



CONCORDIA CAMPUS **SUSTAINABILITY** ASSESSMENT



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FOREWORD

Incorporating and integrating sustainability within an organisation is about change – changing processes, behaviours, and priorities. For effective change to happen, it is essential to have a comprehensive understanding of our starting point and our progress.

In 2003, Concordia University underwent its first sustainability assessment. At that time, the Concordia Campus Sustainability Assessment (CCSA) was a student-led initiative, completed with the cooperation of the university administration. One of the first CCSA's accomplishments was the creation of two full-time, permanent positions (the Environmental Coordinator and the Sustainability Coordinator) within Environmental Health & Safety dedicated to the advancement of sustainability at Concordia.

The CCSA now examines all facets of university activities including teaching, research and operations. The assessment highlights those areas in which the university is leading and those which require change to further sustainability. For benchmarking purposes, we include higher education best practices to help demonstrate where we want to be. Each report outlines recommendations on how Concordia can better incorporate sustainability principles, be they social, economic or environmental, into existing processes. With each CCSA, we have evaluated the progress of Concordia's sustainability initiatives and have recommended new strategies to enhance sustainability.

After three generations of student-led CCSA reports, Concordia has now integrated the CCSA into the university's operations. This fourth report can be described as a transition report, in which we work to combine the knowledge and experience of sustainability professionals and community stakeholders with the strategic planning process led by Concordia's decision-makers. This current sustainability assessment will serve as a guiding document for the recently-created Sustainability Governance Framework and its sub-committees. Not only will it provide a view of the university's current situation, it will initiate conversations on our collective vision of sustainability for the future.

Serving as a catalyst, this report has already served us well by engaging stakeholders and initiating dialogues around the challenges and opportunities of strategically implementing sustainability at Concordia. As both a pioneer in sustainability and a vibrant innovation hub for society, Concordia University is in a position to lead the way in tackling current and future environmental, social and economic challenges.

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Concordia University
March 2015

ACKNOWLEDGEMENT

The fourth Concordia Campus Sustainability Assessment (CCSA) report was created through the collaboration of sustainability stakeholders of Concordia's community. This report would not have been possible without the work, dedication, and patience of the section-specific advisors who participated in the creation of the CCSA recommendations.

Finally, the Concordia Campus Sustainability Assessment benefited from the guidance of the CCSA Advisory Committee:

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INTRODUCTION

As a dynamic nexus, universities connect with different facets of society and their activities cover a wide spectrum of disciplines - administration, operations, education, and research. Through these connections, universities interact with and strengthen communities and contribute to the overall development of society. Universities necessitate a substantial amount of resources and there is an obligation to ensure that these resources are used in a sustainable manner for both the long-term development of universities and for the well-being of society.

Increasing sustainability brings many benefits to a university, such as:

- **Social benefits**
 - o Increased productivity through improved well-being
 - o Increased employee attraction and retention
 - o Strengthened community ties
- **Environmental benefits**
 - o Reduced greenhouse gas emissions
 - o Reduced natural resources consumption
- **Financial benefits**
 - o Reduced costs associated with energy and water consumption
 - o Reduced costs associated with waste disposal and recycling taxes
- **Reputational benefits**
 - o Enhanced marketability towards potential students, staff, and faculty members at both the regional and the international level

Sustainability-related initiatives are an important part of Concordia University: from rethinking the way waste are managed, to actively participating in raising sustainability awareness in curriculum, and working toward better social equity by supporting culturally-diverse student organisations.

Purpose

The purpose of the CCSA report is to assess Concordia's current sustainability situation and propose recommendations to further sustainability at the University. Each generation of the report builds in part on the previous one while also including new elements representing the evolving reality of sustainability at Concordia University.

The multi-stakeholder aspect of creating the CCSA report is an important sustainability action in and of itself as it reaches out to Concordia's community and incorporates the resulting suggestions and input in the various recommendations. This process ensures that the recommendations are more complete and representative of our community. The recommendations also have a higher chance of successful implementation and continuity as Concordians are directly connected through a sense of ownership over these recommendations.

The current CCSA report is designed as a guiding and advising document for Concordia decision-makers. It will facilitate high-level discussions on the implementation of sustainability in the management and operations of the University.

Methodology

The fourth CCSA report is based on the following sources of information:

- Concordia University 2012 STARS assessment's results
- Multi-stakeholder consultation with topics advisors from Concordia's community
- The current governmental plans, strategies, and regulations (municipal, provincial, federal)
- Best practices from other North American universities with a Canadian focus

2012 – STARS Assessment Results

As a way to evaluate sustainability at Concordia, the fourth CCSA Report is based upon the Sustainability Tracking, Assessment and Rating System (STARS) developed by the Association for the Advancement of Sustainability in Higher Education (AASHE). The STARS ranking system awards 5 different certification levels: Platinum (85%+), Gold (65%+), Silver (45%+), Bronze (25%+) and Reporter. In 2012, Concordia received a Silver certification rating level with a score of 45%. This shows that sustainability initiatives are already an important aspect at Concordia but also that further improvement is possible.

2013-2014 – Multi-stakeholder Consultations

Similar to the previous STARS submission process, the CCSA involves the collaboration of departments, offices, centres, and organisations at the University in order to gather the necessary information. These different stakeholders have contributed insights, reviewed relevant sections and participated in the creation of recommendations to ensure that the CCSA report is an accurate reflection of the views of Concordia's community as a whole.

2013-2014 – Governmental Guidelines and Legislations

Guidelines and legislations are being implemented at the governmental level to create a sustainability framework in which universities will need to operate and evolve. This is especially true at the provincial and municipal levels, for example with the Sustainable Development Act of Quebec, Quebec's 2013-2020 Climate Change Action Plan, and the City of Montreal's Community Sustainable Development Plan 2010-2015. Recommendations of the CCSA report are strategically elaborated to advance sustainability at Concordia along the same lines.

2013 – Best Practices

Best practices from other universities were researched and included at the end of relevant sections of the CCSA report. The best practices section includes an example of a Champion best practice and a Comparator best practice. A Champion is considered to be a sustainability role model but with a situation that might be difficult to compare with Concordia. A Comparator is, on the other hand, an example of a university evolving in a similar environment as Concordia. The Champion examples are in many cases the ideal scenario that Concordia should strive for. The Comparator examples are usually less ambitious but more realistic to implement in the process of striving to achieve the Champion level of sustainability.

Clusters

This report is subdivided into overarching “clusters”, each regrouping different sustainability topics.

The four clusters of the report are:

- **Cluster 1 – Operations and Infrastructure**
 - o The physical supporting operations of Concordia University, including buildings, transportation, waste, water, etc.
- **Cluster 2 – Awareness and Participation**
 - o Topics related to the raison d’être of Concordia University, e.g. education, research, and serving the community.
- **Cluster 3 – Equity and Well-being**
 - o Human equity and well-being aspects at Concordia, including food, diversity, human resources, and affordability of services.
- **Cluster 4 – Governance**
 - o Umbrella concepts such as coordination, planning, and investment, which will foster and facilitate all underlying sustainability initiatives.

These clusters were chosen to group together the different topics of the STARS assessment as well as to reflect the different facets of Concordia University related to sustainability.

How to use

This report can be read in no particular order. Efforts have been made to link specific topics with other when deemed necessary since different aspects of operations are often interlinked.

Each selected topic includes:

- A brief description of the sustainability situation of that topic at Concordia
- The 2012 STARS results associated with this topic
- Recommendations in order to increase sustainability at Concordia for that specific topic.
- Each topic closes with a summary of best practices in other North American higher education institutions.

CLUSTER 1 – OPERATIONS AND INFRASTRUCTURE

The Operations and Infrastructure cluster brings together topics related to the physical operations of Concordia University's two campuses. The topics covered under this section include transportation, buildings, energy consumption, climate change impacts, landscape, purchasing, waste reduction and water. The physical facilities and operations of institutions are key aspects to consider when assessing sustainability, especially in regards to resource usage and emissions.

Transportation

Advisors: Gerry Barrette, Property/Operations Manager (Loyola), Facilities Management
Robert Beausoleil, Operations Coordinator, Commercial Services
Jean-Philippe Plourde, Allégo Concordia Coordinator, Sustainable Concordia

In the context of a multi-campus institution such as Concordia, the impacts of the different modes of transportation used by the Concordia community is important to assess. Transportation can either have a negative or a positive impact on Concordia's community depending on how it is planned and managed. Incentives to use sustainable commuting systems such as public transport or active transportation i.e. bicycling, and walking, help reduce dependency on petroleum-based fuels. This in turn helps to enhance Concordia community's health and well-being.

Current situation:

Sir George Williams Campus

Located at the urban core of Montreal, Concordia's downtown Sir George Williams (SGW) campus is well served by public transport. This includes the Guy-Concordia metro station and several bus lines. A major citywide bicycle path passes through the campus and there are rush-hour/express bus lanes available on Guy Street. The surrounding area, known as Quartier Concordia, recently underwent major renovations that resulted in safer and more pleasant walking areas for pedestrians. This included the construction of underground tunnels that connect some of the larger buildings on the campus with the metro system and wider sidewalks with benches and trees.

Currently the majority of faculty, staff and students take public or active transport to get to and from the University (REF1). For those using cars for their commute, around 500 parking spaces are available to all Concordia members, of which 87% are located in Concordia-run underground parking facilities. There are also several public parking lots and street metered parking spaces available around the SGW campus.

Loyola Campus

Concordia's Loyola campus is located on the western side of the island of Montreal. Even though it is not directly accessible by the metro system, three bus lines serve the area around the campus. Loyola campus is of walking distance from the Montreal-Ouest commuter train station, which connects the campus with the West Island and other areas served by the commuter train network. The Loyola campus is pedestrian friendly as it offers limited access to vehicles within the boundaries of the campus.

