.

With that in mind, the goal of these sections of the situational analysis is to fuel and frame those conversations. They are based on examples from both expected and unexpected places across the University, and for every example included here, there are many more that are not listed—these sections aim only to illustrate the scope and diversity of approaches to sustainability in the realms of research and teaching. These sections also propose a framework and some preliminary definitions for thinking about sustainability in the context of research and teaching at McGill.

Because research and teaching are often so closely integrated, best practices from other institutions are presented in a single table at the end of this section, rather than divided between research and teaching.

4.1.2 RESEARCH AND TEACHING IN THE DISCUSSION OF SUSTAINABILITY IN HIGHER EDUCATION

As early as 1990, David Orr, distinguished professor of Environmental Studies and Politics at Oberlin College in Ohio, was causing a stir in the North American higher education community by asking “What is education for?” then arguing that there were several underlying problems with modern Western education and proposing new guiding principles¹⁰.

Institutions of higher education have played a major role in illuminating the nature of sustainability challenges past, present, and predicted. The question posed by Orr, framed slightly differently by McGill professor Peter Brown, would look something like “are institutions of higher learning in the right relationship with these identified sustainability challenges?”¹¹ McGill University's mission explicitly includes “providing service to society in those ways for which we are well-suited by virtue of our academic strengths.” Sustainability is only one of many lenses through which this element of the mission can be viewed, but it is helpful to keep these fundamental questions about the purpose of higher education in mind when considering sustainability in the realms of research and teaching.

¹⁰ Michael Shriberg, (2002) "Institutional assessment tools for sustainability in higher education: Strengths, weaknesses, and implications for practice and theory", *International Journal of Sustainability in Higher Education*, Vol. 3 Iss: 3, pp.254 – 270.

¹¹ Not a quote from Peter Brown, but adapted from his book co-written with Geoffrey Garver, *Right Relationship* (2009).

4.1.3 RESEARCH

Definition

McGill University does not have an official definition for “sustainability research” or “sustainability in research,” as some other universities do.¹²

The breadth of research at McGill means that developing one definition that applies with adequate depth to all focus areas is very difficult, and trying to create such a definition without allowing some degrees of freedom would be quixotic. With that in mind, the definitions presented here are working ones, meant to spark discussion and reflection. They are congruent with the way that *Vision 2020* has conceived of sustainability (Section 2.1), the way it is defined in McGill’s Sustainability Policy, and the way sustainability has been discussed in McGill’s academic community in the past.

This section explores both the content of what is researched (sustainability-focused research) and how it is researched (sustainability in how research is conducted).

Sustainability-focused research

In recognition that sustainability encompasses the integration of environmental, social and economic dimensions, a research program can be considered to be sustainability-focused if it is directed toward one or more of the three pillar areas of sustainability and is shaped or evaluated in light of the remaining pillar areas.

Sustainability in how research is conducted

The conduct of research can be considered sustainable based on the degree to which it is performed using methods that are sensitive to issues of

sustainability, such that the act of performing the research actively allows for the operationalization of sustainability.

Sustainability-focused research

Sustainability can be operationalized in research in a variety of ways. It may be the explicit and primary focus of a research group or centre, or it may be a cross-cutting value that underlies research taking place on a topic whose relationship to sustainability is not immediately obvious. (See Appendix D for a discussion of sustainability as a value vs a focus in research.) This makes it problematic to try to categorize exactly how much sustainability research is going on at a university or where it is occurring. Information reported through frameworks like AASHE STARS and the College Sustainability Report Card is difficult to interpret because they are based largely on self-reporting and the way staff members at each institution choose to identify sustainability research.

The range of ways that research can focus on sustainability is most easily illustrated through examples. The following is a small subset of the sustainability-focused work currently going on across McGill’s campuses, chosen to show some of the expected and unexpected places it can be found. As mentioned earlier, a more comprehensive inventory of the sustainability-focused research taking place at McGill is beyond the scope of this report but would be a useful project to undertake going forward.

Faculty of Agricultural and Environmental Science: Research in this faculty, on the Macdonald campus, focuses from many angles on questions related to the interaction of humans with the environment and the understanding of environmental systems. These areas of research have direct, visible links to sustainability. Different disciplines within the Faculty approach these questions from different perspectives and there is considerable research happening that confronts contemporary sustainability issues.

School of Urban Planning: The field of urban planning has historically grappled with questions of sustainability and there is research in this school that has very apparent ties to sustainability. It directly addresses issues regarding the welfare of people, control of the use of land, transportation and

¹² Some examples of institutions with definitions of sustainability in research, as reported in <https://stars.aashe.org/institutions>: University of Alberta, UBC, Oberlin College, University of Oregon. Definitions can be found on this website.

communication networks, and protection and enhancement of the non-human environment. By name and by mandate, this is a school that is easily recognized as having research tied to sustainability.

Department of Geography: This unit studies physical environments and human habitats and plays a key role in sustainability research. Six research themes have been identified in the department: Earth System Science; Land Surface Processes; Environment and Human Development; Geographic Information Systems (GIS) and Remote Sensing; Environmental Management; and Political, Urban, Economic, and Health Geography. A number of the professors in this department are also McGill School of Environment Appointed Faculty.

Centre for Green Chemistry and Catalysis: There are several researchers working in the area of “green chemistry” in the Departments of Chemistry, Chemical Engineering and Pharmacology. Chemistry may not be viewed immediately by some as being a hub of sustainability research, but this group at McGill has been making a name for itself in this area in recent years. By looking through the lens of chemical reactions and processes, considerable advances towards more sustainable behaviours are being made through this field.

Marcel Desautels Institute for Integrated Management: Neither the name nor the website for this institute provide much indication that it is a hub for sustainability research. However, integrated management confronts the tensions of different perspectives on value in order to reconcile economic value with other values, including sustainability. The research conducted here takes a systems approach to understanding a complex world, emphasizing adaptive management and consideration of the social and environmental implications of management processes.

Institute for Sustainable Engineering and Design: This institute identifies itself with sustainability, and has a mandate to bring a sustainability perspective to engineering and design.

Quebec Centre for Biodiversity Science (QCBS): This centre is inter- and trans-disciplinary, and inter-university. It brings together researchers with different

interests and specialities to study biodiversity. The QCBS has a mandate to contribute to the academic and public debate on biodiversity loss, an issue with obvious connections to sustainability.

Brace Centre for Water Resources Management: Researchers at the Brace Centre primarily identify water management as the central problem to build research around. Water management is of growing importance worldwide, and relevant to the sustainability conversation. It is a cross-cutting issue and pertinent to many fields of study.

Centre for Indigenous Peoples’ Nutrition and Environment: Focusing on a variety of issues around the nutrition and environment of indigenous peoples’ around the world, CINE’s research tackles social and economic problems, often taking into consideration economic factors and limitations.

Sustainability in how research is conducted

Researchers at McGill conduct their investigations in a huge variety of ways and at a huge variety of scales in many places around the world. The sustainability implications of their research activity have not been studied in depth. These implications are numerous and varied, ranging from greenhouse gas emissions to waste products to the impacts of research dollars in local and global economic systems. Obviously, questions around the sustainability implications of particular research programs are complex and thorny—how does one define and measure both the negative and positive impacts of a research project? What interactions are there between the focus of what is being researched and how it is being undertaken? Do considerations related to sustainability of the research process have a place in the selection of research questions, or only in determining the methods for addressing questions that have been selected?

There is currently increasing interest by academics from across McGill in looking at the research enterprise and ways to make it more sustainable. One notable project is the Green Biobanking Project sponsored by the Research Office of the Faculty of Medicine and the Sustainability Projects Fund. This project promotes ambient temperature storage of biological samples

whenever appropriate, and is designed as a way to start conversations with primary investigators on the topic of sustainability in research.

Another initiative of note is the requirement that new vehicle purchases, including those for research purposes, undergo a sustainability review by the Office of Sustainability to ensure that the proposed vehicles fit the need and do not have unnecessary negative environmental impacts.

4.1.4 TEACHING

As with research, teaching consists of both a “what” and a “how.” The “what” is curriculum content—material that is presented to students. The “how” is pedagogy—methods used to present the content. In the discussion of sustainability in higher education there has been a tendency to use the term “curriculum” generally to refer to both, though with the exception of focus on experiential learning, there has traditionally been more emphasis on content than on pedagogy.

This section does not include a discussion of sustainability implications of teaching operations (eg. paper use, or equity concerns in the classroom) as those are covered in the Operations (4.2) and Culture (4.3) sections of this document.

Definition

Again, as with research, McGill has no set definition of sustainability in teaching. The following working definition is provided to frame this section, and as fodder for discussion. It is synchronous with the *Vision 2020* concept of sustainability, McGill’s Sustainability Policy, and the way sustainability has been discussed in the past within McGill’s academic community. Note that this definition does not differentiate between content and pedagogy.

Sustainability in teaching

In recognition that sustainability encompasses the integration of environmental, social and economic dimensions, a course or teaching activity can be considered to be sustainability-focused if it is directed toward one or

more of the three pillar areas of sustainability and the learning outcomes and/or delivery of course concepts are shaped or evaluated in light of the remaining pillar areas.

Curriculum content: what is taught

There are a few pockets throughout McGill that have self-identified as having sustainability curriculum and many more places where issues related to sustainability are included in course content without anyone naming them as sustainability.

Similar to the situation with research, neither a listing of self-identifiers nor a keyword search through course descriptions will give a complete picture of what the state of sustainability in curriculum is.

One interesting reference point approaches the question from a different angle—rather than trying to categorize all courses as sustainable or not, it asks students about their perception and experience. This 2010 in-person survey asked approximately 400 undergraduate students at McGill from nearly all faculties for their opinions on how satisfied they were with the understanding of sustainability they were acquiring while completing their degree requirements (1-strongly disagree to 5-strongly agree).¹³

Table 4. Undergraduate student responses to in-person survey (2010)

Statement	Mean	Std dev
1. As a future McGill graduate, having an understanding of sustainability is something I would value.	4.21	0.839
2. Upon fulfilling my program requirements (not electives), I believe I will be satisfied with the understanding of sustainability I have developed.	3.25	1.017
3. I would be willing to have a required course in my program directly addressing relevant	3.36	1.309

¹³ Gray-Donald, D. (2011). *Student valuation of sustainability in curriculum*. Unpublished. Students were approached in 7 dining facilities around campus and given a paper survey. (Independent study—contact david@gray-donald.ca for a copy.)

Statement	Mean	Std dev
sustainability issues.		
4. I would like to have sustainability issues taught more in my existing courses.	3.42	1.054
5. I understand how sustainability is linked to my discipline.	3.57	1.229

Below are a few examples of ways that sustainability is addressed through curriculum content at McGill. Again, they are in no way comprehensive and are chosen to illustrate some of the ways that sustainability can be addressed through curriculum.

McGill School of Environment (MSE): The McGill School of Environment was designed, after much spirited discussion and consultation, to act as a hub to address the problems facing human society in its relation to the environment. By bringing together teachers and researchers from different areas of specialization (different departments, schools and faculties), the MSE acts as a place for multi and inter-disciplinary research and teaching to build and disseminate understanding of environmental problems and their solutions. Teaching in the MSE began at the undergraduate level and became very popular in the student body so that undergraduate programs in Environment have grown noticeably since their inception. The MSE also operates a graduate option in Environment with almost 20 partner units. The MSE programs include a lot of curriculum on environmental problems, and also the inter-relation of environmental problems with social and economic issues. The pedagogy of the MSE is varied, with several lecture-style classes and a few research-focused courses, most notably the final year research project, ENVR 401, focusing on a real-world environmental problem and working with a client and supervisor to address it.

Sustainability, Society and Science, Geography (SSS): This program focuses primarily and explicitly on sustainability and demands that students be adept in the arts and in the sciences by only being open to students pursuing a B.A. & Sc. By focusing on environment, geography, management, and numerous options in other departments, the program aims to foster critical thinking on sustainability and broad understanding of pertinent issues. Begun in 2010, the

program is in its early stages and is seeing growing interest from the student body.

Economics: This is an example of a faculty that does not have sustainability as its primary purpose, but does have several sub-areas with work strikingly relevant to the issue. Ecological economics courses invite students to grapple with issues such as the conflict between economic growth and the laws of thermodynamics. The Environmental Economics Specialization presents content that integrates environmental sciences and decision-making with the economics of the environment.

School of Social Work: Students in programs through this school have to grapple with fundamental problems in our society. There is a focus on vulnerable and disadvantaged groups, and maintaining strong ties with the community. Without addressing fundamental social issues, and maintaining strong communities it is very difficult to bring environmental problems to the fore.

Pedagogy: how it is taught

Effective pedagogy can help students better learn about and understand sustainability. There are two classic ways to do this:

Examples: when teaching nearly any subject, the instructor may use examples that help develop understanding of the core content while simultaneously connecting the content to contemporary problems to be grappled with in moving towards a more sustainable future. This might take the form of a statistics instructor taking a class through a standard deviation calculation exercise looking at how different demographics perceive the existence of climate change. In a financial accounting context an example might be explaining how debits and credits can be manipulated by showing how it was done at Enron in the 1990s, with quick reference to the socio-economic disruption that caused. The example technique can take many forms and its use is up to the discretion of the instructor. The extent to which sustainability-related examples are used in teaching at McGill is not known.

Experiential learning: This technique, particularly as embodied in service learning is available in many programs at McGill at undergraduate and graduate levels. Mechanisms to engage students in experiential learning are program-specific, often ad-hoc, but sometimes more institutionalized as is the case with ENVR 401 which is a mandatory course for Environment majors. A study on this subject, especially as related to sustainability, was undertaken by an ENVR 401 research team in Fall 2011¹⁴.

Throughout the McGill community, a model of experiential learning that is gaining popularity and momentum is applied student research (ASR). This model lets students learn by trying their hand at solving real-world problems. Through this model, student learning interacts directly with McGill's research agenda, its operations, and the broader community both within and beyond its campuses. The table below highlights a few recent and relevant ASR projects.

¹⁴ Supervised by George McCourt. Please email max.luke@mail.mcgill.ca or dgray-donald@ssmu.mcgill.ca or george.mccourt@mcgill.ca for a copy of the final report.