There are two surface (above-ground) parking lots that can be used by faculty, staff and students who commute by car to Loyola campus. Non-metered street parking is also available along Sherbrooke Street and surrounding side roads. There are two electrical charge stations for electric vehicles at Loyola Campus available to the general public free of charge - one located in the parking lot next to Concordia's Recreation and Athletics Complex (RA) and the other located in the parking lot next to the Physical Services (PS) building.

Facilities Operations at Loyola have two Global Electric Motorcars (GEM) utility vehicles used to travel throughout the campus. Following negotiations between Facilities Operations, the GEM vehicles' vendor and the Société de l'Assurance Automobile du Québec, Facilities Operations has successfully obtained the right to use the GEM vehicles (with appropriate license plates) on Loyola campus' surrounding streets where the speed limit is 40 km/h or lower. Using these electric vehicles when fuel-based vehicles were used in the past reduces overall fossil fuel consumption and lowers emissions.

Intercampus Shuttle Service

The two campuses are linked by Concordia's shuttle bus that operates weekly from morning to evening at specific time intervals during the academic year (September to May) and operated on a reduced schedule during the summer semester (June-August). The shuttle service is contracted to and operated by Skyport International, located in Dorval, Quebec.

Allégo Concordia

Allégo's goal is to improve sustainable transport policies and infrastructure at Concordia by facilitating access to bicycle and public transit services and increasing walking culture with the overarching goal of reducing automobile use. Allégo focuses on the following four areas: walking, biking (including access and maintenance), public transit, and carpooling/car sharing.

One of Allégo's accomplishments is the creation in 2009 of the Secure Bike Parking Facility. Located on the SGW Campus, in the underground parking of the Library Building (LB), the Secure Bike Parking Facility is an ongoing service in high demand every year. For an affordable membership fee, members of Concordia's community can have access to a secured garage place for bicycles including free access to bicycle tools as well as free access to Concordia's Le Gym shower facilities.

Recently, Allégo has worked with Concordia's administration to put in place the Abandoned Bicycle Policy in order to reduce the amount of abandoned bicycles on campus hence optimizing free bicycle parking space for Concordia's community.

AASHE STARS 2012 Results: 8.5/12 (71%)

Main gains occurred in the following credits:

- Proportion of students using sustainable transportation for commuting
- Proportion of employees using sustainable transportation for commuting
- Facilities for bicyclists & bicycle plan

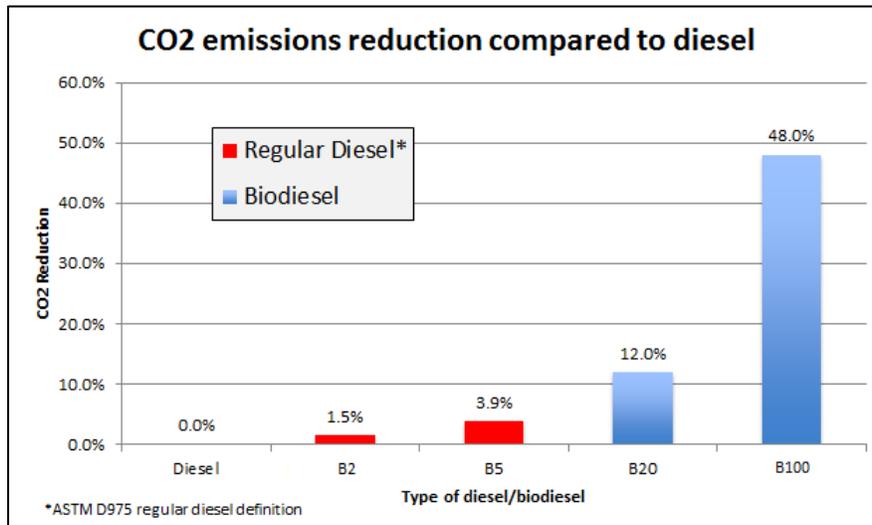
Main losses occurred in the following credits:

- Supporting alternative fuel and power technology in motorized vehicle fleet
- Supporting prohibiting idling legislations

Recommendations:

Recommendation C1.1: Concordia should require the use of B20 biodiesel fuel-mix (20% biodiesel) for its shuttle buses. Additionally, Concordia should implement a stipulation in the contract with the shuttle service provider that the biodiesel used in the shuttle buses must come from sustainable sources.

Switching from the current B2 biodiesel fuel-mix (2% biodiesel) used in Concordia’s shuttle buses requires no or minor modifications to existing engines. B20 biodiesel fuel-mix is also affordable as it is in the same price range as regular diesel (REF2).



Source: U.S. Environmental Protection Agency (2002) – A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions (Draft Technical Report EPA420-P-02-001)

Biodiesel can have a lower environmental impact than normal diesel but only if this fuel is produced in a sustainable manner. Biodiesel produced from conventional food crops that could otherwise have been used as food is considered an unsustainable source. Sustainable biodiesel should be derived from sources that do not create a direct competition with animal or human food supply. Examples include biodiesel derived from perennial grasses, forestry material scraps, co-products from food production and domestic vegetable waste (REF3).

Recommendation C1.2: Concordia should set up a sustainability surcharge on car parking fees, where revenues from that surcharge are used to maintain sustainable commuting systems such as the Concordia shuttle bus and further cycling infrastructure.

Users of low emission vehicles such as hybrid or electric cars could be exempted from the sustainability surcharge. The surcharge then creates an incentive to either use a personal low emission vehicle or to use sustainable commuting systems.

At Concordia, roughly 90% of students and 80% of employees are using sustainable commuting systems (REF4) (public transport, shuttle services, cycling, etc.), hence the need to regularly upgrade and support related infrastructure. Concordia could look towards the Montreal Community Sustainable Development Plan 2010-2015 for sustainable commuting systems initiatives that can be implemented at the University. These initiatives will

contribute to the Montreal Community Sustainable Development Plan's objective of reducing Montreal's greenhouse gas emissions of 30% by 2020 compared with 1990 levels.

Recommendation C1.3: Concordia should publicly advertise Montreal's idling prohibition by-law throughout its community and enforce it wherever it is deemed necessary.

Since January 2008, as an effort to reduce GHG emissions, a by-law of Montreal prohibits idling in all 19 boroughs of the city (REF5). Security guards should also communicate this municipal by-law during their daily patrols.

Recommendation C1.4: Concordia should regularly conduct a sustainable cost-benefit analysis of the different energy sources available for its vehicles fleet, including prospects for its shuttle buses in order to determine the sustainability level of each type of energy source and their respective return-on-investment timeframe.

Vehicles and shuttle buses using different types of energy sources (diesel, biodiesel, hybrid diesel-electric, ethanol, electric, etc.) have different economic, social, and environmental costs and benefits depending on an organization's needs and infrastructure. These costs and benefits change regularly due to the evolving nature of alternative energy technologies. A feasibility study conducted every 3 years examining the economic, social, and environmental aspects of different types of energy sources would be useful to ensure that the best economic, social, and environmental choices are being used. This feasibility study could be done in conjunction with an Environmental Impact Assessment (EIA).

Transportation Best Practice – Champion: Elon University (USA)

In 2005, Elon University received a \$1 million federal grant to fund the conversion of shuttle buses from gasoline to biodiesel fuel. The Piedmont Authority administered the grant for Regional Transportation (PART), which coordinates transportation efforts such as carpooling and shuttle buses in seven counties in central North Carolina. The grant helped fund the purchase of biodiesel buses and now, the University has a total of 11 biobuses running on fuel-mix of ultra-low sulphur diesel and 20% biofuel.

Elon University's buses are refuelled on campus at the University's own refuelling station and run along the city's shuttle and tram routes. In addition to the biobuses, Elon University has over 55 additional alternative fuel vehicles including biodiesel, electric, and hybrid utility and security vehicles.

Link: <http://www.elon.edu/e-web/bft/sustainability/ci-transport.xhtml>

Transportation Best Practice – Comparator: Université de Sherbrooke (Canada)

As part of its Sustainable Development Policy, the Université de Sherbrooke has put in place different initiatives for sustainable transportation:

- Interurban agreements between the Université de Sherbrooke and Transdev Limocar to offer discounts for students and refunds for employees when travelling by bus between the Sherbrooke and Montreal campuses;
- Agreement between the Université de Sherbrooke and the Agence Métropolitaine de Transport (AMT) to create a carpooling network through AMT's Covoiturage software;

- Five charging stations are installed in strategic locations for electric vehicle recharging. These stations are part of the Circuit électrique created in part by Hydro-Québec and the AMT;
- Direct collaboration between the Université de Sherbrooke and the Centre de mobilité durable de Sherbrooke.

Université de Sherbrooke has been recognized for promoting efficient and sustainable public transit practices on campus and acquired awards from Transport 2000 Québec (in 2004) and l'Association Québécoise de Transport Routier (in 2005).

Link: <http://www.usherbrooke.ca/developpement-durable/campus/transport/>

REFERENCES:

REF1: Concordia University STARS Report (2012) – Transportation: Student Commute Modal Split & Employee Commute Modal Split.

(<https://stars.aashe.org/institutions/concordia-university-qc/report/2012-10-11/>)

REF2: U.S. Department of Energy (2013) – Clean Cities Alternative Fuel Price Report, January 2013

(http://www.afdc.energy.gov/uploads/publication/alternative_fuel_price_report_jan_2013.pdf)

REF3: Food and Agriculture Organization of the United Nations (2013) - Biofuels and the sustainability challenge: A global assessment of sustainability issues, trends and policies for biofuels and related feedstocks

(<http://www.fao.org/docrep/017/i3126e/i3126e.pdf>)

REF4: Concordia University STARS Report (2012) – Transportation: Student Commute Modal Split & Employee Commute Modal Split.

REF5: Ville de Montréal – Environnement

(http://ville.montreal.qc.ca/portal/page?_dad=portal&_pageid=7237,75085639&_schema=PORTAL)

Buildings

Advisors: Yves Gilbert, Director, Engineering and Building Performance, Facilities Management
Daniel Gauthier, Building Performance Coordinator, Facilities Management
Kirsten Sutherland, Manager, Design and Planning, Facilities Management

Buildings are the largest resource consumer and emitter of greenhouse gases on the campus (both direct and indirect emissions). In Montreal, buildings alone are responsible for 20% of total greenhouse gas (GHG) emissions (REF1). From the design and construction of buildings up to their operations and maintenance, actions affecting buildings on campus will directly impact the sustainability performance of Concordia University.