Table 5: Characteristics of selected applied student research (ASR) projects

Example	Sustainability focused?	Applied?	On or off campus?	Ad hoc vs designed for continuity?
ENVR 401: Environmental Research Project	Typically sustainability focused: This project-based course has students grappling with complex sustainability problems.	Variable: Often applied, but sometimes more theoretical and not put into use in a particular setting.	Mostly off-campus: The majority focus on off-campus problems, though there tend to be some each year that focus on an on-campus issue.	Variable: Projects may either be looking at a problem one time, or may be part of a series of projects that build off of one another to look at a central problem.
GEOG 302: Environmental Management I	Variable: Some sections of the course have had a group project very similar in spirit to ENVR 401, but smaller in scope. Students choose their own project topics.	Variable: Some groups may have time and drive to engage in service learning, others are more theoretical in their approach.	Roughly half-and-half.	Variable, but tending towards ad-hoc. Projects are selected by students and many have been designed around both existing community initiatives and student interests.
Independent studies (eg. Sexual Assault Policy at McGill, History of Neo-liberalism at McGill, Valuation of sustainability in undergraduate curriculum, What would a culture of sustainability look like?, etc.)	Variable: Some are, such as “A Valuation of Sustainability in Undergraduate Curriculum”, and some might be, such as “History of Neo-Liberalism at McGill”	Variable: Many are theoretical, some are very applied.	Variable.	Variable. Some are part of a larger coordinated effort, such as the McGill Food Systems Project, while many are of personal interest to the student and may not be followed up on at McGill.
Community-University Research Exchange (organized by the Public Interest Research Groups at McGill and Concordia, with participation from faculty and students from both campuses, community organizations and individuals)	Often sustainability-focused.	Usually applied, especially to vulnerable and disadvantaged groups in the Montreal community	Usually off-campus.	Often strategically directed as part of existing community efforts, but not exclusively.
Social Context of Business (MGCR 360, required course for all BCom students in Desautels Faculty of Management)	Sometimes sustainability-focused, depending on the instructor and the problem the students seek to address.	Sometimes applied, often not enough time to get to that stage.	Variable. Section-specific.	Often ad-hoc, and not strategically feeding into existing efforts.
School of Urban Planning student research projects	Sometimes sustainability focused, e.g. “Making the Edible Campus” research projects	Often applied.	Variable, tendency to not be focused on campus.	Variable.
Events such as the Sustainability Research Symposium, and 3 Minutes to Change the World	Variable. There are several events on campus that are sustainability focused.	Variable. Focused on research in general, so are a blend of theoretical and applied.	Mostly off-campus. Some examples of on-campus research are presented.	Variable depending on content presented.
McGill Food Systems Project	Sustainability focused.	Applied, with the intention that it will precipitate change in the food system.	On-campus, though looking at connections to the off-campus world.	Strategic. Has a robust mandate, a coordinator, and research projects that build on one another to affect further change towards a more sustainable food system.

INFORMAL CURRICULUM

In addition to the teaching that takes place within classrooms and laboratories, members of the McGill community are exposed to a great deal of “informal curriculum” that shapes their learning and experiences of McGill. This informal curriculum includes components such as signage around campus including advertisements, talks by visiting professors, student-invited speakers, student-run workshops, SSMU Mini-Courses, student groups and their activities, campus newspapers, McGill-related websites, and more. It is everything that is experienced as a community member and it contributes to shaping the norms and opinions and world-views and behaviours and understandings of community members.

This informal curriculum is central to the experience of McGill community members and provides sustainability learning opportunities. The barrage of information, including mixed messages, may be difficult to digest, however, and may turn people away from sustainability. Preachiness, greenwashing and misleading use of statistics can all be problematic here.

News outlets on campus

There are a handful of news outlets in the campus community, with the three major players historically being the two papers of the independent Daily Publications Society, The McGill Daily and Le Delit, the McGill Tribune which is also student run and independent, and the McGill Reporter which is operated through the Media Relations Office of McGill University. Recently, there have been a number of independent electronic news outlets, some, like the Prince Arthur Herald, using more traditional news reporting formats, and a number of others using a more blog-style approach to publish research and reporting on current events in the community.

Nearly all these news outlets do take on research in the form of investigative journalism. The extent to which they are sustainability-focused or build a culture of sustainability at McGill is unknown.

Student government research

Student governments, especially SSMU and PGSS, have budgets to initiate non-academic student research projects. These are often created in an effort to investigate an area of interest to students that has not been looked at as carefully as some of them had wanted. A relevant example to sustainability research and curriculum is research for SSMU put together over the summers of 2008 and 2009, entitled “University united: A review of the applied student research model and its value for McGill”.¹

Non-government student-organization research (clubs, services, independent student groups, loosely affiliated groups)

Several student organizations have put together research outside the realms of academia or student government. The first Canadian Sustainability Assessment Framework (CSAF) assessment of McGill University was undertaken by students of the now-defunct Sustainable McGill Project from 2004-2006. Working groups of QPIRG McGill also put together research, largely focusing on marginalized groups in society.

BEST PRACTICES IN RESEARCH AND TEACHING

The following table highlights some institutions that may serve as useful models to McGill in integrating sustainability into research and teaching. They are not included here to be held up as paragons—all have faced challenges with varying degrees of success, and not all are directly comparable with McGill’s resources and circumstances. They can, however, provide insight and inspiration as examples from which to learn.

Table 6: Institutions demonstrating leadership and innovation in one or more aspects of sustainability in research and teaching.

Institution	What to look at
Arizona State University	Transdisciplinary approach, breaking down of silos.
Colorado State University	Aim to graduate 100% of undergraduates with introductory understanding of sustainability.
Concordia University	Sustainability as cross-cutting component of research and teaching.
Dalhousie University	College of Sustainability as hub for sustainability research and a place for teaching about sustainability.
Harvard University	Excellence in research and teaching with growing emphasis on sustainability.
Lakehead University	Faculty of Science and Environmental Studies as a model of cross-cutting teaching programs.
Massachusetts Institute of Technology	Reputation for high calibre research, such as the multi-disciplinary MIT Energy Initiative.
Oberlin College	The Oberlin Project. Linking way of living and place with teaching for sustainable futures.
Oregon State University	Reputation in the sciences on environmental problems, e.g. Green Chemistry.
Prescott College	Teaching focus on environment and social justice.
University of British Columbia	Research on sustainability, with a slant towards urban systems. Focus on university as a living laboratory.
University of California	Applied Student Research pioneers through Education for Sustainable Living Program
University of Colorado	Teaching with sustainability as a learning outcome.
University of Minnesota	Reputation as a high-quality hub of research on the Environment.
University of Wisconsin	Reputation in the sciences for research with close ties to sustainability.
Western University	Centre for Environment & Sustainability as example of an arrangement of research and teaching.
Yale University	School of Forestry and Environmental Studies offers undergraduate, masters, and PhD degrees.

4.2. OPERATIONS

4.2.1 INTRODUCTION

McGill University is a large, complex, multi-scale institution. It is a significant consumer of resources and generator of waste. It wields influence through its financial clout via purchases and investments. Activities that fall under the umbrella of “operations” make up a significant portion of McGill’s action around sustainability. They are also increasingly being integrated with the research and learning functions of the university.

In 2011, staff members from a number of operational units at McGill began meeting as the Sustainability Coordinating Group. Represented units include Information Technology Services, Residences & Student Housing, Procurement Services, Food & Dining Services, Facilities Operations & Development, Libraries, and Teaching & Learning Services, along with undergraduate and graduate student societies. The mandate of this group is to coordinate and scale up efforts while tracking and reporting on progress. Some operational units have their own sustainability committees as well (e.g. Residences & Student Housing, Facilities Operations & Development, Libraries).

4.2.2 BUILT ENVIRONMENT

McGill University's downtown campus occupies 32 hectares within the Historic and Natural District of Mount Royal, a heritage zone created by the Government of Quebec in 2005. Most of the more than 100 buildings on campus were constructed in the late nineteenth and early twentieth centuries.

Under both municipal and provincial legislation, the university cannot make any changes that affect the built environment or heritage on campus without consulting the City of Montreal and the Quebec Ministry of Culture. In 1976, McGill outlined a collection of policies and principles outlining the preservation of architecturally and historically significant buildings. With regards to building retrofits, McGill is faced with balancing functionality issues with financial consideration, while maintaining the heritage and integrity of its

buildings. A detailed review of initiatives related to the built environment was prepared in 2004.¹⁵ The document concluded that McGill University lacks comprehensive green building guidelines and planning documentation. The 2008 Master Plan, however, identifies sustainable development as an overarching campus design principle.¹⁶

Green building policies and initiatives

No official green building policy has been passed to date although LEED-certified buildings have been constructed on campus including the McGill University Health Centre (Silver) and the Life Sciences Centre (Gold). Internally, the university has set a standard that all new construction is required to achieve LEED Silver certification. The university aims at also meeting the credits for LEED for Existing Building for all of its renovations. Seventy-five percent of McGill University’s construction standards have been revised to incorporate sustainable concepts, materials and construction practices (based on LEED certification among others). A waste management plan guides construction and renovation projects to achieve a 75% waste diversion rate.

In September 2011, the Design Services unit under Facilities Operations & Development released MAT (Material Analysis Tool), an online ranking system that distills manufacturer information to assist McGill’s staff and consultants in the selection of building products that are cost effective, healthy, and environmentally responsible.

McGill expects to put in \$40 million over the next 5 years towards energy efficiency and building retrofits; see Energy (4.2.3) for more detail.

¹⁵ Holden, A. (2004). Environmentally sustainable development initiatives at McGill. Report for the Green Building Task Force. Retrieved February 2012, from: https://secureweb.mcgill.ca/sustainability/sites/mcgill.ca.sustainability/files/A2EnviroDevI_niatMcGill.pdf

¹⁶ McGill University (2008). McGill University Physical Master Plan: Planning and Design Principles. Retrieved February 2012, from: https://secureweb.mcgill.ca/campusplanning/sites/mcgill.ca.campusplanning/files/2008_master_plan_principles_report_-_final.pdf

BEST PRACTICES IN THE BUILT ENVIRONMENT

Green Building Policies and Certifications

LEED accreditation has been established as the most used and reputable green building certification program across North America. Campuses across the continent have aligned their green building policies to meet LEED certification standards, with LEED-Silver representing the most common target for new buildings. The **University of British Columbia's** Centre for Interactive Research on Sustainability (CIRS) is a showcase of the Living Building Challenge, an emerging standard that pushes LEED certification with more robust indicators to meet a variety of sustainability and health related goals. This green construction has minimal impact on the environment and maximizes every inch of interior space to create functional and inspiring spaces for teaching, learning, research and community building. UBC has set the bar higher for Canadian institutions by striving for LEED-Gold for its new buildings. UniverCity, **Simon Fraser University's** model sustainable community neighbourhood is designed to be a compact, mixed-use and transit-oriented community founded on equity, economy, education and environment. The Sustainable Design Centre at **Cambrian College** in Sudbury, Ontario, is a 750 m² building that will achieve the Living Building Challenge.

Retrofit Programs

Harvard is currently seeking LEED certification for Existing Buildings, Operations and Maintenance (EBOM) for their existing building stock. A recent study concluded that building reuse almost always offers environmental savings over demolition and new construction. Moreover, it can take between 10 and 80 years for a new, energy-efficient building to overcome, through more efficient operations, the negative climate change impacts that were created during the construction process.

4.2.3 ENERGY

McGill University's energy consumption is largely determined by the following key factors.

- **Age of the buildings:** The average age of buildings at McGill University is 55 years, and 36% of its buildings were constructed before 1950. Older buildings are more difficult to both heat and cool and more costly to retrofit.
- **Occupancy:** The use of the buildings plays a major role in the overall energy consumption. At McGill, a significant amount of space on the campuses is dedicated to research laboratories (approx. 200,000 m² total), a use that is much more energy intensive than classroom and office spaces.
- **Number and size of buildings:** It is estimated that the total university building area requiring heating and cooling has increased by 13.2% since 2002 and an additional annual growth of 1.5% over the coming five years is projected with a corresponding increase in student and faculty populations.¹⁷ Many of the buildings are relatively small, resulting in heat loss from increased surface area relative to fewer, larger buildings.
- **Climate:** Montreal experiences heating and cooling extremes, resulting in significant peak energy demands in both winter and summer.

Because of these factors, energy consumption in the buildings at McGill is expected to be significantly higher than more modern universities, universities in more temperate climates, and universities that have more focus on teaching than research and the corresponding lab space.

¹⁷ McGill University (2010). Energy Management Plan, 2012-2015. Draft Report for presentation to the Building and Property Committee of the Board of Governors. Retrieved February 2012 from: <http://www.mcgill.ca/facilities/utilities/energymanagement/>

In spite of these factors, McGill's current energy intensity (1.98 GJ/m²) is actually below the Canadian national average of 2.04 GJ/m², though higher than the Quebec average of 1.94 GJ/m². The average in Ontario was 2.19 GJ/m² and 2.26 GJ/m² for the Prairies, as reported by Natural Resources Canada in 2003.¹⁸

All of the University's main buildings on the downtown campus are heated and cooled by a central powerhouse that delivers high pressure steam and low temperature chilled water to the mechanical rooms of each building via underground service tunnels. Steam is provided by three natural gas boilers, two of which are turned off during the summer months. Approximately two thirds of the energy consumed is natural gas and one third is electricity, although the share of electricity has increased in recent years. On the Macdonald campus, there is a power plant that provides steam to the lower part of the campus (south of Autoroute 20). North of Autoroute 20, the buildings are heated by boilers fueled by propane. There are also two chillers on the Macdonald campus.

McGill's greenhouse gas (GHG) emissions are influenced by the GHG emissions per unit of energy. Electricity in Quebec produces the lowest GHG emissions per GJ of any province due to its primary reliance on hydroelectric-sources, so McGill's GHG emissions related to buildings are determined primarily by natural gas and propane consumption, which has a higher GHG intensity.