Current situation:

Design and Construction

LEED Certification

Certification from the Canada Green Building Council Leadership in Energy and Design (LEED) indicates performance in five key areas of human and environmental health (REF2): 1) Sustainable site development, 2) Water efficiency, 3) Energy efficiency, 4) Materials selection, 5) Indoor environmental quality.

Concordia University has recently received certification for some of its buildings:

In 2012: LEED-Gold certification - PERFORM Centre (Loyola Campus)

LEED-Silver certification - Molson Building (Sir George Williams Campus)

In 2013: LEED-Gold certification - The Centre for Structural & Functional Genomics (Loyola Campus)

Operations and Maintenance

CJ Building Monitoring Pilot Project

A heating, ventilation and air conditioning monitoring pilot project operated out of Concordia Facilities Management is currently in place at the Communication and Journalism (CJ) Building at Loyola campus. This pilot project uses innovative database software that analyzes information and signals in real-time from existing environmental sensors (temperature, pressure, airflow, etc.). This technology anticipates equipment malfunctions by detecting trends and anomalies in the operations. This allows Facilities Management to solve small problems before the impact can propagate into larger and more costly ones. This innovative technology improves the overall efficiency of buildings operations and can contribute to LEED certification.

Other aspects related to buildings (energy, purchasing, waste, water, etc.) will be discussed in the appropriate sections further below.

AASHE STARS 2012 Results: 7.1/13 (55%)

Main gains occurred in the following credits:

- Adoption of an indoor air quality management process
- Proportion of new buildings that are LEED-certified (New Construction and Major Renovations)

Main losses occurred in the following credit:

- Proportion of existing buildings that are LEED-certified (Operations & Maintenance)

Recommendations:

Recommendation C1.5: Concordia should establish key performance indicators (KPIs) specific to building sustainability, based on existing LEED-certified buildings and other building sustainability tools.

The current LEED-certified buildings should be used as benchmarks to determine the sustainability levels of other buildings not only for design and construction but for operations and maintenance as well.

Other tools could also be used in helping to assess the sustainability of buildings at Concordia. One such example is the assessment tool developed by the International Initiative for a Sustainable Built Environment (IISBE), which measures sustainability impacts of a building's design and operations. The impacts measured by the IISBE measurement tool are economic, ecological, non-renewable materials use, user and occupant comfort and productivity, acidification, climate change, and water use (REF3).

Once the KPIs are established, they can be implemented to all buildings, even those not LEED-certified, as these KPIs will help to evaluate their overall sustainability level. This will increase the visibility and recognition of building's sustainability initiatives at Concordia, especially for sustainability rating purposes, without the need to officially certify every existing building. The primary sustainable goal is to use energy and resources more efficiently, not necessarily acquiring a certification per se.

Recommendation C1.6: Concordia should define the green building principles indicated in the Environmental Policy VPS-5.

As indicated in Concordia's Environmental Policy VPS-5 (REF4), green building principles should be used. In order to increase the applicability of this policy directive, it is imperative to provide a clear definition of these green principles. Facilities Management could define these green building principles with the help of resources provided by the Canada Green Building Council (REF5).

Recommendation C1.7: Further development of public awareness and participation programs should be created when implementing new processes or technologies in buildings.

The effectiveness of any new process or technology is directly dictated by the behaviour of the community towards those technologies. Without awareness on behalf of users or maintenance staff, there is a risk of lowering the overall efficiency of new processes and technologies.

Specific plans are suggested in the appropriate sections for the main areas at Concordia affected by this recommendation: Energy & Climate, Waste and Water.

NOTE:

Another important aspect of sustainability for buildings is their accessibility for all members of Concordia's community, including people with reduced mobility. This aspect will be further discussed in Cluster 3, Equity and Well-being.

Building Best Practice – Champion: University of Victoria (Canada)

Victoria University has made it a mandate that all new buildings constructed are to be certified LEED Gold facilities. The campus currently has five buildings registered as LEED Gold certified with another one awaiting certification. Victoria University has also undertaken the initiative to have at least 50% of all major renovation projects to be registered with the LEED EB (Existing Building) program.

Link: <http://www.uvic.ca/sustainability/operations/buildings/index.php>

Building Best Practice – Comparator: ÉTS – École de Technologie Supérieure (Canada)

ÉTS was ranked as Quebec’s most energy efficient university in 2009. LEED certification being a primary objective, ÉTS has made it a priority and requirement to achieve either a silver or gold rating for all of its building projects. One of the first LEED certified buildings was the university’s Phase IV student residence. This new student residence includes an innovative thermo pump that recycles supplemental energy and converts it into hot water for domestic use and will service other phases of the project as well.

In order to facilitate the process of obtaining silver or gold LEED certification for all of its new buildings, an engineer from ÉTS’s construction team was trained to acquire a LEED certification and obtain the accreditation of “LEED Green Associate”.

Link: <http://www.etsmtl.ca/Services/dd/Initiatives-pour-un-campus-durable/Batiments-verts>

REFERENCES:

REF1: Ville de Montréal (2009) – Politique de développement durable pour les édifices de la Ville de Montréal.

REF2: Canada Green Building Council – LEED (<http://www.cagbc.org/AM/Template.cfm?Section=LEED>)

REF3: International Initiative for a Sustainable Built Environment (<http://www.iisbe.org>)

REF4: Concordia University (2007) – Environmental Policy VPS-5.

REF5: Canada Green Building Council (<http://www.cagbc.org>)

Energy & Climate

Advisors: Yves Gilbert, Director, Engineering and Building Performance, Facilities Management
Daniel Gauthier, Building Performance Coordinator, Facilities Management

Energy is a central element to assess the sustainability of physical infrastructures especially considering that buildings on campus are the largest consumers of energy. These GHG emissions translate into significant impacts on climate change therefore this section discusses energy and climate together as they are intricately linked.

Consumption of energy at Concordia is mainly through the use of natural gas for heating purposes (direct emissions - scope 1) and through the use of electricity purchased from Hydro-Québec (indirect emissions - scope 2).

Types of emissions (REF1):

Direct emissions: Emissions from sources that are owned or controlled by the reporting organisation.

Indirect emissions: Emissions that are a consequence of the activities of the reporting organisation, but occur at sources owned or controlled by another organisation.

For reporting purposes, greenhouse gas (GHG) emissions are categorized in three different scopes:

Scope 1: All direct GHG emissions

Examples: Burning natural gas for heating, emissions from a vehicle fleet.

Scope 2: Indirect GHG emissions from consumption of purchased electricity, heat or steam

Examples: Using electricity purchased from Hydro-Quebec.

Scope 3: Other indirect emissions, such as the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting organisation, electricity-related activities (e.g. transmission and distribution losses) not covered in Scope 2, outsourced activities, waste disposal, etc.

Examples: Air transport of employees, emissions occurring in extracting natural gas and oil, emissions occurring in producing cement, cutting wood, producing paper, etc.

Current Situation:

Energy Efficiency Improvements

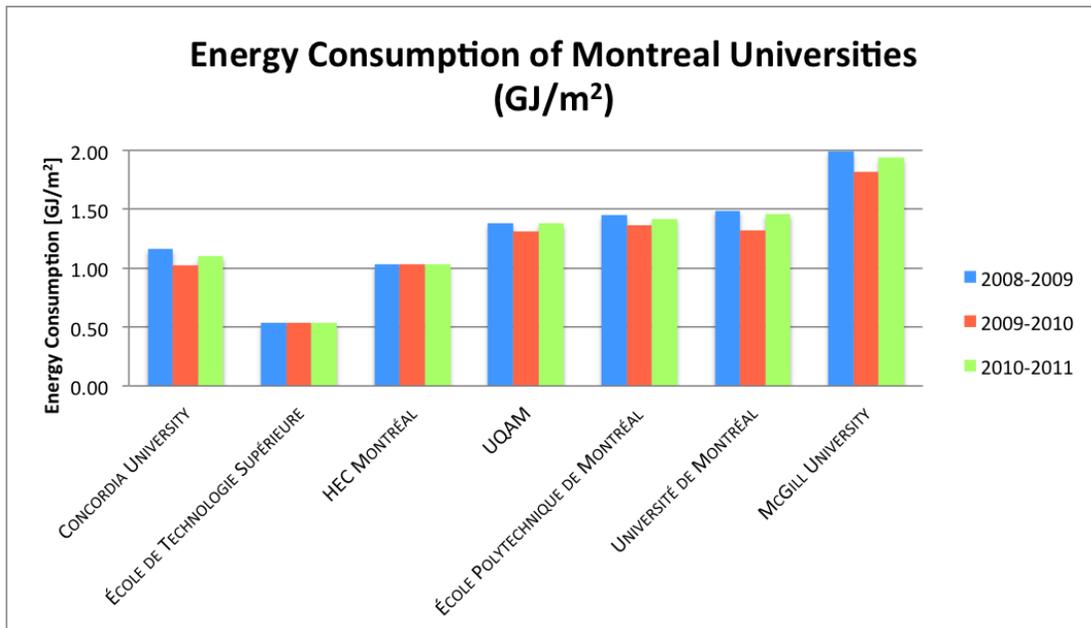
Since the beginning of 2011, the external envelope of the Guy-Metro (GM) building has been completely rebuilt (walls, windows, roof) to increase its energy efficiency. This will decrease natural gas consumption for heating by 65% (REF2) as well as reduce electricity consumption for air conditioning. Other energy efficiency initiatives have been undertaken such as replacing all incandescent light bulbs of the D.B. Clarke Theatre (in the Hall Building) with higher efficiency LED bulbs. LED bulbs consume 75% less energy while providing similar lighting levels (REF3).