In 2006, the *Ministère de l'Éducation, du Loisir et des Sports* (MELS) mandated that by 2010-2011 postsecondary institutions should reduce the intensity of their energy consumption relative to 2002-2003 figures by 14%. Though this target was not met by McGill or any Quebec university, some important advances have been made. Since 2002, McGill University has invested approximately \$10 million in various energy projects, resulting in a normalized energy consumption in 2009-2010 that was 5.66% less than that of the 2002-

2003 reference year.¹⁹ Energy costs are projected to grow from \$20.2 million in 2010-2011, to \$22.3 million in 2014-2015,²⁰ as energy prices climb and the campus expands. The Utilities and Energy Management department at McGill University has prepared an Energy Management Plan for 2010-2015, which predicts \$6 million in annual savings relative to the anticipated growth in energy costs, by 2014-2015. By 2019-2020, these savings are expected to increase to \$7.1 million annually. The energy management plan includes the following commitments:

- Implementation of an energy management information system to monitor energy consumption in real time;
- lighting retrofits;
- building energy audit program;
- building re-commissioning program; and,
- energy conservation projects.²¹

McGill has implemented many specific initiatives related to energy reduction including the following initiatives.

- A Campus Energy Dashboard using Pulse Energy's technology, a real time on-line tracking system accessible to the community. The online Dashboard monitors steam, natural gas, electricity, chilled water and hot water consumption in real time for 67 buildings (8 more are under way) on the downtown and Macdonald campuses out of 145 buildings on the downtown campus and 94 buildings on the Macdonald campus (i.e., 31% of total buildings on the two campuses are currently being monitored).

¹⁹ McGill University (2010). Energy Management Plan, 2012-2015. Draft Report for presentation to the Building and Property Committee of the Board of Governors. Retrieved February 2012 from: <http://www.mcgill.ca/facilities/utilities/energymanagement/>

²⁰ McGill University (2012). Strategic Reframing Initiative. Energy. Retrieved February 2012, from: <http://www.mcgill.ca/sri/srithemes/energy>

²¹ McGill University Energy Management Plan (2010). Retrieved March 21st, 2012 from: https://secureweb.mcgill.ca/facilities/sites/mcgill.ca/facilities/files/McGill_Energy_Management_Plan.pdf

¹⁸ Retrieved February 11th, 2012 from: http://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/data_e/consumption03/universities.cfm?attr=0

- Lighting retrofits: the installation of more efficient tubes and ballasts as well as the installation of detection sensors to reduce lighting energy in the buildings.
- The Burnside Hall Data Centre is currently installing a heat exchanger that would use excess heat from the data centre to heat the nearby Otto Maas building. This project, along with the Otto Maas Chemistry Ventilation Upgrade project (completed in early 2011), will reduce the natural gas consumption of the Otto Maas Chemistry building by 90%, translating into a GHG reduction of 90%. The consumption of the Otto Maas Chemistry building before the ventilation upgrade and the Burnside Hall Heat Recovery Project was estimated to 110,000 GJ, close to 8% of the total energy consumption of the campus.
- Approximately \$4.5 million will be spent on the Macdonald Energy Project, a project focusing on energy efficiency and potentially the production of renewable energy on the Macdonald campus (a final design has yet to be approved).
- The “Fight the Power” energy reduction competitions among residence halls have become popular and resulted in significant short-term energy savings.

Carbon Neutral: Achieving net zero carbon emissions by balancing carbon released with an equivalent amount sequestered or offset, or buying carbon credits to make up the difference

Climate Neutral: Similar to carbon neutral, recognizing that greenhouse gases other than carbon dioxide also play a role in climate change

Net Positive Energy Producer: Producing more energy (from clean/renewable sources) than is used by the building or campus. Can be achieved by reducing consumption, increasing production, or both.

BEST PRACTICES IN ENERGY

Carbon neutrality

Strategies vary across the continent with some setting aspirational long-term goals of climate neutrality, such as **UBC, Cornell University, Colorado State University, Oberlin College** and the **University of Maine**, and others setting short-term yet significant reductions like **Dalhousie**, which is committed to reducing emissions by 15% below 2008-2009 levels. The **Oberlin Project** aims to integrate both Oberlin College and the surrounding town of Oberlin to achieve carbon neutrality. **Royal Roads University** made and met a commitment to be carbon neutral by 2010.

Expanding renewable energy sources

Colorado State expanded renewable energy sources on campus in spite of dramatic budget reductions. This project was accomplished through strategic partnerships and has secured stable energy prices for the university for the next twenty years. **UBC's** CIRS building has achieved net-positive energy performance; by harvesting renewable and waste energy, the building is able to supply not only its own energy needs but also a portion of the needs of an adjacent building. These best practices show that by harnessing academic research expertise on campus with the goal of renewable energy generation, campuses can take advantage of local renewable energy opportunities and turn them into financial solutions.

Innovative funding mechanisms for energy retrofits

Internationally, universities are beginning to develop green revolving loan funds to support the creation of energy efficiency projects. The most notable fund is **Harvard's** Green Loan Fund (GLF) that provides up-front capital for projects that reduce Harvard's environmental impact. Projects pay back the loan from their savings within five years.

Both **UBC** and **Algonquin College** have undergone comprehensive retrofits through energy services company (ESCO) contracts. Launched in 2001, UBC's ECOTrek was conceived as the largest energy and water infrastructure retrofit ever to have taken place on a Canadian campus. UBC entered into an ESCO with MCW Custom Energy Solutions Ltd. BC Hydro also provided incentives totaling nearly \$4 million, contingent on realizing the projected electricity savings.

4.2.4 TRANSPORTATION

The McGill community has been making significant efforts in improving and encouraging alternative transportation to and from its campuses. Active transport and public transit combined make up 84% of transportation to and from McGill University campuses.²² McGill runs a shuttle bus service between its two campuses, which are separated by about 35 kilometres and pose unique transportation challenges.

Since 2007, additional bike paths have been installed on rue Milton, rue University, rue McTavish, and Boulevard de Maisonneuve to encourage additional bike commuting to and from the downtown campus. This has involved significant collaboration with the City of Montreal to ensure that the needs of all parties were met. As part of the Greening Campus project, the number of campus bicycle parking spaces has doubled, the lower downtown campus is now almost completely car-free and on-campus parking has been eliminated. Campus parking prices have increased and a portion of the funds generated are allocated towards the Sustainability Projects Fund. The pedestrianization of the downtown campus has included a “walk-bike” policy on campus, although this policy has been a point of contention for campus community members.

There are currently two student-run bike collectives on campus, “The Flat” in the University Centre and “La Cave” in Solin Hall residence. Additionally, the Macdonald campus has a bicycle loan program that has been operational since 2004, including signing out bicycles and helmets and maintaining bicycles purchased by McGill and/or donated by members of the community. In addition, security agents on both campuses routinely conduct patrols by bicycle whenever the weather and security requirements permit.

Out of a fleet of about sixty motorized vehicles (not including trailers, snowmobiles, boats, or research vehicles), McGill University currently has one hybrid fleet vehicle and two Subaru all-wheel drive PZEVs. University security aims to gradually replace all vehicles with alternative hybrid models. All vehicle requests, including those for research vehicles are reviewed by the Office of Sustainability, and suggestions for more environmentally friendly options are made when relevant.

In 2011, the Transportation Research at McGill Group (TRAM) conducted a transportation survey in collaboration with the McGill University’s Office of Sustainability. Just over 5,000 responses were received, a response rate of 25% comprising 56% employees, 43% students and 1% others. The TRAM transportation study identifies the commuting habits of members of the McGill University community to help establish opportunities for improvement in services to promote alternative modes of transportation. Among a number of other recommendations, the study identified the opportunity to work with the City of Montréal to improve the reliability and frequency of high-use bus routes and commuter train lines and to improve access to transit stations for the mobility impaired. It also identified the opportunity to offer incentives for students to purchase Bixi memberships or used bicycles; and, introduce facilities such as showers, lockers, and sheltered, secure bicycle parking.

²² Transportation Research at McGill (2011). An examination of commuting patterns to McGill University- Results of the 2011 McGill Transportation Survey. Retrieved February 9th, 2012 from:

<http://tram.mcgill.ca/Research/Publications/McGill%20Travel%20Report%20English%20Summary.pdf>

BEST PRACTICES IN CAMPUS-BASED TRANSPORTATION

Public transportation and discounted public transit passes

Campuses across North America have been developing strategies to encourage green transportation choices to and from campus. Discounting public transit passes has been the primary mechanism for campuses to achieve high green commuting levels, though it is not clear that this is a desirable model for an urban university such as McGill where transit use is already high. Over 61% of campuses covered in the Campus Sustainability Report Card, for example, offer financial incentives to students and/or employees for the use of public transit. Over 30 campuses across Canada offer Universal Bus Passes to students on campuses to encourage use of public transit. Some also extend benefits to staff.

Alternative energy vehicles

According to the Campus Sustainability Report Card, alternative-energy vehicles are increasingly used on campuses across North America. Hybrid, electric or biofuel cars are amongst the leading options and are included in 86 percent of the schools' fleets. Some of **UBC's** plant operations vehicles use B20 biodiesel. The **University of Alberta** recently purchased hybrid and electric vehicles as part of plans to green the vehicle fleet.

Carpool and bike sharing programs

Offering ride-matching services and preferred parking are ways to increase carpooling. The **University of British Columbia's** TREK program offers carpool programs and a commercial car-sharing program. The University of Alberta's bicycle-sharing program runs from April through October and includes a part-time mechanic.

4.2.5 GROUNDS

McGill University is currently devoting extensive time and resources to greening the grounds on the downtown campus by working to establish increased pedestrian zones, reduced impermeable surfaces, xeriscaping, improved biodiversity and increased green space. The prize-winning Greening McGill project on McTavish Street helps to address issues related to walkability, health and wellbeing, storm water management and the heat island effect, while enhancing community vitality and serving as a showcase for other sustainability initiatives. McGill University has increased the greenspace in the square located just inside the Milton Gates and has given rooftop space around the Burnside Building to the Edible Campus Project, a partnership between the McGill School of Architecture's Minimum Cost Housing Group, Santropol Roulant, a local non-profit organization, and Alternatives (although Alternatives is no longer involved) to create a thriving rooftop garden to support their Meals on Wheels program. Permeable spaces and gardens have been created throughout the downtown campus helping to improve overall storm water management. The LEED Gold certified Life Sciences Complex integrates a thriving green roof as does the Macdonald Engineering Building. The McGill Grounds unit is committed to water-efficient campus landscaping by selecting perennial vegetation, which require less water than annual plantings. McGill has also adopted an integrated pest management, avoiding the use of inorganic fertilizers and industrial pesticides. Horticultural management includes favoring native species and on-site propagation of plants where appropriate, as well as a tree stewardship practice (moving and/or replanting all trees wherever required).

The downtown campus makes up only a small proportion of McGill's land stewardship portfolio. The Macdonald campus is the largest green space on the island of Montreal. It includes the 205-hectare Macdonald Farm, which is used for research and demonstration purposes, and the 245-hectare Morgan Arboretum, which conserves an important woodland tract while providing extensive opportunities for public outreach and education.

McGill University's Gault Nature Reserve protects 1000 hectares of natural primeval forests of the St. Lawrence Valley at Mont Saint-Hilaire approximately

40 km from Montreal. The area was recognized as the first Biosphere Reserve in Canada under the UNESCO Man and the Biosphere Program.

4.2.6 FOOD

McGill Food and Dining Services (MFDS) is a self-financing unit operating under a mixed business model, comprised of self-operated locations, food facilities and catering services managed by food service providers and tenants.

McGill Food and Dining Services (MFDS) has made enormous efforts in pushing the sustainability agenda and is a leader in sustainable food services. MFDS has created a strategic sustainability plan entitled, “An Appetite for Sustainability,” which takes sustainable development into account when purchasing food. The plan is from 2010-2013 and demonstrates MFDS’ short and long-term commitment to sustainability in collaboration with its community, including engagement from downtown campus MFDS locations, the Students’ Society of McGill University (SSMU), the Post Graduate Students’ Society (PGSS) and the Faculty Club. In the fiscal year 2010-2011, MFDS downtown locations purchased 9,000 kilograms of produce from the Macdonald Campus Farm. MFDS has prioritized:

- Local foods, but no hard targets for local and/or organic.
- Purchasing all eggs from Macdonald campus by the end of 2012.
- 100% of tofu from Montréal and 100% organic.
- Implementation of purchasing program to ensure compliance with seasonal and local purchase guidelines (from within 500km): 75% or more of produce (including frozen) in summer, 50% or more in the fall and 25% or more during winter and spring (with exception of citrus).
- Grains and flakes are certified Quebec Vrai.
- 2% of chickens purchased are organic.

In early 2011, the locations managed by MFDS established a set of commitments related to sustainable purchasing including a commitment that 100% of the coffee served is fair trade certified or equivalent. . All fish and seafood is chosen by MFDS to ensure it meets chosen “eco-labels” including Marine Stewardship Council, Best Aquaculture practices, or OceanWise. MFDS

BEST PRACTICES IN GREENING GROUNDS

Natural vegetation policy

Setting guidelines for campus development is integral for the maintenance of sound campus greening practices. In 2005, the **University of North Carolina’s** Task Force on Landscape Heritage and Plant Diversity developed Guidelines for Landscape Designers Working on the UNC-Chapel Hill Campus. These guidelines state a preference for native plants and plants adapted to the ecological conditions of sites under development or renovation. Similarly, **Dalhousie University** recently passed a Natural Vegetation Policy and corresponding guidelines. The policy provides clear stipulations for planting native vegetation.

The **University of Alberta**, nestled along the south shore of the North Saskatchewan River, has maintained a nest box designed for the native and once threatened peregrine falcon species that frequent the area. The campus also has a policy to use native plant species whenever possible and the use of grass as a ground cover is discouraged and used only in student and staff gathering quads. Also in Alberta, the urban campus of the **University of Calgary** emphasizes using native plant species: 85% of grounds trees and shrubs are native to the area.

Permeable spaces, stormwater management and heat island effect

The heat island effect causes urban regions to become warmer than their rural surroundings due to the development of buildings, roads, and infrastructure replacing open permeable land and vegetation. Institutions are trying to reduce heat island effect while improving storm water management by integrating permeable spaces throughout their campuses. The **Rensselaer Polytechnic Institute** in the U.S. planted 18,000 small plants on a 560m² site above the Student Union Bookstore known as the Class of 2010 Green Roof.

also provides every student registered in the Mandatory Meal Plan with an Eco-Kit composed of a reusable MFDS mug and a reusable container called the Eco-Clamshell. In May 2011, Local Food Plus (LFP) and MFDS signed a partnership aiming to develop a local sustainable food system at McGill, this partnership will support MFDS to source products from Québec farms that are officially LFP certified.

The McGill Food Systems Project is a collaborative effort between students, professors, MFDS and the Office of Sustainability and is a model for advancing sustainability through applied student research. Pilot projects based on this model have recently been started on five other campuses across Canada. The McGill Food Systems Project, in collaboration with MFDS, has created the Food System Administrator position responsible for helping to build a flexible and localized sustainable unit. In addition to the local foods incorporated into the daily menus of MFDS, Local Food Days events spotlight a large selection of locally-grown foods served in the residential dining halls. Once a month, students in each of the five dining halls are able to enjoy local products and learn about local eating, while increasing the sustainability of the food process at McGill University. Sustainable food practices on campus also include fair trade coffee, many vegetarian options and waste minimization. Meatless Mondays are another successful weekly event in all residential dining halls. An eco-station was also installed at the New Residence dining hall to encourage clients to scrape their china into a compost bin. Other residences will have eco-stations installed once the system is optimized.

The Midnight Kitchen is a student-led initiative that provides free, vegan food at lunch to all interested students. Happy Belly is an equivalent initiative on the Macdonald campus. The Organic Campus is another student service dedicated to bringing healthy, low impact, local organic fruits and vegetable to the McGill community. Since 2008, a partnership between students and staff has established a successful McGill Farmers' Market during the fall season on rue McTavish. The Macdonald Student-run Ecological Gardens (MSEG) and Campus Crops grow food on the Macdonald campus and downtown campus, respectively, offering experiential learning for students and staff through volunteering. They have also been integrated into a dozen different courses on Macdonald campus. MSEG also sells weekly veggies boxes and sells produce to

BEST PRACTICES IN FOOD SERVICES

Local and sustainable foods

Purchasing local and sustainable foods is fast becoming a top priority for university hospitality departments. The 2011 College Sustainability Report Card reports that ninety-eight percent of schools devote a portion of their food budgets to buying from local farms and producers. Sixty-two percent of schools have waste composting programs. Seventy percent of higher education institutions have campus community gardens and farms from which dining halls can source food. The majority of McGill's comparator institutions spend approximately 40% of their budget on local food; McGill University is slightly higher than this average.

Sustainable food services policies, plans and evaluation criteria

The **University of California, San Diego** is implementing a Sustainable Food Services Plan, which sets clear sustainability targets and timelines in its food services. Hospitality services at **Western University** have integrated sustainability and food decisions by including sustainability factors in the evaluation criteria in their Request for Proposals. The **University of Colorado** employs a similar process by giving preferential treatment to franchises that: a) offer materials reduction programs; b) meet the zero waste standards supported by the University of Colorado; c) incorporate recycled content; and, d) commit to achieving the post-consumer product standards generate by the United States Environmental Protection Agency. The **University of California, Los Angeles** requires all leased operations to comply with their food sustainability policy.

Campus based gardens and food production

Like McGill, some universities choose to support campus-based gardens and food production systems. **Mount Allison University** harvested 14,000 kilograms of potatoes and other vegetables from its campus farm and served them in the university's dining hall. The **UBC Farm**, a student-run 24-hectare learning and research farm, operates a farmers market open to the wider community while retaining and re-creating farm and forest lands.

students and staff in the Macdonald Stewart building foyer on the Macdonald campus, and to the public at the Marche Ste. Anne (Ste. Anne-de-Bellevue) and the McGill Farmers Market.

The Macdonald Campus Farm has dairy, poultry and ham facilities with 120 cows, 3,000 egg-laying chickens, and 44 pigs. About 100 students in the Farm Management and Technology Program interact with the facilities each semester through courses and research. The Macdonald campus also has the Macdonald Community Garden—64 gardening plots available to students and staff to grow vegetables and other plants every summer for a \$10 cost. This garden is located near the Eco-Residence.

4.2.7 WATER

The McGill community is currently embarking on a range of water conservation initiatives throughout the university.

Water metering & water conservation

Water metering has yet to be implemented as an overarching management system on the campuses, however the Macdonald campus currently has two water meters and the downtown campus is currently developing a water metering strategy. High efficiency and low-flush urinals, fixtures including faucets and showerheads are the standard on campus and all renovation and construction projects install water-efficient fixtures. McGill's new LEED Gold certified Life Sciences Complex has integrated a water cistern; the rainwater captured from the building's reflective roof is stored in a 50,000-litre cistern and used for toilets and urinals, cutting potable water consumption by 50 per cent.

Water efficient landscaping

In new landscaping, a focus is made on replacing annuals with perennial plants in an effort to decrease water consumption. Grounds staff members select

BEST PRACTICES IN WATER CONSERVATION

Installation of water efficient fixtures and toilets

The installation of low flow showerheads and faucets is the most common strategy adopted by institutions to save water. Some campuses, such as the **University of Missouri, Columbia, University of Calgary, McMaster** and the **University of British Columbia** have also started introducing dual-flush toilets. McGill's practices are in line with these best practices.

Building metering

Building metering is also an important initiative to ensure the ability to monitor and assess water usage on campus. **The University of Pittsburgh, University of North Carolina at Chapel Hill, University of Missouri, Columbia, Queen's** and the **University of Calgary** all meter 100% of their buildings.

Natural wastewater treatment systems

Oberlin College has created a living machine that processes wastewater into reusable grey water via the natural cleansing system that occurs in wetlands, located in the Adam Joseph Lewis Centre for Environmental Studies. **UBC's** CIRS building collects black and grey water from fixtures in the building. The Solar Aquatic System filters and treats the water that is then pumped back in to the building for toilet flushing and to irrigate the living roof.

Collecting and reusing rainwater

The Learning and Innovation Centre (LIC) at **Royal Roads University** collects rainwater that is then used for irrigation purposes. Non-potable water is also used for its microfiber cleaning system.

Bottled water

There are currently 10 Canadian universities that have banned the sale of bottled water on campus. These universities include **Queen's University, University of Ottawa, University of Winnipeg, Université de Sherbrooke, Vancouver Island University** and **St. Mary's University**.

drought tolerant trees, shrubs and perennial plants, such as red fescue (a shade and more drought-tolerant grass). In addition, compost is used to improve the capacity of water retention in the landscaping and beds are covered with mulch to decrease overall water consumption.

Bottled water

With strong student involvement, McGill has embarked on efforts to reduce the reliance on bottled water and encourage tap water use. Several high-volume filling stations have been installed throughout both the downtown and Macdonald campuses, with more planned for the future. Students and staff also worked together to promote Bottled Water-Free Day on March 10th, 2011 and March 15, 2012 with information provided on the McGill University homepage and in the McGill Reporter about the environmental benefits of switching to tap water. Adoption of university bottled water guidelines is expected in 2012. In addition, since January 2011, residences have eliminated bottled water from their dining halls. Catering by McGill University (including the Faculty Club and Food and Dining Services) provides water to clientele in pitchers instead of in bottles upon request.

Other initiatives

A water collection system was created in 2010 on the Macdonald campus; this is the first rainwater harvesting project on the Macdonald campus, and has been integrated into the curriculum through class tours (i.e. Bioenvironmental Engineering, Watershed Management and Urban Horticulture).

The Water is Life!: Sustaining McGill University's eau de vie is a project produced by the Science Outreach team at the Redpath Museum, and is also funded by the Sustainability Projects Fund. The project will run from April 2011- December 2012, and involves a travelling exhibit and online resources aimed to help the campus community learn more about sustainable water consumption.

4.2.8 WASTE MANAGEMENT

McGill University is currently making significant efforts in reducing its overall waste on the campuses. McGill has a 75% diversion target for construction and renovation waste, however, the diversion rate for non-construction waste is currently only very roughly known, and is estimated at approximately 30%.

Composting

The acquisition and operation of the Big Hanna industrial composter on the downtown campus over the past several years has been a very collaborative project involving students and key operational units, including Grounds Services and McGill Food and Dining Services. Green waste is sent to the Saint-Michel Environmental Complex for composting.

Recycling

In addition to existing interior recycling bins for paper, metal, plastics, etc, six large outdoor recycling units with solar compactors were installed in 2011, along with ten additional indoor recycling units.

Hazardous waste

In addition to services regarding common hazardous materials like batteries and refrigerants, the Hazardous Waste Management Department most recently purchased a vial crusher to ensure proper treatment of radioactive materials while reducing the amount of unnecessary waste treatment, by crushing vials and testing their contents.

The "Reboot McGill" student-led effort collects surplus McGill University computers and peripherals in collaboration with the Hazardous Waste Management Department. If possible, the group refurbishes the equipment, redeploying it on campus where appropriate, donating any unwanted usable equipment, and arranging for the proper disposal of all unusable equipment, as appropriate.

Reusable dishware and trayless dining

The Plate Club is a well-established student-run service whose purpose is to loan reusable dishware and then wash it in an efficient dishwasher; this has been well received by students and staff. Aramark has piloted a trayless initiative at McGill's Carrefour Sherbrooke residence, helping to decrease overall food waste in the residence.

Paper reduction

Since the implementation of the University Paper Use Policy (2005), there has been a reduction in course evaluation paper, human resources and accounting paperwork (including paycheques and student invoices), and elimination of nearly all paper memos. Approximately 480,000 sheets of paper previously required for data collection alone are now saved. McGill University's new centralized printing/copying service offers default double-side printing and free scanning to email. The goal is a significant reduction in the 75 million impressions currently made on campus printers and copiers, and also a reduction in the number of printers that McGill University maintains. The purchase requisition process, through Procurement, has also been automated, resulting in an annual savings of approximately 200,000 sheets of paper.

4.2.9 PROCUREMENT

Purchasing strategy and policies

Procurement Services is embarking on a sustainability strategy for its procurement efforts. A McGill purchasing policy is currently being developed and is undergoing an approval process. McGill has had a paper use policy in effect since 2005. Additionally, the Students' Society of McGill University (SSMU) and a number of faculty associations have sustainable and ethical purchasing policies in place.

BEST PRACTICES IN WASTE MANAGEMENT

Waste reduction & diversion targets

By setting waste diversion targets, campuses can set a clear goal for their waste diversion efforts. **Western University's** Westminster Hall, for example, has achieved their goal of becoming a zero-waste building and is setting the stage for significant advances to better the university's already impressive 60-70% campus waste diversion rates. The **University of British Columbia** aims to reach a 55% diversion rate on its campus and **Butte College** has set a goal of 75% recycling rate for waste materials.

Trayless dining

The first strategy in any waste diversion program is to avoid creating unnecessary waste. Seventy-five percent of schools have reduced their energy and food waste by eliminating trays in some or all of their dining facilities. In addition to the energy and water savings, campuses implementing trayless dining programs have found that food waste declines up to 50% and is popular with students. Aramark tested the idea across its cafeterias in the U.S. and found that 79% of students surveyed supported trayless dining as a strategy to reduce campus waste.

Composting

In addition to waste reduction strategies, campuses have been converting waste destined for landfills into other manageable waste streams such as recycling or composting programs. Sixty-two percent of schools have waste composting programs. **Royal Roads University** has created a campus wide composting initiative with the aim of composting and recycling all waste on campus

Arizona State University collects green "waste" and sends it to a local farm where it is made into compost that the university later uses as a fertilizer.

McGill requires all calls for tenders to include reference to the University's Sustainability Policy and stresses the importance of social responsibility: bidders are required to indicate in their proposal how they could support the University in accordance to this policy. Act C-65.1 "An Act Respecting Contracting by Public Bodies" permits public bodies to require a quality assurance system, including the ISO 9001:2000 standards, or a specification relating to sustainable development and the environment for the carrying out of a contract. In addition, all of McGill's buyers are currently being trained in sustainable purchasing.

Green certified cleaning products

McGill has been using green certified cleaning products in all buildings managed by Building Services since 2001, and in 2009 opted to change over to entirely detergent-free cleaners. McGill University has established a green cleaning products agreement that outlines all products to be Eco-Logo, Green Seal approved, and/or biodegradable. The call for tender developed for Building Services limits all purchases for cleaning products for day-to-day maintenance in buildings to only use Eco-Logo or Green Seal approved products. Cleaning tools (rags and scrubbers) were also replaced with more durable products that reduce waste. SSMU also uses safe environmentally responsible cleaning products in the University Centre.

Furniture procurement

Procurement Services is also working with Campus and Space Planning, the Office of Sustainability, and the new Furniture and Signage Coordinator at Facilities Operation and Development to understand issues regarding furniture procurement and develop solutions for recuperation and the end of life disposal, with the goal of minimizing purchases and waste.

Safe product handling

Procurement Services requires suppliers to collect and appropriately dispose of all unfinished, obsolete compressed gas cylinders, and is also spearheading initiatives to replace and safely dispose of mercury thermometers, to collect

BEST PRACTICES IN PROCUREMENT

Common sustainable purchasing trends include energy efficient appliances, fair trade coffee and teas, recycled paper products, reusable mugs (for resale), fuel-efficient fleet vehicles, photocopiers capable of double-sided printing and fair trade clothing (for resale). Over two-thirds of the schools completing the College Sustainability Report Card have adopted green purchasing policies for items including paper, appliances, cleaning supplies and electronics.

Sustainability guidelines and performance standards

Stanford University sets clear and specific guidelines for the procurement of goods and services. Their policy states that "The Procurement Department seeks to purchase products, goods, and services that: 1) conserve natural resources; 2) minimize environmental and health impact; 3) support recycling markets; 4) reduce energy consumption; and, 5) reduce materials dumped into landfills." Similarly, **Queen's University's** green procurement policy includes environmental sustainability and fair trade as core values.

UBC's Sustainable Purchasing Guide is designed so that staff, students and faculty can purchase more sustainable products and services, from catering to couriering, office supplies to event planning. The guide encourages purchasers to consider the answers to six key questions before making a purchase: 1) What is the product made of?; 2) How was it made?; 3) Who made it and how they were treated?; 4) How will it get here?; 5) How long will it last?; 6) How will it be disposed? Four guiding principles are described including leadership, social inclusivity, environmental stewardship and accountability.

Green office program

The **Harvard** Green Office Program offers staff practical solutions required to meet Harvard's GHG reduction goal. The program is structured around four levels of sustainability certification – Leaf One, Two, Three and Four – in nine categories: Energy, Events & Meetings, Kitchens, Outreach, Publications, Purchasing, Recycling, Transportation and Waste Reduction. Upon attaining the first level, an office is awarded or recognized as a Harvard Green Office, and can build upon that success to earn a higher level, helping to encourage other offices to do the same.