In Fall 2011, new electric boilers were installed at Loyola campus. While not directly lowering total energy consumption, this change reduced direct GHG emissions as the previous boilers ran on natural gas. Natural gas has a higher GHG emission rate than electricity, as Montreal's electricity source is hydroelectricity. Furthermore, this

boiler change resulted in approximately 10% reduction in energy cost (REF4) due to a lower cost for hydroelectricity compared to natural gas.

Energy Consumption Reporting

Every year universities are required to report their energy consumption to the Quebec government. For the reporting period of 2010-2011, Concordia was consuming less energy per square meter than the average university in the province of Quebec (1.10 GJ/m² compared to 1.40 GJ/m²) (REF5). In Montreal, Concordia is also one of the universities consuming the least amount of energy per square meter. See graph below for a comparison of energy consumption of Concordia with other Montreal’s universities (in Gigajoule per square meter).



Source: Ministère de l’Enseignement supérieur, Recherche, Science et Technologie du Québec – Relevés énergétiques du réseau universitaire

Government reporting has helped universities to assess their direct GHG emissions (scope 1) based on energy consumption, however, it does not assess other direct GHG emissions such as those from transportation (scope 1). It also does not assess indirect emissions (scope 2 and scope 3). Please see the text box “Types of emissions” for further information on Scope 1, 2, 3.

AASHE STARS 2012 Results: 4.77/33 (14%)

Main gains occurred in the following credits:

- Initiating a GHG emissions inventory
- Using an energy management system (EMS)

Main losses occurred in the following credits:

- Efforts in reducing GHG emissions per weighted campus user compared to Concordia’s 2005 emissions*
- Efforts in reducing total building energy consumption per square foot compared to Concordia’s 2005 energy consumption*
- Development of clean and renewable energy

*These credits were not pursued due to that fix 2005 baseline. Concordia built the EV building (in 2005) and the JMSB building (in 2009) which made these credits harder to achieve due to the campus expansion.

Recommendations:

Recommendation C1.8: All energy efficiency optimization projects at Concordia should include a standard report card recording among others the cost savings, total energy saved and reduction in GHG emissions.

Calculating the cost savings, total energy saved and reduction in GHG emissions from energy efficiency projects is important in order to promote these initiatives taken on at Concordia. Another application is to apply for any subsidies or grants that use this information as a criteria for eligibility, e.g. Quebec Natural Resources “Programme d’aide à l’implantation de mesures efficaces dans les bâtiments” (REF6) or Hydro Quebec’s Buildings Program (REF7)

Recommendation C1.9: Public awareness campaigns and community participation programs should be incorporated when implementing new processes or technologies related to energy efficiency.

It is important for the community to be aware of how to use the processes and technologies to maximize the efficiency of any new technologies installed in to reduce energy consumption. This is useful for technologies such as motion sensor lighting or for processes such as standard sleep settings on institutional computers.

An energy efficiency awareness program could be created at Concordia by using existing guidelines - Natural Resource Canada’s “Implementing an Energy Efficiency Awareness Program” is an example of a program Concordia could use as a template (REF8). Economic savings from energy efficiency initiatives should also be clearly communicated through such an awareness program.

Recommendation C1.10: Concordia should implement an annual assessment of all GHG emissions at Concordia (direct and indirect), in order to ensure proactive strategic planning and to highlight successes.

Following the priority for governmental organisations to officially assess the GHG emissions of their own operations (REF9), there is a possibility that the broader public sector such as universities and hospitals will soon be asked to produce similar official GHG statements. In 2006, the Government of Quebec established the Sustainable Development Act, which stipulates that:

“Municipalities, school boards, and health and social services agencies are invited to frame their actions in line with the sustainable development approach outlined in the Act. The Government may determine by Order in Council when the provisions of the Act will apply to these institutions and agencies, after having consulted them in that regard.” (REF10).

Since 2010, the minimum requirement for the mandatory reporting of CO₂ emissions has been lowered to 10,000 metric tons (REF11) to reflect changing environmental conditions and the impacts of climate change. An awareness of emission trends at Concordia compared to governmental legislations is important for efficient proactive management.

An assessment of direct and also indirect GHG emissions would concentrate all GHG emission-related operations (buildings, vehicles, energy purchasing, etc.) into one single database, allowing for a better awareness of total emissions. It would ensure continuity in data over the years as well as proactive planning for changes in legislation.

This assessment would also facilitate other reporting efforts such as the STARS sustainability assessment, LEED certification, etc. An annual GHG emissions assessment would help to ensure institutional memory at Concordia and any major reduction in GHG emissions could be promoted to showcase Concordia's commitment to reducing its impact on climate change. This activity should be incorporated into the Facilities Management portfolio.

Energy and Climate Best Practice – Champion: University of British Columbia (Canada)

The University of British Columbia (UBC) strives to be a leader in energy and climate management by committing to bold GHG emission targets that exceed provincial goals and are among the most aggressive of the world's top 40 universities. UBC is committed to achieving a 33% GHG emissions reduction by 2015, compared to 2007 levels, through the implementation of three major projects, which are integral components of UBC's Climate Action Plan:

- The first project includes the conversion of district heat systems from steam to hot water. This new system will increase operational efficiencies by reducing heat distribution losses and save up to \$4 million a year in operational and energy costs;
- The second titled the 'Tune-Up Program', focuses on the optimization of building performances on campus by reducing their electrical and thermal energy consumption while maintaining or improving comfort levels. As an effort to improve behaviour on campus, this program integrates real-time performance monitoring, targeting and reporting;
- The third project consists of the installation of the Bioenergy Research and Demonstration Facility. This is the first community-scale demonstration of biomass gasification co-generation in North America and will generate clean heat and electricity to UBC's campus.

Link: <http://www.sustain.ubc.ca/campus-initiatives/climate-energy/climate-action-plan>

Energy and Climate Best Practice – Comparator: Bishop's University (Canada)

Bishop's University began an energy efficiency project in 2008. Estimated at \$7.8 million, the university was awarded a contract with AMERESCO in 2010 after conducting a feasibility study involving the decentralization of heating systems and the integration of Canada's first geothermal district heating system.

Geothermal energy involves retrieving the ground's thermal energy from 57 geothermal wells located under the university's soccer field and converts it into usable energy by using heat pumps. Only 25% of the energy needed to operate these heat pumps comes from Hydro-Quebec electricity while the rest is thermal heat from the ground. The usable energy is distributed through an underground loop system connecting the university's buildings to the main heating plant, allowing the system to use energy for heating or reject energy for cooling according to the usage needs.

This campus wide energy efficiency project has contributed to the reduction of Bishop's GHG emissions by 66%, its natural gas consumption by 64% and total energy cost by more than 30%.

Link: http://www.ubishops.ca/fileadmin/bishops_documents/services/SDAG/AMERESCO.pdf

REFERENCES:

REF1: GHGProtocol.org – What is the difference between direct and direct emissions?

(<http://www.ghgprotocol.org/calculation-tools/fag>)

REF2: Pageau Morel et Associés Inc. (2011) – Université Concordia Bâtiment GM, Étude énergétique 1

REF3: Energy.gov – Lighting Choices to Save You Money (<http://energy.gov/energysaver/articles/lighting-choices-save-you-money>)

REF4: LBHA Ingénieurs – Campus Loyola – Unification Entrées Électrique (February 14th, 2008)

REF5: Ministère de l'Enseignement supérieur, Recherche, Science et Technologie du Québec – Relevés énergétiques du réseau universitaire

(http://www.mesrst.gouv.qc.ca/fileadmin/contenu/documents_soutien/Ens_Sup/Universite/PersUniv/RelevésEnergétiqueUniv/Usom08-09-10.xls)

REF6: Energy Efficiency Financial Assistance Programs for Institutions. Quebec Natural Resources “Programme d'aide à l'implantation de mesures efficaces dans les bâtiments”

(<http://efficaciteenergetique.mrnf.gouv.qc.ca/clientele-affaires/institutions/programme-daide-a-limplantation-de-mesures-efficaces-dans-les-batiments/>)

REF7: Hydro Quebec's Buildings Program (<http://www.hydroquebec.com/business/energy-efficiency/programs/>)

REF8: Natural Resources Canada (2012) – Implementing an Energy Efficiency Awareness Program

(http://publications.gc.ca/collections/collection_2013/rncan-nrcan/M144-244-2012-eng.pdf)

REF9: Gouvernement du Québec (2012) – 2013-2020 Climate Change Action Plan

(http://www.mddefp.gouv.qc.ca/changements/plan_action/pacc2020-en.pdf)

REF10: Ministère du Développement durable, Environnement, Faune et Parcs – Sustainable Development Act, A fundamental law for Québec (<http://www.mddep.gouv.qc.ca/developpement/Appendix.pdf>)

REF11: Ministère du Développement durable, Environnement, Faune et Parcs – Règlement modifiant le Règlement sur la déclaration obligatoire de certaines émissions de contaminants dans l'atmosphère (2010)

(http://www.mddep.gouv.qc.ca/air/declar_contaminants/reglement.htm)

Landscape

Advisors: Gerry Barrette, Property & Operations Manager (Loyola), Facilities Management
Jackie Martin, Greenhouse Coordinator, Concordia Greenhouse

As part of its operations, Concordia needs to maintain an adequate and healthy natural environment for its community. This is challenging in the urban setting of the SGW campus, however it is an opportunity for creative solutions.

Current situation:

Loyola Campus

Loyola campus is the larger of the two campuses with a total area of 34.6 acres of which approximately 75% are non-building areas (e.g. outdoor parking, concrete sidewalk, grass, etc.). This leaves opportunities for landscaping and green space initiatives. One of these initiatives is the use of rain collectors at the Loyola campus for grass and plant watering. At Loyola, native plants are used to spell the name of Concordia in front of the administration building and flowerbeds are generally made of native plants. One area of the Loyola campus is using xeriscaping methods (resilient plants with low water needs) nearby the Communication and Journalism Building.