Supporting local businesses

Sustainability in procurement practices can also extend to supporting local businesses, historically underutilized businesses, minority-owned businesses, and women-owned businesses. In Canada, competition and procurement laws often make the achievement of these latter goals difficult, though all but 4 of STARS Gold-rated institutions state their institutionalized support for historically underutilized, minority-owned or women-owned businesses. Four Canadian campuses completing the STARS assessment – **Dalhousie University**, **Royal Roads University**, the **University of British Columbia**, and the **University of Ottawa** - state their preference for procuring products made locally and from local businesses.

and recycle used cell phones, and to clean potentially contaminated lab clothing items on campus so users do not have to take them home.

Human rights and social responsibility

McGill University has decided to boycott buying products made in Myanmar/Burma. Procurement Services upholds this boycott and has stipulated that the University's selected supplier of uniforms must certify, in writing, that their products are free from any and all materials that may have been made in Myanmar.

Supplier collaborations

Fisher Scientific, one of McGill's contracted suppliers for Laboratory Supplies, has been very involved with sustainable initiatives in the research area at McGill. They have developed a "Tips for a Greener Lab" guide for end-users to use and in the future will be considering other initiatives such as the re-use of microbiological media containers (or bulk packaging), the use of reusable vessels to store serological pipets, an equipment cycling program and the recycling of chromatography columns.

Fisher will be assisting Procurement Services with the elimination of mercury thermometers across campus. They will also be collaborating with the Faculty of Medicine for the Green Biobanking Sustainability Project in which the use of cold storage for biomedical samples and information regarding the use/advantages of energy efficient freezers/refrigerators will be evaluated. Procurement Services will also be assessing the possibility of a pilot project with a group of researchers from Pharmacology regarding the possibility of consolidating shipments from Fisher.

4.3. CULTURE

4.3.1 INTRODUCTION

Building a sustainable university is not a matter of adding up variables in an equation. Though teaching, research and the many components of operations all intersect with questions of sustainability, they do so within a broader and more complex milieu of organizational and community culture.

The McGill community talks about “building a culture of sustainability”—about engagement, collaboration, resilience, breaking down silos, cultivating champions, catalysing change, and making it easier to institutionalize good ideas. All of these are, to some extent, buzzwords, but they all touch on aspects of culture—the intangible “secret ingredient” that makes sustainability in higher education more than the sum of its parts.

The following sections shed light on some of the elements of McGill’s culture related to sustainability. They are not the whole picture. Ultimately, questions of culture come back what it feels like to be a member of the McGill community—as a student, faculty member, staff member or administrator. Fully capturing those experiences is beyond the scope of this report; what is described here are some of the institutional structures and processes that underlie McGill’s culture and can serve as leverage points in becoming a more sustainable institution and community.

4.3.2 GOVERNANCE

Sustainability efforts are being pursued by a variety of actors across the McGill community. This section examines how those efforts are governed, within the context of broader McGill University governance.

Three key areas relevant to governance are examined: (1) the institutional framework for sustainability, which includes policies, committees, and administrative units; (2) staff resources dedicated to sustainability efforts; and (3) funding sources that support sustainability initiatives.

Institutional Framework

Policies

McGill’s Sustainability Policy, adopted in 2010, frames the University’s overall approach to sustainability. The policy was drafted by a working group of students, staff, academics, and administrators then approved by Senate and by the Board of Governors. The plan’s central goal is for the University to carry out its mission responsibly, in a manner that achieves a balance between the social, economic and environmental dimensions of sustainability. The sustainability builds on earlier policies, including the Environmental Policy (2001) and the Paper Use Policy (2005).

Some policies reflecting social dimensions of sustainability include the Employment Equity Policy and McGill’s commitment to diversity (reflected in the McGill Policy on Harassment, Sexual Harassment, and Discrimination).

In addition to the policies mentioned above, McGill has signed or agreed to participate in several sustainability declarations or plans. These include:

- Talloires Declaration (1990)
- Halifax Declaration (1991)
- Ville de Montréal Plan de développement durable (2005-2009; 2010-2015)
- Universitas21 Sustainability Declaration (2009)
- Declaration of the island of Montreal community in favour of biodiversity and greening (2010)

While the Sustainability Policy and abovementioned commitments provide a general direction for the University’s sustainability efforts, the University currently has not committed to any specific benchmarks and has not developed a management system for monitoring overall progress on sustainability initiatives.

Committees

At the highest level, the University has two governing bodies: the Board of Governors, which has final authority on all administrative issues and decisions,

and the University Senate, which has final authority on all academic issues and decisions. There is no single body within the University's government with a specific focus on sustainability but rather several committees that play an important decision making role with respect to sustainability.

Student government committees are also involved in decision making with respect to sustainability, although not at the same scale or with the same weight as committees of the Board or Senate.

Administrative Departments

The Office of Sustainability is an administrative unit established in 2008 to create a culture of sustainability at McGill and to help integrate the activities of the many actors involved in the sustainability efforts throughout the University community. Oversight of the office is part of the mandate of the Associate Vice-Principal (University Services).

Numerous other administrative and academic units share a mandate to contribute to the University's sustainability efforts. Some of them are highlighted in the previous sections on academics and operations.

Staffing

There are several staff positions at McGill that are directly relevant to sustainability efforts. These include:

- Environmental Officer (Office of Sustainability)
- Sustainability Projects Fund Administrator (Office of Sustainability)
- Sustainability Manager (Office of Sustainability)
- Energy Manager (Facilities, Operations and Development)
- Food Systems Administrator (Food and Dining Services)
- SSMU Sustainability Coordinator (SSMU)
- SSMU Environment Commissioners (SSMU—3 positions)
- PGSS Environment Commissioner (PGSS)
- PGSS Sustainability Coordinator (PGSS)
- Green Living Learning Community (GLLC) coordinator (Residences and Student Housing)

In addition to these permanent positions, there many more positions within academic and operational units for which sustainability is integrated into the mandate. There are also approximately 60 student positions funded through the Sustainability Projects Fund. Recognition for sustainability efforts for the McGill community is mainly through the Catalyst Awards (established in 2011); the Principal's Awards for Administrative and Support Staff also include sustainability as one of the criteria.

Funding

In addition to the funds provided to sustainability initiatives through an increase in parking rates (2007), in 2009, the three principal students' societies (SSMU, PGSS, and MCSS) spearheaded the creation of the Sustainability Projects Fund (SPF). In three referenda, each society voted overwhelmingly in favour of a \$0.50 per credit fee to support the fund. The SPF's goal is to build a culture of sustainability at McGill and create opportunities for the McGill community to actively engage in sustainability initiatives on campus. Any member of the McGill community can submit a project to the SPF.

The SPF Working Group reviews applications and makes decisions with regards to which projects will receive funding. The group has eight members, four of which are nominated by the three principal students' societies (two by SSMU and one each by PGSS and MCSS) and four of which are nominated by the administration. The Associate Vice-Principal (University Services) chairs the group as a non-voting member.

The Sustainability Projects Fund Administrator stewards the group and acts as a liaison with project team applicants. In addition to facilitating the application process, the SPF Administrator is also responsible for ensuring that approved projects are executed as planned and for tracking progress on sustainability accomplishments achieved through the SPF.

The University has other very important and complementary funding sources available to finance community-initiated sustainability projects. These include:

- SSMU Green Fund
- SSMU Library Improvement Fund

- Social Equity and Diversity Education (SEDE) Community Action Toolkit
- Mary H. Brown Fund
- PFF Community Leadership Program
- Dalai Lama Fellowship
- Sauvé Scholars Program

Some funding can also be allocated to sustainability projects via the Provost's priority pool on a case-by-case basis. The McGill School of Environment's Montreal Urban Sustainability Experience (MUSE) was funded this way.

Sustainability is also one of the five pillars of Development and Alumni relations' capital campaign and Development and Alumni Relations is currently raising funds for a chair in sustainability in research and education.

Integration and Process

The creation of the Office of Sustainability, the adoption of the Sustainability Policy and the development of the SPF are steps toward integrating the University's sustainability efforts, while encouraging the development of new initiatives. While emergent strategy was appropriate in the past, in order to achieve further integration McGill would benefit significantly from a sustainability plan that includes a set of concrete sustainability goals, actions and targets toward which to work²³ (Moore 1995, Lozano 2009). This is the purpose of the *Vision 2020* process.

²³ Moore, Mark Harrison. *Creating Public Value: Strategic Management in Government*. Harvard University Press. 1995.

Lozano, Josep M. *The Relational Company: Responsibility, Sustainability, Citizenship*. Peter Lang. 2009.

BEST PRACTICES IN GOVERNANCE

Institutional Frameworks

University of Alberta engaged in a student-led deliberative democracy process to develop recommendations to feed into the university's sustainability plan. This project was innovative in its approach to engagement, particularly of students, while being housed within the Office of Sustainability to facilitate implementation.

University of Calgary has a Board-level sustainability policy, plan, committee, and reporting regime. Sustainability committee's mandate includes the environment, health, safety and sustainability.

University of Winnipeg has a Campus Sustainability Council composed of students, faculty and staff with particular expertise or interest in one or several aspects of campus sustainability. The campus has a number of Working Groups chaired by staff from the university's Campus Sustainability Office. CSC provides advice and counsel to the VP, Human Resources, Audit & Sustainability, who in turn provides advice and counsel to Senior Administration, on all matters related to campus sustainability.

University of Pittsburgh publishes an annual Green Report Card on which it assesses its progress in various areas relevant to sustainability with respect to the previous year. In addition to an overall grade, the report card includes grades for administration, climate change and energy, food and recycling, green building, student involvement, transportation, endowment transparency, investment priorities, and shareholder engagement.

Staffing

University of British Columbia has a Sustainability Coordinator Program through which existing staff members are trained to become Sustainability Coordinators in their respective departments. The coordinators job is to promote sustainable workplace practices in their departments and to communicate the universities policies, procedures, news, and events related to sustainability to their colleagues. There are currently approximately 150 staff members acting as sustainability coordinators at the university.

Funding

Harvard University established a Green Loan Fund (GLF), a \$12 million revolving loan fund that provides up-front capital for projects that reduce Harvard's environmental impact. Projects are required to pay back the loan using the resulting savings within five to ten years. Projects include high-performance campus design, operations, maintenance, and occupant behavior projects that result in significant operating cost savings. Several other universities in the US have similar loan funds, which are also known as Green Revolving Funds (GRFs).

University of California at Berkeley has a fund called The Green Initiative Fund (TGIF) that provides funding for projects that reduce UC Berkeley's negative impact on the environment. TGIF allocates funds to projects that increase the amount of renewable energy used and reduces the amount of waste created by UC Berkeley. Portions of the fund are also to support education initiatives, student aid, and internships. TGIF is supported by student fees and administered through a student-majority governance board.

UC Berkeley also has a sustainability fundraising campaign directed specifically at its alumni. Funds collected supplement those obtained from student fees.

Mount Allison University voted via a 2009 Council referendum in favour of levying a \$10 green fee aimed at reducing carbon emissions in the community, both on and off campus.

Middle Tennessee State University students voted overwhelmingly in favour of an \$8 per semester fee increase to purchase renewable energy (\$5) and fund the installation of renewable energy and energy conservation technologies on campus (\$3).

University of Illinois at Urbana-Champaign raised its existing Sustainable Campus Environment Fee from \$5 to \$14 with overwhelming student referendum approval. Funds collected through the fee support sustainable campus development, green buildings, energy efficiency, sustainable resource purchasing, and education and campus engagement in order to create a more sustainable campus environment. With the fee increase, the university now has the largest fund of this kind in the US (~\$1M/year).

4.3.3 INVESTMENTS & SHAREHOLDER ENGAGEMENT

McGill's endowment has investments in renewable energy funds, though these funds make up a very small portion of the total. McGill University also uses investment managers who consider environmental and sustainability factors, however, the degree of consideration is not known.

McGill University has a Committee on Matters of Social Responsibility. The Mandate of the Committee is:

1. To receive and review expressions of concern from the University community on matters of social responsibility with respect to University investments; and
2. Report to the Board of Governors on the nature of the social issue or issues raised and the extent of the concern about the issue among members of the University community based on the documents presented and the representations made to the Committee.

In certain cases, McGill University provides its investment managers with specific environmental and social guidelines that determine its proxy votes. However, McGill appears to struggle—alongside the majority of other institutions of higher education across North America—in integrating more strategic and coordinated efforts in the area of shareholder engagement.

4.3.4 HEALTH & WELLBEING

Health and wellbeing is reflected in many ways on campus and contributes to the overall vitality of a campus community. Fostering healthy lifestyles, healthy workplaces and providing specialized care to individuals in need on campus all contribute to the functioning of a vital, healthy community.

BEST PRACTICES IN INVESTMENT AND SHAREHOLDER ENGAGEMENT

Renewable energy investment priorities

Increasingly, strategies for campus-based investment practices are becoming opportunities for significant advancements in sustainability. As with purchasing power, institutions of higher education are significant players in the investment world. By prioritizing investment policies that support sustainability objectives, institutions are able to position themselves as serious supporters of the emerging green economy. To that end, nearly half of schools completing the College Sustainability Report Card invest part of their endowment in renewable energy funds, while an additional forty-three percent are exploring endowment investments in this area.

Community development funds

Beyond renewable energy investment priorities, institutions are investing endowment dollars for the betterment of their neighbouring communities. One in six schools completing the College Sustainability Report Card invests a portion of its endowment in community development funds.

On-campus investments

On-campus investments are another area where endowment funds can be supported. Though less of a trend than the above, eight percent of schools involved in the Campus Sustainability Report Card invest a portion of their endowment in on-campus projects to advance energy and/or water efficiency, while an additional 10 percent are exploring endowment investments in this area.

Shareholder engagement

The **University of Washington** has engaged proactively in shareholder activities by participating in letter-writing campaigns and sponsoring shareholder resolutions. The **University of Wisconsin** actively votes shareholder proxies that deal with sustainability issues and publishes both its voting priorities and guides for proxy voters

Employee and community health and happiness

McGill's Health and Wellbeing program establishes a culture of health and wellbeing at the University by creating awareness of the benefits of healthy living, promoting a safe and healthy environment, and enhancing work-life balance. McGill University has been named one of "Canada's Top 100 Employers" for 2012—the fourth consecutive year that it has been included in this select group. The University also has been named a regional winner in "Canada's 10 Most Admired Corporate Cultures of 2011" program, which acknowledges best-in-class Canadian organizations for having a culture that has helped them enhance performance and sustain a competitive advantage.²⁴ McGill helps employees balance their work and personal life with a variety of alternative work arrangements including flexible hours, shortened workweek option and reduced summer hours. The University supports employees who are new mothers with maternity and parental leave top-up payments (to 95% of salary for 20 weeks) as well as multiple onsite daycare options for employees and students with young children. McGill also provides parental leave top-up payments to employees who are adoptive parents (to 100% of salary for 10 weeks). The University invests in ongoing employee development through subsidies for tuition and professional development as well as a variety of in-house training programs. Moreover, McGill helps prepare older employees for life after work with retirement planning assistance, phased-in work options and contributions to a defined contribution pension plan. Student Life and Learning regularly surveys undergraduate and graduate students via a student satisfaction survey. McGill also has an Employee Assistance Program (EAP) that provides confidential 24/7 counselling to employees in need. A first employee engagement survey was launched in 2012.

McGill University has designated smoking areas on campus in an attempt to consolidate the smoking public. The campus upholds provincial smoking regulations requiring a minimum 9-metre distance from any building entrance.

²⁴ McGill University (2012). Retrieved March 21st, 2012 from: <http://www.mcgill.ca/archives/channels/news/203985>

Health and safety

Safety on the campuses, including security services, emergency measures and fire prevention and environmental health and safety (including but not limited to indoor air quality, hazardous waste management, ergonomics, etc.), is the domain of McGill's University Safety division. Safety and security on McGill's campuses is a topic currently being discussed by the McGill community, especially as it relates to freedom of expression and assembly.

Students also play a very active role in ensuring a safe and welcoming campus, and they provide a variety of important services. SSMU Walksafe is a student-run service that provides company and safety to students walking alone at night. Volunteers with Walksafe jackets can either be called or found walking around campus. DriveSafe is a similar service, but with cars, that is available on Friday and Saturday nights. The McGill Student Emergency Response Team is a student-run service that offers first aid for events, and is available in residence throughout the school year. The McGill Student Nightline offers general information and lends an ear for campus community members who may be experiencing trouble—all calls are anonymous and confidential. The line is run by students and open 6 p.m. to 3 a.m. throughout the school year.

Health and fitness

McGill encourages students and employees to keep fit with subsidized membership to the University's fully equipped athletics centre, which includes instructor-led classes, swimming pool, an all-season field house, skating arena and sports medicine clinic.

Healthcare

The McGill University Sexual Identity Centre (MUSIC) provides guidance in sexual orientation issues. MUSIC also works to enhance the health of the larger community through research, education, outreach and advocacy around sexual orientation issues and homophobia. McGill Student Health Service also offers free rapid HIV testing at certain points in the year for students.

BEST PRACTICES IN HEALTH AND WELLBEING

Employee and community happiness

Surveying the overall happiness of employees has been institutionalized at different higher education institutions. In February 2009, **UBC** held its first Workplace Experiences Survey. The university-wide survey allows staff and faculty to provide feedback about working, researching and teaching at UBC.

The **University of Calgary** conducted its first employee engagement survey in 2011. The survey collected feedback on how employees felt about the University, their work and opportunities for improvement. Results from the survey will be used to provide a baseline for measuring progress over the next several years and to also contribute to the University's comprehensive strategic planning process.

Smoke-free campus

There is a growing movement across campuses in Canada to institute smoking bans on campus property. Smoke-free campuses in Canada include **Dalhousie University**, and the **Northern Alberta Institute of Technology**.

4.3.5 DIVERSITY, EQUITY & ACCESSIBILITY

The McGill community is rich in cultural and ethnic diversity and strives to be welcoming and accessible to all. Below are examples of some of the actions McGill has taken to support this goal.

Committees and offices

McGill University has a Joint Board-Senate Committee on Equity that recommends university policy regarding underrepresented groups, including women, visible minorities, aboriginal peoples, and persons with disabilities. The committee reviews the recruitment and status of the underrepresented groups at the university and makes recommendations to the Senate and the Board of Governors. This committee and its subcommittees, some of which were dormant, have been increasingly active recently. In collaboration with students, the Joint Senate-Board Committee on Equity has supported a policy that assures the existence of at least one gender-neutral washroom in every newly constructed building on campus and that the university shall modify any existing single-user washrooms on campus by resigning them with gender-neutral signs and adding interior door locks. McGill University currently has a gender-neutral washroom in 21 buildings on the campuses.²⁵

McGill University also has a Social Equity and Diversity Education Office (SEDE) that is committed to fostering a "fair and inclusive environment that respects the dignity of each member of the McGill community". One of the initiatives of the SEDE office is the Safer Spaces Allies program, which fosters an opportunity for McGill community leaders who have participated in a Safer Spaces workshop on queer and transgender issues to become Safer Spaces Allies at McGill University.²⁶ In conjunction with First Peoples' House, the Office of the Dean of Students (represented by the Aboriginal Outreach Coordinator), and the Office of Sustainability, SEDE also supports the Aboriginal Sustainability Project. The project seeks to develop a broad-based educational campaign to provide Aboriginal-specific programming and

²⁵ McGill University (2012). Retrieved March 23rd, 2012 from: http://www.mcgill.ca/equity_diversity/lgbtq-resources-and-programs/washrooms

²⁶ Safer Spaces: Allies on Campus (2012). Retrieved February 17, 2012, from: http://www.mcgill.ca/equity_diversity/lgbtq-resources-and-programs/safer-spaces-allies-campus.

opportunities for bridge-building among diverse members of the McGill University community.²⁷

McGill's Office for Students with Disabilities provides academic accommodations and services for undergraduate, graduate and postdoctoral students who have a documented disability. McGill University held its first Disability Awareness Week in March 2012.

McGill University's Scholarship and Student Aid Office's (SSAO) mission is to promote accessibility, support retention and encourage scholarships through financial awards for needy and deserving students in any degree program from any geographic origin. The SSAO provides a host of information on scholarship funding, government aid programs, loans and bursaries, debt management, individualized budget counseling, and the Work Study program.²⁸

In 2009, McGill convened a Principal's Task Force on Diversity, Excellence and Community Engagement. This task force delivered recommendations to the University's decision-making bodies in 2011.

Student initiatives

Students have been active in pushing the University to more proactively address many issues related to diversity, equity and accessibility. Some examples are presented here.

The Students' Society of McGill University has an Equity Committee committed to outreach and dealing with Equity Complaints that are filed by community members. SSMU also offers a range of clubs and services committed to diversity and equity. Some of these groups are highly structured and many others are collectives, illustrating different student approaches to self-

²⁷ McGill University (2012). Retrieved February 2012 at: http://www.mcgill.ca/equity_diversity/activities/aboriginal

²⁸ McGill University (2012). Retrieved February 13th, 2012, from: <http://www.mcgill.ca/studentaid/>

governance. A small selection of some of the SSMU clubs and services includes:

- The Sexual Assault Centre of the McGill Students' Society (SACOMSS) is a student volunteer-run organization committed to supporting survivors of sexual assault; SACOMSS is currently drafting a sexual harassment policy.
- The Black Students' Network offers social and political events by and for black students, hosts discussions and provides resources.
- Queer McGill hosts social and political activities, weekly discussion groups, and also provides other resources. Queer McGill runs Queerline, a listening, referral and support line, and Allies Montréal, a high school outreach program.
- The McGill International Students' Network (MISN) is a service set up to welcome and help international students. MISN organizes language exchanges, movie nights, conferences, and reduced-rate trips.

Beyond the campuses

For reasons related to human rights and social responsibility, McGill's Board of Governors decided to divest stocks of any companies doing business in Burma in 2006.²⁹ Procurement Services upholds this boycott and has stipulated that the University's selected supplier of uniforms must certify, in writing, that their products are free from any and all materials that may have been made in Myanmar.

The Students' Society of McGill University also offers a range of clubs and services promoting accessibility, equity and integration of students into the Montreal community, including:

- I*Create Club aiming to promote creativity through arts and crafts within hospitals around the Montréal area.

²⁹ Retrieved March 21st, 2012 from: http://www.cautbulletin.ca/en_article.asp?SectionID=80&SectionName=News&VolID=16&VolumeName=No%205&VolumeStartDate=5/1/2006&EditionID=4&EditionName=Vol%2053&EditionStartDate=1/1/2006&ArticleID=46

- Beyond Me provides mentoring programs for children and teenagers with disabilities.
- Getting off the Streets (GOTS) includes a group of students involved in the homeless community of Montréal and provides volunteer opportunities with homeless shelters, soup kitchens, and homelessness initiatives.
- Compassion United provides opportunities to student artists wishing to share art and entertainment with marginal people of Montréal.
- Medlife is a charity that helps poor families live healthier lives.
- Community Gospel Choir practices singing a variety of gospel songs with people from all backgrounds.
- The Fridge Door Galley is a student run organization that celebrates student curated art.

4.3.6 PARTNERSHIPS

McGill does not address questions of sustainability in isolation. There are numerous linkages between the McGill community and local, regional, national and international organizations and projects. It is important to acknowledge, however, that McGill's history and position as a primarily anglophone university can be an impediment to full integration of partnerships within Montreal and Quebec, as can the fact that a high proportion of staff and students are from outside of Quebec.

McGill has a partnership with the City of Montreal; the University has been a partner on the City of Montréal's Sustainable Development Plan since the creation of the first plan in 2005. Moreover, McGill University has been recognized twice for its sustainability efforts by the city at its annual Gala on Environment and Sustainability, for the Minimum Cost Housing Group's Edible Campus project in 2010, and the Greening the Lower Campus project in 2011. McGill University has also partnered with the City of Montreal through its eco-quartier program, a program to promote environmental action by the City's residents. Montreal is also a recognized Regional Center of Expertise on Education for Sustainable Development by the United Nations University Institute for Advanced Studies; McGill played a part in its creation and contributes to its activities.

BEST PRACTICES IN DIVERSITY, EQUITY AND ACCESSIBILITY

Diversity and equity

The **University of Winnipeg's** Sustainability Office has developed three white papers summarizing models of social sustainability, indicators, aspects, and consultation processes representing best practices in other regions. An outline and work plan for establishing a vision statement on social sustainability, and key goals for a social sustainability policy, has been developed. **UBC** has set a goal in its UBC Plan to work with community based organizations to foster a deeper understanding of how social sustainability can be achieved locally and globally.

Accessibility

Seventy-five of the STARS-rated institutions offer housing options to accommodate the special needs of transgender and transitioning students (either as a matter of policy or as standard practice). The **University of British Columbia's** Student Housing accommodates students on a case-by-case basis. Student Housing has a non-discrimination clause in its assignment policy and contracts with its residents.

The **UBC** Board of Governors is committed to creating more favourable, more affordable, and more sustainable living and working conditions for faculty, students and staff. The UBC Vancouver Housing Action Plan (HAP) will address issues of housing affordability and choice on campus for faculty, students and staff, and will guide the Board of Governors in future housing-related decisions.

At the provincial level, McGill University is an active member of the Conférence des recteurs et des principaux des universités du Québec (CREPUQ) network working group on the environment, helping to establish programs, best practices, and collaborative relationships with provincial agencies such as for Education and Sustainable Development (MELS and

MDDEPQ, respectively) and non-governmental associations-NGOs (including the Sierra Youth Coalition-SYC, the ECPAR sustainable purchasing group, and the Quebec Association for Education Related to Environment-AQPERE).

McGill University has worked to coordinate greening projects in conjunction with the community including cleaning the Milton-Parc area and working to design the Tournesol composters installed in Jeanne-Mance Park. McGill University has also partnered with Voyagez Futé for various transportation projects.

McGill University is a member of the Canadian Alliance of College and University Sustainability Professionals, the Northeast Campus Sustainability Consortium (NECSC), the International Association of Universities (the UNESCO-based worldwide association), Universitas 21 (a network of 23 leading research intensive universities), and AASHE. Student groups at McGill University have also partnered with ENvironnement JEUnesse (ENJEU), a student group focussed on improving campus environments and the Sierra Youth Coalition (SYC, a youth organization helping to provide resources to and create linkages between campus sustainability initiatives throughout the country.

McGill University groups are also connected to regional and national university greening campaigns including the Energy Action Coalition, the Canadian Youth Climate Coalition, the Climate and Sustainability Advocacy Project.

The Community Action Toolkit supports McGill undergraduates in volunteering partnership initiatives on custom-made projects provided by community-based, social justice and sustainability organization and NGOs around Montreal and from within McGill. In addition, McGill's ENVR 401 – Environmental Research course (offered by the McGill School of Environment) links professors, research, students, learning and community improvement efforts by fostering interdisciplinary teams working on real-world research involving social, ethical and environmental impact assessment and dissemination of the results to the research community and to the people who are impacted.

BEST PRACTICES IN PARTNERSHIPS

Oberlin College is one of the pioneers in the field of community partnership and integration. The Oberlin Project sees the college and the town as an integrated entity, and aims to make both more prosperous, resilient and sustainable. Notable are goals to eliminate carbon emissions, revitalize the local economy, and restore local agriculture, food supply and forestry.

By signing an official protocol of cooperation last month, the **University of Victoria** and the City of Victoria have formalized their mutual interest in research of benefit to both entities. The university and the city have forged a strong partnership agreement. The protocol establishes a formalized framework for integrating practical civic expertise with theoretical knowledge, and will help to enhance future collaborations on sustainability and community-engaged research. Projects carried out between the city and university include: community mapping of arts and culture, social, green and neighbourhood initiatives; food security; homelessness and housing; micro-lending; and, research supporting harm reduction and safe injection sites.

In December 2006, Mayor Michael Bloomberg challenged New Yorkers to generate ideas for achieving 10 key goals for the city's sustainable future. Focussing on the five dimensions of the city's environment — land, air, water, energy, and transportation — the plan is intended to become a model for cities in the 21st century. While New York City as a whole is targeting a 30% reduction in greenhouse gas emissions by 2030, **New York University (NYU)** is acting as a Challenge Partner by meeting the 30% reduction goal in one decade, by 2017. NYU's Community Fund gives grants to not-for-profits throughout New York's five boroughs that range from providing immigrant social services to environmental opportunities for children.