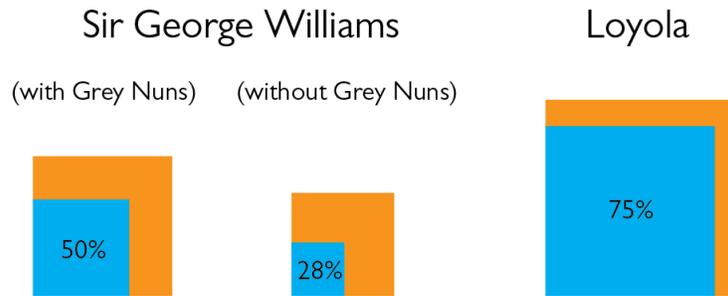
City Farm School, which is a Concordia Greenhouse project, runs an urban agriculture school on Loyola campus. The produce grown through the City Farm School gardens include vegetables, medicinal and culinary herbs, and permaculture inspired fruit bushes and trees.

Sir George Williams Campus

At about half the size of Loyola's campus, the SGW campus has a total area of 17.4 acres, including 8 acres occupied by the Grey Nuns Mother House (GN). Without the GN area, the SGW campus is densely developed with approximately only 28% of non-building areas, most of which are non-vegetated. When including the Grey Nuns Mother House area, this non-building ratio increases to nearly 50% and substantially increases the level of vegetated areas.

As part of the Quartier Concordia initiative between Concordia University and the City of Montreal, vegetation planters now separate traffic from the new bike path finalized in late 2012 on De Maisonneuve Boulevard. Currently the Concordia Greenhouse plants vegetables in planters situated at various locations on campus. In addition, the Concordia Greenhouse in collaboration with a youth group, Innovation Jeunes, is planting a vegetable garden in the courtyard of the Visual Arts building.

Non-building area ratio of Concordia campuses



Source: Martine Lehoux, Director, Facilities Planning and Development (September 2012)

Reducing Chemicals

Custodial and Grounds Services of Facilities Management are making efforts to avoid using chemicals outdoors. During the winter, both campuses necessitate snow and ice removal operations. Salt usage is 80% of the time comprised of salt (without chemical additives) mixed with sawdust and wood chips from Concordia's carpentry operations. During the summer, pest management operations use a mixture of water, sodium bicarbonate, soap, and vinegar instead of any chemically derived pesticides.

AASHE STARS 2012 Results: 2.75/3 (92%)

Main gains occurred in the following credits:

- Landscape maintenance in accordance with an integrated pest management plan
- Waste from landscaping activities is composted

Main losses occurred in the following credits:

- Program in place to protect or create wildlife habitat.

Recommendations:

Recommendation C1.11: A feasibility study should be made, assessing the possibilities of converting all unused or underused courtyards and other exterior spaces on the SGW campus into greener resting areas.

Since the SGW campus is located in downtown Montreal, adding green spaces is a difficult task. Unused or rarely visited exterior locations should be optimized and converted into greener resting areas for faculty, staff and students. This will not only increase greenery around the campus, but will also lead to an increase in well-being and will potentially increase motivation as well. In order to minimize maintenance resources native shrubs and greenery or xeriscaping could be used.

Recommendation C1.12: Green roof initiatives at Concordia University should be increased as green roofs lead to long-term cost savings and various environmental benefits. These initiatives should be adequately monitored and maintained over time.

Studies show that the initial costs of green roofs are recouped and savings emerge over the years due to the various long-term benefits of green roofs. One such study illustrating these outcomes is Ryerson University's study in 2005 about green roof technology for the City of Toronto (REF1).

As discussed in the Water section, green rooftop initiatives are currently ongoing at Concordia (ex.: CJ and MB buildings). In the case of the SGW campus, which is restricted in green space due to its downtown location, green roof initiatives would be a very efficient way to optimize green space on the campus. Other important benefits of green roofs include:

ENVIRONMENTAL BENEFITS	ECONOMIC BENEFITS	LEGISLATIVE BENEFITS	REPUTATIONAL BENEFITS
Reduction of stormwater run-off	Energy savings for buildings due to lower climate control needs.	Assist in climate change legislation by reducing CO2 emissions.	Contributes to LEED certification and AASHE STARS ratings
Reduction of the heat island effect	Potential for carbon offsets/credits		Garner positive media attention
Reduction of air pollution	Potential for urban agriculture projects		Potential for increased recreational areas
Absorbs CO2 emissions	Extend waterproofing life expectancy		
Potential to increase local biodiversity			

Recommendation C1.13: As part of the Quartier Concordia partnership between Ville de Montréal and Concordia University, a feasibility study should be undertaken to reduce traffic on the portion of Mackay Street between De Maisonneuve and the service exit north of the Hall Building in an effort to facilitate traffic flow on De Maisonneuve, improve safety and well-being, and strengthen the unity aspect of the SGW campus.

Reducing traffic on Mackay Street would facilitate traffic flow on the street corner with De Maisonneuve, as well as improve the safety of pedestrians and Concordia community members using the rest areas beside the Hall building along Mackay Street. Restricting non-emergency vehicles would better integrate Mackay Street's annexes with the Hall Building and also reduce the traffic bottleneck between motorists, cyclists and pedestrians. A similar project at the University of Toronto is currently in discussion (REF2).

Landscape Best Practice – Champion: Indiana University Bloomington (USA)

Indiana University Bloomington (IUB) Campus Master Plan defines a 20-year growth trajectory that prioritizes environmental stewardship and sustainable land planning principles. The plan's objectives were to redefine land-planning principles, preserve and reinvigorate the historic campus core, optimize IUB's natural features, and improve the storm water condition. The Master Plan is particularly sensitive to the campus' historic land planning principles in rural areas, which are characteristic of a more traditional architectural and open-space planning.

IUB has made it a mandate to create a distinctive landscape, preserve existing historic buildings and increase pedestrian accessibility through the conversion of vehicular corridors and surface parking lots into pedestrian zones and added green space.

Furthermore, IUB has implemented a restoration program that prioritizes natural storm water management techniques through the provision and configuration of retention basins, wetlands, bios wales and rain gardens in addition to embracing the Jordan River as an integral element of the Master Plan.

Link: <http://masterplan.indiana.edu/iub/contents.cfm>

REFERENCES:

REF1: Banting et al. (2005) – Report on the Environmental Benefits and Costs of Green Roof Technology for the City of Toronto.

REF2: The Varsity (2013) – UTSU forges ahead with plan to close St. George Street to local traffic
(<http://thevarsity.ca/2013/03/11/utsu-forges-ahead-with-plan-to-close-st-george-street-to-local-traffic>)

Purchasing

Advisors: Robert Scardera, Director, Purchasing Services
Daniela Di Paola, Senior Buyer, Purchasing Services

An important but often overlooked aspect of sustainability is the role of purchasing departments in selecting goods and services that are as sustainable as possible. At Concordia, each purchasing decision is an opportunity to choose more environmentally and socially preferable products and services, including choosing companies who are internally committed to sustainability efforts.

Current situation:

Policies

Through Concordia's Policy on Computer Provisioning (VPS-32), computers at Concordia are reused as much as possible in order to extend the lifecycle and to reduce the purchases of new computers (REF1). Also, when requests for proposals are sent out, technical specifications usually call for an EPEAT Gold rating (REF2).

Concordia University Bookstore's Code of Conduct for Vendors includes guidelines regarding the social protection of employees (non-discrimination, no child labour, no forced labour, etc.)

For its cleaning needs, Concordia University is using the services of GDI Integrated Facility Services. GDI is ISO 14001 and EcoLogo certified and uses environmentally friendly cleaning products (REF3).

AASHE STARS 2012 Results: 4.9/7.5 (65%)

Main gains occurred in the following credits:

- Preference to purchase 50% recycled content office paper
- Preference to purchase EPEAT-certified (Silver or higher) computers

Main losses occurred in the following credits:

- Official stated preference for purchases of Green Seal or EcoLogo certified cleaning products
- Expenditures of 100% recycled-content office paper

Recommendations:

Recommendation C1.14: In order to further maximize the value of assets for Concordia's community, Concordia's Purchasing Services should officially include the aspect of sustainability in its mandate.

The mandate of Concordia's Purchasing Services is "to maximize the value to the University Community in considering price, quality, service availability, and operational performance" when acquiring assets (REF4). Unsustainable actions are not cost efficient and do not maximize value, especially in a long-term timeframe. Purchasing Services should consider including environmental and social impacts and the principles of sustainable procurement in its mandate.

Recommendation C1.15: Official requirements for Energy Star and EPEAT should be included in the Policy on Computer Provisioning (VPS-32) and/or in the Purchasing Policy (CFO-20).

Concordia currently prioritizes EPEAT-certified computers in its computer purchasing & request for proposals process but there are no official guidelines to do so.

All purchases of electronic appliances should be Energy Star certified if that choice is available for a specific type of equipment. Certified Energy Star equipment will help reduce energy consumption, hence reducing costs and greenhouse gases emissions. This will also further facilitate future LEED certification applications due to energy savings.

Energy Star provides more information regarding the implementation of Energy Star policies in purchasing and procurement (REF5).

Recommendation C1.16: Contracting policies should include an environmental clause to ensure that future contracts maintain the same or achieve higher levels of environmental protection.

Concordia is currently contracting cleaning services to an organization that strives to be environmentally friendly but there are no official policies enforcing this for future contracts. This recommendation would apply to all contracts on campus including the food services contract, building construction contracts and landscaping contracts.

Recommendation C1.17: Preferences should be given to vendors and suppliers that have internal sustainable policies and practices in place.

Preferences can and should be given to vendors who are themselves striving to be leaders in sustainability. For large purchases requiring a call for tenders, sustainability requirements for tenders should be included in the Request for Proposal.

Such a preference might also incite other potential suppliers to develop their own sustainability practices if they want to be considered by the University.

Recommendation C1.18: In order to further disseminate Concordia's efforts in sustainability, Concordia Retail Stores should include guidelines about environmental protection and sustainability in its Code of Conduct for Vendors as well as facilitate environmental-friendly purchases for Concordia's community.

Concordia University Bookstore's Code of Conduct for Vendors does not include guidelines about ensuring the availability of environmentally friendly products or inciting sustainability practices in suppliers.

For both online and in-store purchases, Concordia Retail Stores should facilitate purchases of products with a lower impact on the environment and increase their visibility. An example of product having a high impact is paper due to its high consumption by Concordia's community.

NOTES:

- **A Printing Policy should be created or embedded into the purchasing policy to require the reduction of unnecessary printing and the use of 100% recycled paper (see Recommendation C1.20 under Waste section)**
- Purchasing recommendations related to food will be discussed in the Food section of Cluster 3 – Equity and Well-being.

Purchasing Best Practice – Champion: Oxford Brookes University (UK)

In 2003, Oxford Brookes became the world’s first Fairtrade University and has remained at the forefront of fair trade in higher education. The Oxford Fairtrade Coalition involves a variety of organizations and individuals that assigns great importance to the university’s role within the international community. It is committed to supporting, using and promoting the Fairtrade organization and certified products. Some of the fair trade goods sold include food and drink products such as coffee and tea as well as fair trade clothing, which can be purchased at the university’s shops, cafes, restaurants and bars on campus.

Since its initial application to the Fairtrade Foundation, the University’s efforts have influenced the broader Oxford community which has seen a 168% increase in the number of retail and catering outlets selling fair trade products throughout the city. In striving to promote awareness of fair trade products, the Oxford Fairtrade Coalition has created a Fairtrade Directory to facilitate University members in locating Fairtrade suppliers on and around campus. They are currently in the process of creating a smartphone app to direct users to the nearest Fairtrade supplier.

Link: <http://www.brookes.ac.uk/about-brookes/sustainability/get-involved/purchasing-and-fairtrade/>

REFERENCES:

REF1: Concordia University (2010) - Policy on Computer Provisioning (VPS-32)

REF2: For more information on EPEAT rating: <http://epeat.net>

REF3: GDI Integrated Facility Services, Environment (<http://gdiservices.ca/about/environment>)

REF4: Concordia University – Purchasing Services (<http://www.concordia.ca/about/administration-and-governance/office-of-the-chief-financial-officer/financial-services/departments/purchasing-services>)

REF5: Energy Star – Purchasing & Procurement (http://www.energystar.gov/?c=bulk_purchasing.bus_purchasing)

Waste

Advisors: Faisal Shennib, Environmental Coordinator, Environmental Health & Safety
Marc Champagne, Manager, Custodial Services, Facilities Management
Brad Poapst, Supervisor, Facilities Management

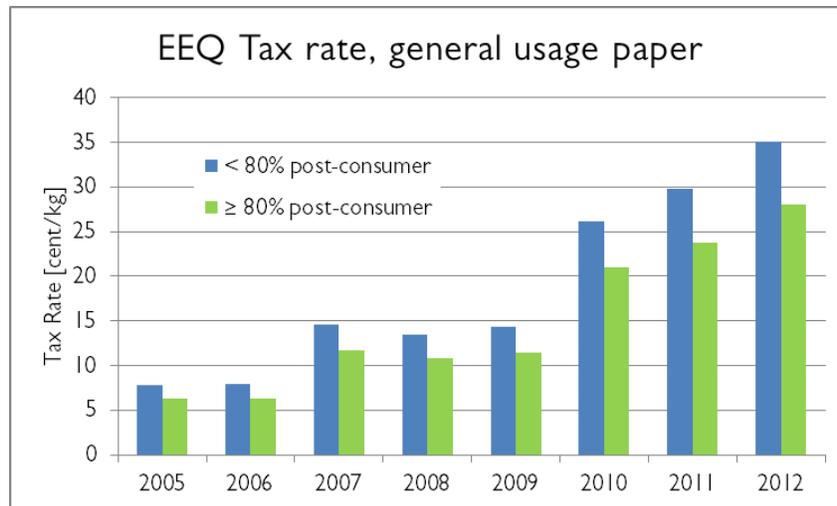
Waste is a human concept that does not exist in nature where the outputs of natural processes are inputs for others. As a result of human development, the generation of waste has exceeded the capacity to assimilate waste back into the environment. Wasted natural resources embody a large amount of wasted financial resources, in the value of the material itself and in the processes required to manage these materials which, when sent to the landfill, are destined to serve no useful function to society. Landfills are also problematic because they are expensive to build and manage.

Current situation:

Over the years, Concordia has focused on and implemented initiatives related to waste reduction and management. From recycling to composting, actions have been taken with the overarching goal of reducing waste sent to the landfill. Concordia owns and operates an industrial composter located at the Loyola campus. It has a capacity to compost approximately 100 tonnes per year. These actions resulted in a decrease of landfill trash from 689 tonnes in 2011 to 585 tonnes in 2012 (REF1).

At Concordia, organic waste and plastic, glass, and metal (PGM) are the largest contributors of trash and account for 31% and 22% respectively (REF2). Efforts to reduce waste in Concordia's community necessarily involve actions that affect these waste types as they can be diverted from landfills by composting or recycling.

Concordia recently completed a self-audit of recyclable material as part of a requirement from the Quebec government program, Éco-Entreprises Québec (ÉEQ). The program targets institutions and companies and subsidizes municipal recycling by taxing producers of recyclable waste that makes its way into the municipal waste system. Concordia's main recyclable waste is paper. Therefore the self-audit tabulated the amount of taxable paper sent out from the University on an annual basis from 2005 until 2012. The results indicated that the total quantity of taxable paper decreased between 2005 and 2012. Nonetheless, the University paid a higher fee in latest years due to an increasing tax level (see figure below for the tax level change over the years). This tax provides an additional financial incentive for the reduction of paper. It also creates incentive to use 100% recycled paper, as the tax rate is lower for this type of recycled paper.



Source: Éco Entreprises Québec – Contribution Tables

<http://www.ecoentreprises.qc.ca/companies/schedules-of-contributions/contribution-table>

Student initiatives

R4 is a working group of Sustainable Concordia with the mission of engaging Concordia community in becoming a Zero Waste Campus. R4 performs waste audits to assess the state of waste outputs at Concordia. Other R4 activities follow the prioritized order of the 4 R's: Rethink, Reduce, Reuse, Recycle (and compost); their focus is on rethinking and reducing waste first and foremost. Reduction projects include:

- Hug Your Mug project - to encourage reusable coffee mug use
- Zero Waste Campus Outreach - to educate the community on how to use compost bins and how to have low-waste events
- Bottled Water Free Campus project - to encourage consumption of tap water
- R4 Dish Project - to encourage the use of reusable dishware at events
- R4 One-sided Notebook Project - to encourage community members to reuse one-sided paper by making notebooks out of them.

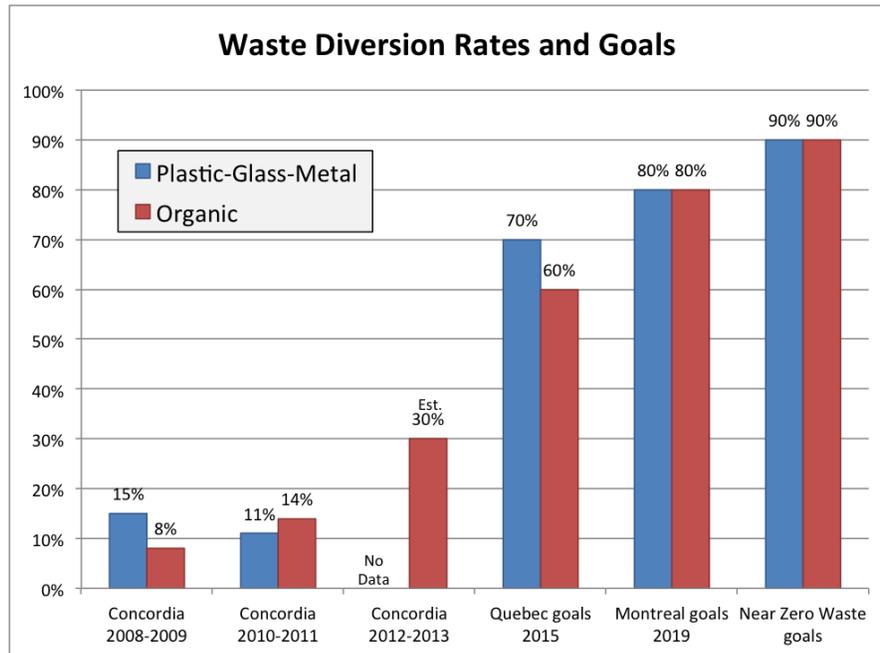
Governmental Goals

Waste diversion rate

Waste reduction and management plans of any organisation need to take into account municipal and provincial objectives. Quebec's Residual Materials Management Policy goals for 2011-2015 include diverting 70% Plastic/Glass/Metal (PGM) material as well as 60% of putrescible organics from the landfill by 2015 (REF3). Also, the City of Montreal's Community Sustainable Development Plan (REF4) has the goal of reaching 80% diversion of recyclable and organic material by 2019 (in accordance with its Plan Directeur de Gestion des Matières Résiduelles [REF5]).

Apart from governmental goals, many universities have implemented Zero Waste goals. Zero Waste is a widely applied concept where over 90% of waste is diverted from landfills and incinerators (REF6). The Zero Waste International Alliance advocates for institutions, companies, municipalities, and cities to set Zero Waste Goals. The University of British Columbia (REF7) and the University of Ottawa (REF8) are examples of universities where the Zero Waste goals are pursued.

See the graph below for a comparison of Concordia's waste diversion rate compared with governmental and Zero Waste goals.



Source: Concordia Environmental Coordinator, REF1, REF2, REF3, REF4

Recoverable waste diversion rate

In 2006, Concordia received RECYC-QUÉBEC ICI ON RECYCLE! Level 3 certification, where a diversion rate of 65% of recoverable waste was required. This certification level has now been modified to three sub-levels: Bronze (70-79%), Silver (80-89%), and Gold (90-99%) to reflect the changing conditions of our society and environment, as well as stricter waste legislations. Concordia is currently pursuing the ICI ON RECYCLE! Level 3 Bronze certification.