5. BENCHMARKING MCGILL'S SUSTAINABILITY PERFORMANCE

The following section puts the McGill community's current sustainability initiatives in context by offering an analysis of how activities at McGill compare to other institutions of higher education across North America. In order to complete this benchmarking analysis, McGill's sustainability performance was aligned alongside other institutions on a number of indicators where adequate and comparable data were available to identify where McGill is a leader of the pack, where McGill is in the middle, and where McGill may be lagging behind its peers.

Benchmarking was based primarily on a quantitative analysis of data reported through the Sustainability Tracking, Assessment and Rating System (STARS) and the College Sustainability Report Card (CSRC). A qualitative assessment of McGill's current initiatives and the best practices discussed above was also done to create a more accurate and complete picture of McGill's actual sustainability performance relative to peer institutions. The data available from STARS and CSRC represent primarily North American higher education institutions, therefore this benchmarking analysis is limited to the North American context.

5.1. BENCHMARKING BACKGROUND

In the last 10 years, there have been three significant efforts in North America to benchmark universities in terms of their commitment to and performance on sustainability. These include the Campus Sustainability Assessment Framework (CSAF), the Sustainable Endowments Institute's College Sustainability Report Card (CSRC), and the Association for the Advancement of Sustainability in Higher Education's (AASHE) Sustainability Tracking, Assessment and Rating System (STARS).

STARS has become the dominant system in North America, with 122 institutions reporting, with 23 from Canada including McGill University, Western University, UBC and Concordia. At one point, CSAF was used by upwards of 30 universities in Canada, but its use has declined in the past few

years as STARS gained momentum across North America. Due to the lack of public and recent CSAF information, it has not been included in this benchmarking assessment. While data from the Sustainable Endowment Institute's CSRC are included in this analysis, data collection for this benchmarking program has effectively terminated as of 2012.

5.2. DATA LIMITATIONS

Of available sustainability metrics, STARS offers the most transparent system for the comparison and benchmarking of institutional leadership in specific areas of sustainability. Though the STARS and CSRC public reporting templates provide a tremendous mechanism for comparison and benchmarking, these two systems each have limitations.

The main limitation of STARS is that the indicators do not provide a mechanism for credit in areas where either a) flawed indicator system ex. the institution has taken steps beyond the indicator threshold or prior to the benchmark year; or b) for an institution to get credit where a STARS indicator may not even exist. For example, an institution may get full points for an indicator in one year and in subsequent years make efforts that go beyond in that specific area. These efforts are not clearly recognized within the STARS framework except in rare circumstances where an innovation credit could be earned.

The CSRC consists of surveys including "yes" or "no" type questions and does not evaluate the actual performance of the institution. For example, the CSRC survey asks whether a GHG inventory has been completed, but does not evaluate the effectiveness of the efforts of the institution to reduce GHG emissions, essentially offering only a snapshot of an institution. Critics also argued that the quality of the data was not rigorous (ex. obtained not only through official university channels but through unverified sources) and that grade assessments were subjective and lacked transparency; many universities refused to participate in the survey as a result.

Another limitation to both the STARS and CSRC assessments are that they are both limited to a pre-defined set of indicators, offering little flexibility to

customization for the priorities and relevance to a particular institution’s day-to-day realities. Though the STARS framework does allow institutions to add comments or note that it is not pursuing a particular indicator, there is no mechanism to ‘add an indicator’ where one may be currently missing nor any way (aside from the limited innovation credits in STARS) to be recognized for sustainability efforts that go unmeasured in either STARS or CSRC.

The largest problem with all current sustainability assessment systems includes excessive focus on outputs rather than outcomes. This is a topic outside the scope of this document; for present purposes, despite these limitations, employing a combination of both these tools with a qualitative assessment of best practices produces a useful snapshot of where McGill stands among its peers with respect to sustainability initiatives.

Three of the categories discussed above (partnerships, health & wellbeing, and diversity, equity & accessibility) were not benchmarked due to a lack of data.

Note also that engagement and planning are included as categories in the benchmarking although throughout the report they have been addressed as cross-cutting themes rather than in individual sections.

5.3. COMPARATOR UNIVERSITIES

As identified in section 1.2 (Report Methodology), this analysis contrasts McGill University with three groups of institutions: McGill’s self-identified comparators, across-the-board sustainability leaders as identified by STARS and/or CSRC, and institutions that demonstrate particular best practices relevant to the McGill context.

The lists of comparator institutions, other top-ranking institutions and best practices are not exhaustive. Their intent is to help situate McGill in the broader context of campus sustainability and to provide inspiration and food for thought on opportunities for sustainability innovation at McGill. A list of these institutions is included in Appendix A.

5.4. BENCHMARKING RESULTS

Table 7: McGill’s sustainability performance relative to peers and best practices.

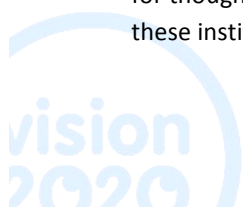
Overview of McGill Sustainability Benchmarking Assessment	
Leading	Governance Engagement Dining and Food Service Greening Grounds
In the middle of the pack	Curriculum and Research Transportation Waste Diversion Procurement
Falling behind	Green Building Energy Water Conservation Planning

** Note that the comparisons made in this section are relative to other institutions, not an absolute ideal, and should be interpreted in this context.*

WHERE MCGILL IS A LEADER OF THE PACK

In overall standings, McGill has a commendable performance when ranked or compared against other institutions. In many areas, it keeps up to North American sustainability leaders, such as the University of British Columbia.

For overall performance in both STARS and CSRC, McGill is in the top tier when analyzed beside its comparator institutions in both Canada and the US. Comparator institutions with higher scores include University of British Columbia, University of Toronto, University of Minnesota, University of Wisconsin and University of Washington.



Sustainability in campus **governance** is one area where McGill excels. Of the STARS rated comparator institutions, McGill has the top collective score for Planning, Administration and Engagement and scores 4 out of 5 in the Governance section of the CSRC. This rating is primarily a result of efforts at McGill in the areas of integrating sustainability efforts within the administration, as well as in efforts at **engaging** the student body in the advancement of sustainability. McGill's Sustainability Projects Fund is also a pivotal tool for engaging the McGill community in sustainability efforts while making progress toward sustainability goals.

In the area of sustainable **investments**, McGill is leading its comparator universities with respect to endowment transparency and investments. The level of information that is made available to the campus community and the public provides a high degree of transparency and accountability on its investment practices. McGill's multi-stakeholder Committee to Advise on Matters of Social Responsibility and its policy on socially responsible investment are examples to be modelled for other universities looking to integrate an ethical direction and guidelines into direct investment decisions made by the Board of Governors. Campuses leading in this area are starting to implement ability for donors to direct their gifts to an investment fund that integrates social and environment sustainability factors.

The 2011 College Sustainability Report Card reports that seventy percent of higher education institutions have **campus community gardens and farms** from which dining halls can source food. McGill's efforts to source food from the Macdonald campus are a model that stands out among its peer group. In addition, ninety-eight percent of schools reporting in the CSRC devote a portion of their food budgets to buying from local farms and producers. Here again, McGill emerges along with UBC, the University of Toronto, Queens and Rutgers as leaders who have all spent over forty percent of their food and dining budget on local products.

McGill has taken leadership in **greening its grounds**; McGill's award-winning Greening McGill project on McTavish Street supports and strengthens community vitality through increased walkability, improved air quality,

improved storm water management and lessened heat island effect through increased permeable surface area.

WHERE MCGILL IS RUNNING WITH THE CROWD

McGill is at the head of its peer groups in efforts to integrate sustainability in **curriculum and research** on campus. The percentage of faculty involved in sustainability research, for example, is higher than many of its peers but falls significantly below campuses that are perceived as the leaders in this area. Colorado State University, in addition to the high percentage of faculty involved in sustainability research, aims to graduate one hundred percent of its students with introductory knowledge into sustainability.

McGill has achieved one of the highest non-vehicular **transportation** rates, at eighty-four percent of all comparator institutions. This achievement is likely due largely to the urbanity of the downtown campus and its centrality to student housing and transit services. McGill is ideally situated to achieve a near one hundred percent non-vehicular transit rate. However, McGill, unlike many campuses across North America, does not offer reduced public transit fares for either students or staff, perhaps indicating that this "best practice" is not needed or appropriate here..

McGill's recent purchase of "Big Hanna" has raised the profile on opportunities to reduce campus-based compostable waste production. This purchase means that McGill is now home to North America's largest in-vessel composter. It should help improve the campuses **waste diversion** rates, though there is certainly additional room for improvement in waste reduction and waste diversion. Western University has emphasized waste diversion on their campus and in recent years has achieved upwards of seventy percent diversion rates. Royal Roads University has connected the entire campus to composting and aims to recycle and compost all waste on campus.

Institutions of higher education have tremendous **purchasing** power in the goods and services that they **procure**. McGill University needs to finalize and implement its sustainable purchasing policy if it wants to catch up to institutions that are leading in this area.

Shareholder engagement is an area where most campuses across North America are struggling to identify effective engagement strategies and processes. The average grade, for example, in the CSRC was a D (which was McGill's grade). The active role of multi-stakeholder advisory committees, at the University of Pennsylvania and the University of Toronto for example, can elevate performance in this area. These committees provide recommendations to and in some places directly guide proxy voting on matters of environmental and social issues at shareholder meetings. The University of Wisconsin, is a clear leader in this area by actively voting shareholder proxies that deal with sustainability issues.³⁰

WHERE MCGILL MAY BE FALLING BEHIND

McGill's overall operations scores, in STARS, were below average when placed alongside comparator institutions. This primarily is as a result of poor scoring in a few areas, such as green building and retrofits as well as in energy (GHG reductions and renewable energy production) and water conservation.

In the field of **energy**, both UBC and the University of Calgary are on track to achieve Kyoto-level targets for their own institutions, in addition to establishing concrete targets for short, medium and long-term GHG reductions. Despite McGill having completed a GHG emissions inventory and having reduced emissions by 5.66% between 2002-3 and 2010,³¹ McGill has yet to establish medium and long-term GHG reduction targets. UBC has a long-term goal of becoming a net positive energy producer by 2050 and Royal Roads University made and met a commitment to be carbon neutral by 2010. McGill University is ideally positioned to reduce its overall GHG emissions and potentially in the long-term transition to a carbon neutral campus because the GHG intensity of electricity in Quebec is the lowest in the country, and because the main campus is urban with access to an excellent transit system.

³⁰ *UW System Trust Funds: Voting of 2011 non-routine proxy proposals (2011)*. Retrieved February 2012 at: <http://www.wisconsin.edu/tfunds/ProxyPolicy2011.pdf>

³¹ McGill University Energy Management Plan (2010). Retrieved March 21st, 2012 from: https://secureweb.mcgill.ca/facilities/sites/mcgill.ca/facilities/files/McGill_Energy_Management_Plan.pdf

More than half of the schools reporting through CSRC produce renewable energy on campus.³² McGill does produce renewable energy on campus, but at levels dramatically lower than those leading in this field. Despite some possible emerging opportunities in this area, production on campus is experimental or associated with research projects and represents less than one percent of total electricity consumption.

Many university and college campuses have recognized the multiple benefits of owning, leasing, constructing and retrofitting **sustainable buildings**. A growing number of institutions have adopted green building standards, which in North America are, based on Leadership in Energy and Environmental Design (LEED) standards. Leaders in this field are adopting a standard or target of achieving LEED gold, most have established silver standard as their minimum objective. Seventy-nine percent of schools reporting in the CSRC have adopted campus-wide green building policies that specify certain minimum performance levels such as achieving LEED certification on new construction.³³ Several campuses are pushing the commonly adopted LEED Silver standard to achieve high honours in building design. In Canada, both the University of Calgary, Algonquin College and UBC have LEED Platinum projects and UBC also has a Living Building Challenge project (beyond LEED Platinum), an emerging building standard that pushes design beyond any current LEED rating. UBC's CIRS building is the first carbon neutral building among Canadian universities, and billed as the greenest building in the country.

For institutions, like McGill, however where new building opportunities are limited, performance in building retrofits offers more possibilities for improved sustainability performance. Harvard has taken their commitment to green building and applied significant energy towards green retrofits of heritage buildings through the LEED for Existing Buildings, Operations and Maintenance (EBOM) for their existing building stock. For campuses with significant heritage buildings, this is an area of tremendous possible gains.

³² *The College Sustainability Report Card (2012)*. Retrieved February 2012, from: <http://www.greenreportcard.org/report-card-2011/categories/climate-change-energy>

³³ *The College Sustainability Report Card (2011)*. Retrieved February 2012 from: <http://www.greenreportcard.org/report-card-2011/categories/green-building>

McGill does have informal policies suggesting new buildings need to be a minimum LEED silver and that renovations need to conform to LEED EBOM credits. With the formal establishment of these policies (while pushing McGill's new construction policy from LEED silver to a gold or platinum level) and the establishment of a comprehensive retrofit plan to update heritage buildings to green standards, McGill could join the rest of the leaders in this area.

In most settings, **water conservation**, like energy efficiency programs, offers an opportunity for operational cost savings. The fact that McGill does not pay for its water may serve as a disincentive to measures that will advance water conservation, including water metering. The University of North Carolina at Chapel Hill, Queen's, and the University of Calgary among others have introduced water metering in all of their buildings. McGill has implemented a number of water conservation programs; however, until water metering is available in all buildings at McGill, the success and impact of these initiatives will be difficult to monitor.

Despite a very high overall result in the areas of Planning, Administration and Engagement, McGill is slightly behind many campuses in the areas of **coordination and planning**. Despite the inclusion of environmental sustainability in the campus master plan, more thorough integration of the social and economic imperatives of sustainability is needed. The current plans to develop a sustainability vision, goals and action plan will go a long way in improving McGill's performance in this area.

This analysis provides a quick snapshot into how McGill's current initiatives situate McGill in the landscape of campus sustainability leaders. As institutions across North America raise the profile of sustainability efforts and contemplate the future of universities, McGill has tremendous opportunity to sustain its leadership in this area and propel itself to the foreground of campus sustainability.

6. APPENDICES

APPENDIX A: COMPARATOR INSTITUTIONS

Table 1: McGill's self-identified comparator institutions (asterisk denotes strong performance in Sustainability Tracking, Assessment, & Rating System (STARS) and/or Campus Sustainability Report Card (CSRC))

U15 Universities ³⁴	Benchmarking Data
University of British Columbia*	STARS and CSRC
University of Alberta	CSRC
University of Calgary	STARS and CSRC
Western University	STARS
McMaster University	CSRC
University of Waterloo	CSRC
University of Toronto*	CSRC
Queen's University	CSRC
University of Ottawa	STARS
Université de Montréal	<i>no data available</i>
Université Laval	CSRC
University of Manitoba	CSRC
University of Saskatchewan	STARS and CSRC
Dalhousie University	STARS and CSRC

AAU Aspirational Universities ³⁵	Benchmarking Data
Ohio State University	CSRC
University of California, Berkeley	<i>no data available</i>
University of California, Los Angeles	STARS and CSRC
University of Illinois	<i>no data available</i>
University of Michigan	CSRC
University of Minnesota*	STARS and CSRC
University of Texas	STARS and CSRC
University of Washington	CSRC
University Wisconsin*	CSRC

³⁴ Group of fifteen research-intensive universities in Canada

³⁵ Aspirational list of McGill comparators from the Association of American Universities

AAU Empirical Universities³⁶

Indiana University	STARS and CSRC
Rutgers-New Brunswick	CSRC
University of Arizona	CSRC
University of Colorado*	STARS and CSRC
University of Iowa	CSRC
University of Missouri	<i>no data available</i>
University of North Carolina	STARS and CSRC
University of Pittsburgh	CSRC
University of Virginia	CSRC

³⁶ Empirical list of McGill comparators from the Association of American Universities

Table 2: Other Sustainability Leaders (not included in McGill's comparator list, but with high rating in STARS)

University
Yale
Massachusetts Institute of Technology
Harvard
Oberlin College
Emory University
California State University—Monterey Bay
Cornell University
Duke University
Ithaca College
Oregon State University
Portland State University
University of New Hampshire
University of South Florida

Table 3: Institutions cited in this report as having relevant best practices (by topic area)

Area of Best Practice	Institution
Teaching and Research	Arizona State University Colorado State University Concordia University Dalhousie University Harvard University Lakehead University Massachusetts Institute of Technology Oberlin College Oregon State University University of Oregon Prescott College University of British Columbia University of California University of Colorado University of Minnesota University of Wisconsin Western University Yale University
Green Building	Cambrian College Simon Fraser University of British Columbia
Retrofit Programs	Algonquin College Harvard University of British Columbia
GHG Reduction Targets	Colorado State University Cornell
Renewable Energy Generation	University of British Columbia University of Maine
Transportation	Colorado State University University of British Columbia University of Alberta University of British Columbia University of Victoria
Grounds	Dalhousie University of Alberta University of Calgary University of North Carolina - Chapel Hill

Food and Dining	Rutgers University University of California, San Diego University of California, Los Angeles University of British Columbia
Water Conservation	Oberlin College Queen's Royal Roads St. Mary's University Université de Sherbrooke University of British Columbia University of Colorado University of North Carolina University of Ottawa University of Washington University of Winnipeg University of Wisconsin Vancouver Island University
Waste Reduction	Butte College Royal Roads Western
Procurement	Dalhousie Queen's Royal Roads Stanford University of British Columbia
Governance	Harvard University Middle Tennessee State University Mount Allison University University of Alberta University of British Columbia University of Calgary University of California at Berkeley University of Illinois at Urbana-Champaign University of Pittsburgh University of Winnipeg
Shareholder Engagement	University of Washington University of Wisconsin
Health and Well-being	Dalhousie Northern Alberta Institute of Technology University of British Columbia University of Calgary
Diversity and Equity	University of British Columbia University of Winnipeg
Accessibility	University of British Columbia
Partnerships	New York University Royal Roads University of Victoria

APPENDIX B: SITUATIONAL ANALYSIS CONTRIBUTORS & REVIEWERS

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APPENDIX C: LISTING OF FACULTIES, SCHOOLS, CENTRES, INSTITUTES AT MCGILL UNIVERSITY

Faculties

Faculties are the largest of largest grouping of academic focus areas. Within departments there may be a number of departments, concentration areas, schools, institutes, and research centres. The composition of these constituent

parts varies greatly between faculties at McGill University, largely at the discretion of the faculties. In many cases, departments are smaller units that comprise the faculties.

- Agricultural and Environmental Sciences
- Arts
- Continuing Studies (stand-alone unit with near-faculty status)
- Dentistry
- Education
- Engineering
- Law
- Management
- Medicine
- Music
- Religious Studies
- Sciences

Schools (including faculty affiliations)

- Architecture (Engineering)
- Communication sciences and disorders (Medicine)
- Computer Science (Science)
- Dietetics and Human Nutrition (Agricultural and Environmental Sciences)
- Environment (Agricultural and Environmental Sciences, Arts, Science)
- Information Studies (Education)
- Nursing (Medicine)
- Physical and occupational therapy (Medicine)
- Social Work (Arts)
- Urban Planning (Engineering)

Institutes and Centres

Institutes and centres have a particular focus, and act as points of connection for researchers who are either in the same department, different departments, or different faculties, in some cases.

Mostly complete listing:

[Brace Centre for Water Resources Management](#)
[Indigenous Peoples' Nutrition and Environment, Centre for](#)
[Institute of Parasitology Burney Centre](#)
[East Asian Research, Centre for](#)
[Gender, Sexuality and Feminist Studies, Institute for](#)
[Indian Ocean World Centre](#)
[International Peace and Security Studies, Centre for](#)
[Alan Edwards Centre for Research on Pain](#)
[Cell Imaging and Analysis Network](#)
[High Energy Physics/Astrophysics](#)
[Intelligent Machines, Centre for](#)
[Interdisciplinary Research in Music Media and Technology, Centre for](#)
[Research on Language, Mind and Brain, Centre for](#)
[Self-Assembled Chemical Structures, Centre for](#)
[The Physics of Materials, Centre for](#)
[Trace Element Analysis, Centre for](#)
[Developmental Biology Research Initiative](#)
[Global Environmental and Climate Change Centre \(GEC3\)](#)
[Sciences mathématiques, Institut des](#)
[Limnology Research Centre](#)
[Bioinformatics, McGill Centre for](#)
[Research on Pain, McGill Centre for](#)
[McGill Institute for Advanced Materials](#)
[Polymer McGill Research Centre](#)
[Business & Management Research Centre \(BMRC\)](#)
[Centre for Strategy Studies in Organizations \(CSSO\)](#)
[Desmarais Global Finance Research Centre \(DGFR\)](#)
[Dobson Centre for Entrepreneurial Studies](#)
[International Business Families Centre](#)
[Management Science Research Centre \(MSRC\)](#)
[Marcel Desautels Institute for Integrated Management \(MDIIM\)](#)
[McGill Institute for Global Food Security](#)

[McGill Institute of Marketing \(MIM\)](#)
[McGill World Platform for Health and Economic Convergence \(MWP\)](#)
[NSERC-CREATE Program on Healthcare Operations and Information Management](#)
[Program for International Competitiveness](#)
[Centre for Advanced Systems and Technologies in Communications \(SYTACom\)](#)
[Centre for Intelligent Machines](#)
[McGill Metals Processing Centre](#)
[McGill Institute for Advanced Materials](#)
[McGill Institute for Aerospace Engineering](#)
[Institute for Sustainability in Engineering and Design](#)
[Centre for Interdisciplinary Research in Music Media and Technology](#)
[Institute of Air & Space Law](#)
[Institute of Comparative Law](#)
[Centre for Human Rights and Legal Pluralism](#)
[Centre for Intellectual Property Policy](#)
[Quebec Research Centre of Private and Comparative Law](#)
[Centre for Bone and Periodontal Research](#)
[Centre for Nursing Research](#)
[Centre for Research in Neuroscience](#)
[Centre for Research on Language, Mind and Brain](#)
[Centre for the Study of Host Resistance](#)
[McGill AIDS Centre](#)
[McGill Cancer Centre](#)
[McGill Centre for Bioinformatics](#)
[McGill Centre for Studies in Aging](#)
[McGill Centre for Translational Research in Cancer](#)
[McGill University and Génome Québec Innovation Centre](#)
[Institute of Health and Social Policy](#)
[Montreal Neurological Institute](#)
[International Centre for Youth Gambling Problems and High-Risk Behaviors](#)
[Pulp and Paper Research Centre](#)
[Quebec Centre for Biodiversity Science](#)
[Research on Children and Families, Centre for](#)
[Study of Democratic Citizenship, Centre for the](#)
[Islamic Studies, Institute of](#)
[McGill Institute for the Study of Canada](#)
[Study of International Development, Institute for the](#)
[Media@McGill](#)
[Society, Technology and Development, Centre for \(STANDD\)](#)

APPENDIX D: SUSTAINABILITY AS A FOCUS VS. VALUE IN RESEARCH

When considering sustainability in research, a distinction can be made between sustainability as a focus area and as a cross-cutting value.

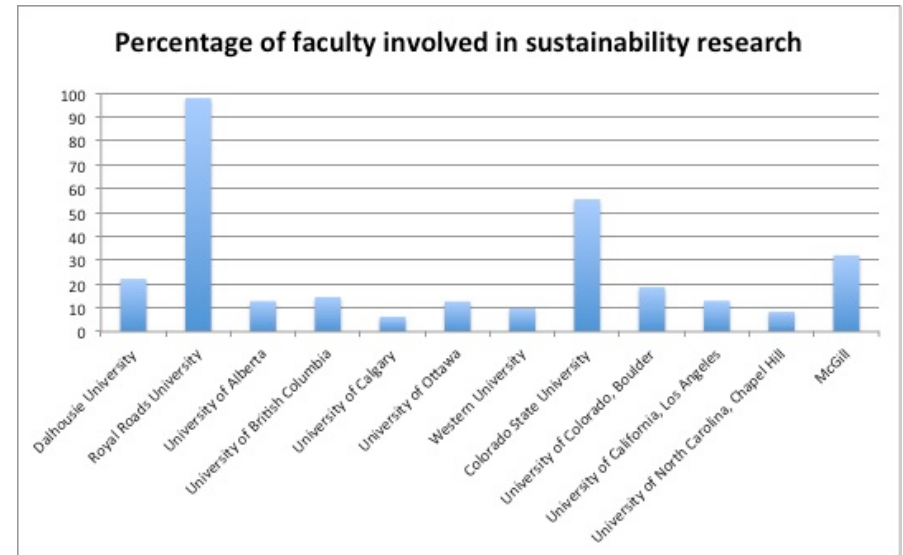
In relation to the definition of sustainability-focused research described in this document, there is a spectrum of how directly or indirectly research is focusing on sustainability. The more directly-focused research may involve researchers grappling with problems like the limits of growth of human systems, resilience of living systems, or contemporary socio-environmental problems. Less closely-focused research looks at problems not commonly conceived as sustainability challenges, but still relevant to questions of sustainability.

It should be noted that in discussions regarding sustainability as a focus or a value, it is difficult to identify these characteristics. Research teams may choose to identify with the concept of sustainability, either in their name or description, or they may not. Even among those who do not, some will use language that reflects the concept. This range of self-identification makes it difficult at first glance to appraise how focused given research is on sustainability, and how much sustainability is a value in what they do.

Dialogue with those who are doing research often helps to qualify where teams are on the spectra discussed here and shown in the table below.

	Directly vs. Indirectly focused on sustainability	Sustainability as a value vs. Not as a value	Self-identify vs. Do not self-identify
Research Team X (illustrative example, not a real team)	Directly focused on sustainability by looking at the interplay of poverty and natural resource depletion	Very hard to tell from website, but some researchers used language that indicated it did, including “adaptive”, “complex”, “systems dynamics” and “feedback cycles”	Website and description do not self-identify. Some researchers self-identify in conversation while some others strongly oppose being associated with sustainability.

The following figure shows data from the 2011 Campus Sustainability Report Card, and illustrates how complexities in identifying sustainability research are problematic when making inter-university comparisons. The data from McGill were compiled through a search of key-words in descriptions of ongoing research. Methodology for data from other universities is unknown.³⁷



How sustainability can simultaneously be a focus and a value of research

Most centres and institutes have researchers working at a variety of levels of detail. Some team members may be looking at the big picture and doing work that approaches research problems holistically. Simultaneously, there may be other team members working on a particular sub-section of the larger problem, and may be more reductionist in the way they conduct their research. Teams that orient their research toward contemporary problems found in the complex systems in which we live are acting with an understanding that sustainability is something they value, though they may or

³⁷ Campus Sustainability Report Card (2011)

may not name it, and it may or may not be a direct focus of their individual research or that of their group.

The sense from discussions with McGill professors on this subject, including 18 department chairs, is that research areas often interrelate and work together as a living organism of intellectual and practical exchange. This is not at all limited to the confines of McGill, as the nature of academic exchange is that it is highly inter-institutional. Personal curiosities and values factor into how researchers go about the process of problem selection. Sustainability, as seen in this document, has been identified by several faculty members as aligning with many of the problems that researchers select for study at McGill. These problems are often selected due to the curiosities and values of individual researchers. The extent to which available funding influences the direction of research interests was not studied, but it is a factor.

Sustainability problems get worked on in the research community when people have mutual understandings and points of reference and they are able to see that they are tackling selected problems in unison, with a common personal grounding in what is important but acknowledging that individual curiosities differ greatly around the campus, and the worldwide academic community.

The conditions that breed collaboration by allowing people to find common ground and see commonalities in research interests are not always there and a few reasons for that are presented here:

- **No time:** Professors tend to become very busy in their work and have little time to pursue sustainability-related projects on the margins of their primary research area.
- **Not where the money is:** This has been cited as a potential barrier and a major concern for researchers wishing to do interdisciplinary and applied research in general.
- **Not interesting:** The important issues may not be framed in a way that is intellectually stimulating. For instance, some researchers may associate sustainability with, for example, a small recycling initiative on campus rather than a rigorous field for inquiry.

- **Lack of facilitation:** Facilitated connection-making between researchers who are working on related issues but do not normally come in contact with one another enhances opportunities for innovative research.