Different types of diversion rates (REF2 & REF9):

Waste diversion rate: The percentage of total waste materials diverted from traditional disposal such as landfilling or incineration to be recycled, composted, or re-used.

- A waste diversion rate of 100% means that there is absolutely no waste whatsoever that is sent to landfills or is incinerated;

Recoverable waste diversion rate: The percentage of recyclable/recoverable waste materials that is in fact diverted from traditional disposal such as landfilling or incineration.

- A recoverable waste diversion rate of 100% means that all recyclable/recoverable materials are diverted from landfills but non-recyclable/non-recoverable materials (e.g.: number 6 plastics, multi-layers packaging, etc.) are still sent to landfills or incinerated, hence total waste is not zero.

AASHE STARS 2012 Results: 5.44/12.5 (44%)

Main gains occurred in the following credits:

- Electronic waste recycling program in place for both the institution and students
- Diversion of construction and demolition waste

Main losses occurred in the following credits:

- Reduction in waste generated per weighted campus user compared to a 2005 baseline;
- Waste diversion through reusing, recycling, composting;

Recommendations:

Recommendation C1.19: Concordia should incorporate governmental waste reduction goals as official University goals objectives, as well as the over-arching goal of becoming a near Zero-waste (90% diversion) university by 2020.

Québec's Residual Materials Management Policy includes the following actions for 2011-2015 (REF4):

- To ban the disposal of paper and cardboard in landfills by no later than 2013 and extend the ban to wood by no later than 2014
- To ban the disposal of organic putrescible waste in landfills by 2020

Initiatives that should be pursued to achieve these goals include:

- A cost-savings analysis of potential waste reduction projects.
- Contracts for restaurants renting space on campus, as well as for food service providers and caterers, should include specific waste reduction clauses.
- Lids should be placed on the trash bins in waste stations to discourage campus community members from using them as the default for disposal.
- Pursue the standardization of waste stations to ensure that a recycling bin always accompanies every trash bin.
- Allocate sufficient resources to be able to scale up compost collection to match recycling or waste collection.
- Improved informational messaging on and around current trash bins with the aim to better educate the Concordia community on the proper disposal bin for different waste types.

Recommendation C1.20: A Printing Policy should be created or embedded into the purchasing policy to require the reduction of unnecessary printing and the use of 100% recycled paper.

Given the high costs associated with the Éco Entreprises Québec tax, as well as the ecological benefit of reducing printing and using 100% recycled paper, a printing policy should be established to discourage unnecessary volumes of printing and to require or incentivize printing on 100% recycled paper.

Recommendation C1.21: Resources should be allocated to the yearly assessment process of externally printed materials.

In continuation with the self-audit conducted by Environmental Health & Safety in 2012-2013, resources should be allocated to create a simple process for departments to track their eligible materials. The resources would cover

the cost of a coordinator for creating the simple data-tracking tool, contacting departments to collect the information, and submitting the data, as well as cover the cost of the tax.

Recommendation C1.22: Concordia’s on-site composting capacity should be optimized.

In order to accommodate all compostable waste from Concordia, the capacity of Concordia’s industrial composter needs to be optimized. Such optimization can be accomplished, for example, through the installation of a mixer in the composting process. This will increase the amount of organic matter that can go in the machine. A sifter would be another addition that would help optimize the process to use the resulting compost material for landscaping purposes. If additional capacity is still required once optimization is completed, external composting facilities should be investigated.

Recommendation C1.23: The responsibilities for the compost quality should be embedded into Custodial Services management in order to ensure adequate sanitary and quality levels of the compost produced by Concordia’s industrial composter.

Concordia University owns and operates an industrial composter but the quality of compost produced should be monitored in order to be usable for landscaping and urban agriculture purposes. Current inconsistencies in the quality of the compost prevent its optimal use. Embedding the responsibilities of controlling and monitoring the composter into a position within Custodial Services, will improve compost quality and will also ensure efficient usage of the industrial composter. This person could help teaching and research initiatives to understand the key parameters in the composting process depending on the applications of the resulting compost.

Recommendation C1.24: A community-wide multi-stakeholder awareness campaign should be established in order to consistently and regularly educate Concordia’s community about the economic, social, and environmental costs of waste.

The Environmental Coordinator from the Environmental Health & Safety department would undertake this awareness campaign.

The best waste management practice is to reduce the overall amount of waste (recoverable or not). This involves behaviour changes from both consumer and administrative levels. As the majority of Concordia’s population is made up of a transient student population it is crucial for any waste education and awareness campaign to be run on a regular and consistent basis. These activities should also be directed towards staff, faculty, and vendors to ensure that Concordia’s community understands the real costs of waste.

NOTES:

- Waste recommendations related to food will be discussed in the Food section of Cluster 3 – Equity and Well-being.

Waste Best Practice – Champion: University of New Hampshire (USA)

In 2006, the University of New Hampshire (UNH) combined its heat and power facilities to create the Cogeneration Plant as a primary source of heat and electricity for the five million square foot Durham campus. This is a self-financed initiative with an anticipated payback of less than 20 years. The installation of the Cogeneration Plant

resulted in an estimated reduction in greenhouse gas emissions of 21% in the 2006 academic year in comparison to the previous year.

In 2009, UNH began using processed landfill gas from a landfill gas-to-energy project that uses methane gas from a nearby landfill as the primary fuel for the Cogeneration Plant instead of using commercial natural gas. When fully operational, the gas-to-energy project will provide up to 85% of the campus energy. UNH is the first University in the United States to use landfill gas as its primary fuel source.

Link: <http://www.sustainableunh.unh.edu/ecoline>

Waste Best Practice – Comparator: Université de Sherbrooke (Canada)

In 2002, Université de Sherbrooke implemented a waste management program based on reducing, reusing, recycling and recovering on all of its campuses. Several measures have been taken to reduce or optimize waste on campus including a recuperation system on all three campuses, a compost unit on the main campus, the elimination of disposable tableware on all three campuses, the elimination of bottled water and the creation of Badibus, an online website that promotes and encourages the use of second-hand products to the overall community.

In 2010, the combination of all these initiatives have contributed to the recovery of 806 metric tons of waste diverted from the landfill on all three campuses.

Link: <http://www.usherbrooke.ca/developpement-durable/campus/matieres/>

REFERENCES:

REF1: Sustainable Concordia (2012) – Concordia University Waste Report 2011-2012

REF2: Sustainable Concordia (2011) – Concordia University Waste Report 2010-2011

REF3: Quebec Government – Québec Residual Materials Management Policy, 2011-2015 Action Plan
(http://www.mddefp.gouv.qc.ca/matieres/pgmr/plan-action_en.pdf)

REF4: City of Montreal – Montréal Community Sustainable Development 2010-2015 (Action Plan)
(http://ville.montreal.qc.ca/pls/portal/docs/PAGE/d_durable_fr/media/documents/Action_Plan.pdf)

REF5: City of Montreal (2009) – Plan directeur de gestion des matières résiduelles de l'agglomération de Montréal 2010-2014
(http://ville.montreal.qc.ca/pls/portal/docs/page/enviro_fr/media/documents/pdgmr_2010_2014_fr.pdf)

REF6: Zero Waste International Alliance – ZW Business Principles (<http://zwia.org/standards/zw-business-principles>)

REF7: University of British Columbia – Sort it Out (<http://www.sustain.ubc.ca/campus-initiatives/recycling-waste/sort-it-out>)

REF8: University of Ottawa – Recycling, compost and garbage (<http://www.sustainable.uottawa.ca/campus-initiatives/recycling-and-waste.html>)

REF9: United States Environmental Protection Agency – Terms & Terminology
(http://iaspub.epa.gov/sor_internet/registry/termreg/searchandretrieve/termsandacronyms/search.do)

Water

Advisors: Gerry Barrette, Property & Operations Manager (Loyola), Facilities Management
Daniel Gauthier, Building Performance Coordinator, Facilities Management

The abundance of water in Quebec can be both a blessing and a curse. This abundance has resulted in a low financial cost for water consumption in Quebec, which usually leads to inefficient usage and overconsumption. In Quebec, the average daily consumption of drinking water (industrial and domestic) is 800 litres/person/day compared to the Canadian average of 600 litres/person/day (REF1). As population and industrial activities grow in Quebec, conserving water (both in terms of quantity and quality) is necessary for a responsible and sustainable society.

Current situation:

Bottled Water

Commodification of water through the sale of bottled water has been denounced at Concordia by banning the sale of bottled water in vending machines and at campus-wide food service provider facilities since May 2012. This has been accompanied by retrofitting existing water drinking fountains to include bottle filler systems to encourage the use of refillable containers.

Stormwater Runoff

Some examples of stormwater runoff reduction projects at Concordia have been demonstrated on both the SGW and Loyola campuses. One of these is a vegetated roof initiative between Concordia Facilities Management and Action Communiterre on the Communication and Journalism (CJ) building at Loyola campus. The Molson Building (MB) at SGW has a green roof project on one of its levels however it is not currently being maintained.

Greywater

The LEED-certified MB building is using greywater to reduce fresh water consumption and the cost of water for the building. The Centre for Structural & Functional Genomics, which is also LEED-certified, is funneling rainwater to irrigate trees and bushes.

Waterless Urinals

Waterless urinals were installed in the CC, CJ and GM buildings but two were removed from the GM building due to maintenance difficulties. As an alternative to avoid these difficulties, low-consumption urinals have been installed in the MB, Genomics, and PERFORM buildings.

AASHE STARS 2012 Results: 2.25/10.25 (22%)

Main gains occurred in the following credits:

- Water consumption metering at building-level in at least one building
- Adoption of a stormwater management process for ongoing campus operations

Main losses occurred in the following credits:

- Reduction in water consumption per weighted campus user compared to Concordia's 2005 baseline

Recommendations:

Recommendation C1.25: Greywater systems should be incorporated into all Concordia’s renovation projects, as well as new constructions. This will reduce fresh water consumption and also proactively align Concordia’s operations with governmental regulations.

Since the City of Montreal is planning to meter water consumption of institutions (REF2), Concordia would benefit in optimizing its water consumption systems to be able to use greywater (and rainwater) for non-potable usages. In the short-term, these benefits would include reducing fresh water consumption and opportunities to demonstrate Concordia’s commitment to sustainability issues. In the medium to long-term, systems can be used for adhering to upcoming regulations as well as for facilitating future LEED certifications.

Recommendation C1.26: An education program targeted to users and maintenance staff should be further developed for water reducing technologies such as waterless urinals.

Waterless urinals have been installed in areas at both the Loyola and the SGW campuses with mixed results, leading to the removal of two units in the GM building. One of the major reasons for dissatisfaction with this technology was a lack of awareness for proper use and maintenance by users and cleaning staff.

Guidelines created for energy efficiency technology awareness programs could be adapted to develop a water reduction awareness program at Concordia. See the Energy section for an example of an energy efficiency technology awareness program.

Recommendation C1.27: An internal “Water Sustainability Task Force” should be formed at Concordia that includes staff, faculty researchers and students with the objective of developing and implementing solutions for reducing water consumption at Concordia.

As with other operational aspects, sustainability issues of water at Concordia could be addressed in partnership with researchers, especially considering the newly developed Institute for Water, Energy and Sustainable Systems in the Faculty of Engineering and Computer Science. This task force could be a component of the water reduction technology awareness program.

Water Best Practice – Champion: University of Ottawa (Canada)

The University of Ottawa has implemented a blackwater recycling program to reduce campus water consumption and reduce cooling loads. Water from the Aquatic Center in the Biosciences Complex is collected, filtered, and sent to cooling towers that help cool down buildings on campus. This system provides for 30% of the cooling needs of the buildings. Other projects include waterless urinals, faucet aerators, bottle water free campus, use of drought resistant native plants and storm water management.

Link: <http://www.sustainable.uottawa.ca/campus-initiatives/water-management.html>

Water Best Practice – Comparator: Bishop’s University (Canada)

In 2009, the Sustainable Development Action Group (SGAP) at Bishop’s University began a “Think Global, Drink Local” campaign to raise student awareness on the negative impacts of bottled water. Following a student referendum the following year that resulted in a 75% percent majority, the plan to remove bottled water on campus was successfully implemented and Bishop’s University became the first university in Quebec to ban the sale of single-use bottled water on campus.

Following the student referendum, the university has worked with its campus food provider, Sodexo, to permanently discontinue the purchase of single-use bottled-water in all of its food outlets and vending machines. Further efforts include the removal of eighteen liters multiple-use water dispensers on campus and upgrading water fountains by incorporating a special nozzle to fill reusable water containers.

Link: <http://www.ubishops.ca/sustainability-and-environmental-actions-at-bishops.html>

REFERENCES:

REF1: Ministère du Développement durable, Environnement, Faune et Parcs du Québec – Water Management in Québec, Public Consultation Document (<http://www.mddep.gouv.qc.ca/eau/consultation-en/themes3.htm>)

REF2: Ville de Montréal – Mesure de la consommation d’eau (http://ville.montreal.qc.ca/portal/page?_pageid=6497,54393624&_dad=portal&_schema=PORTAL)

CLUSTER 2 – AWARENESS AND PARTICIPATION

The Awareness and Participation cluster addresses topics related to the *raison d'être* of a university: education, research, and serving the community. This section outlines the opportunities to increase the university community's awareness of sustainability issues and its participation in solving them. Capitalizing on these opportunities will create graduates who are equipped to make sustainable decisions in all fields of work, as well as creating research and community service opportunities that are relevant and connected to the needs of local and global communities.

Curriculum

Advisors: James Grant, Professor, Department of Biology
Bradley Tucker, Associate Vice-President, Enrolment and Student Services

The curriculum section of the STARS measurement framework is given the highest weight by points in the assessment. This is perhaps because the impact of sustainability principles embedded within the curriculum has the potential to greatly outweigh the impact of any particular operational change within the University. Students are the future leaders and professionals who will strongly influence the development of society. Sustainability concepts and issues must be incorporated in the curriculum if students are to be prepared for dealing with environmental, social, and economic equity issues.

Current situation:

Definition of Sustainability

Concordia does not currently have an official definition of sustainability with which to determine the number of sustainability-related courses provided. This creates one of Concordia's greatest deficits in the STARS rating system, since no points can be provided for the sustainability-related courses without this definition.

Sustainability-related Courses

Despite a lack of an official definition for sustainability, there are courses at Concordia that are obviously related to sustainability, for example GEOG 301 – The Sustainable University Campus. While some departments offer one or more courses related to sustainability, others offer none. In addition, many sustainability-related courses are not mandatory therefore students can complete their undergraduate or graduate education without taking a single class related to sustainability.

The Sustainability Action Fund created a partnership with the Faculty of Arts & Science and the Loyola College for Diversity and Sustainability to create a project to promote sustainability courses on campus. This project entails creating a sustainability course inventory and putting on workshops and events to promote sustainability in courses.

Sustainability-related Programs

The Minor in Sustainability Studies at the Loyola College for Diversity and Sustainability was launched in Fall 2011. The goal of this program is to provide students with literacy in sustainability, complimentary to their program of study.

The Geography, Planning and Environment's Master of Environment program has courses dealing with sustainability-related issues. The program's core courses are geared more towards environmental impact assessment, while electives cover various aspects of environmental and social issues.

The Department of Biology offers courses in ecology and environmental science, all of which have a sustainability component. These courses can be taken as part of a general biology program or students can concentrate on the science of sustainability in a Specialization or Honours program in Ecology. Graduate students can pursue a M.Sc. or Ph.D. in Biology with a concentration in ecology or conservation biology.

The David O'Brien Centre for Sustainable Enterprise in the John Molson School of Business (JMSB) recently created a non-academic program, the Sustainable Investment Professional Certification (SIPC) program. The SIPC program is meant for investment professionals interested in an investment approaches and processes that create positive social and environmental impacts. This program includes self-study and online guidance leading to an official SIPC professional designation.

AASHE STARS 2012 Results: 10/55 (18%)

Main gains occurred in the following topics:

- Offering an undergraduate program focused on sustainability;
- Offering graduate programs related to sustainability;

Main losses occurred in the following topics:

- No definition of sustainability in the curriculum leading in the inability to pursue the following:
 - Identification of sustainability-focused or sustainability-related courses;
 - Identification of sustainability learning outcomes in academic programs;
 - Assessment of the sustainability literacy of students;
 - Creation of institutional or departmental initiatives to develop sustainability courses.

Recommendations:

Recommendation C2.1: Concordia should develop an official, community-wide working definition of sustainability. This definition should apply to all sectors of the university.

Developing a definition would be the first step to properly assess and increase the quantity of sustainability-related and sustainability-focused courses at Concordia. It would also help identify research projects with a sustainability focus and help contextualize sustainability projects in the operational sector.

The sustainability definition should be comprehensive and use clear language in order to avoid misinterpretation. All University stakeholders from Concordia's community should be represented in the creation process of the definition. The approval of the definition should follow the proper administrative process.

Recommendation C2.2: The Office of the Provost should facilitate a discussion on the opportunities of further integrating sustainability into academic programs.

To be at the forefront of sustainability in higher education, Concordia should ensure that every student understands the concept of sustainability, as well as how sustainability-related issues will affect his/her future career. Concordia can provide this experience through the implementation of an academic policy or action plan that assess and increase the number of sustainability-related classes. The Sustainability Action Fund and Faculty of Arts and Science Curriculum project started this process already. Under the Office of the Provost, a working group coordinating these types of projects could eventually involve other faculties on campus in defining sustainability and for the course inventory to cover all faculties, not just the Arts and Science.

Recommendation C2.3: A multi-departmental group of interested faculty members should be created to put forward a graduate-level degree in Sustainability.

Most sustainability issues are multifaceted, involving politics, economics, technology, social, and environmental sciences. Although sustainability-related programs are currently offered, a multi-departmental graduate program focused explicitly on sustainability would be more suited to address this complexity.

This program could provide opportunities for students to acquire work experience (e.g. co-op program, internship, research, etc.) before the completion of the degree. Opportunities for work and/or research experience during the degree would help understanding the real challenges of sustainability. These opportunities should occur before the completion of the degree in order for students to integrate this experience as part of their learning process. An alternative to work opportunities could be asking applicants to have at least 2 years of work experience prior to entering the program.

Such a program should strive to attract students from every department. Connecting people from different backgrounds will be a critical component of this program, since sustainability requires balancing broad considerations in traditionally separate fields of study, research and work.

As there are currently no Master degree programs in Montreal specialized directly on sustainable development or sustainability (i.e. understanding the complex linkages between the environment, society, and the economy), Concordia would be a pioneer in offering such a degree.

Curriculum Best Practice – Champion: Pennsylvania State University (USA)

Pennsylvania State University (Penn State) maintains multiple programs that engage students in applying the principles of sustainability. The curriculum currently includes, among others, the following programs: The American Indian Housing Initiative (AIHI), National Energy Leadership Corps (NELC), Renewable Energy for Central America (RECA), and the Hybrid and Renewable Energy Systems (HyRES). All these programs, which include credit-based courses, are designed to deliver transformative educational experiences that prepare participants to become leaders of positive change in their studies, workplaces, and personal lives.

Penn State also launched, in the summer of 2012, a new intercollege Minor in Sustainability Leadership that allows students in any major to incorporate sustainability as a significant theme in their undergraduate degree program.

Through a combination of coursework and immersive experiences in sustainability, students develop the knowledge, skills, and attitudes required to become sustainability leaders in their respective fields.

Link: <http://sustainability.psu.edu>

Curriculum Best Practice – Comparator: École Polytechnique de Montréal (Canada)

At École Polytechnique, all engineering departments offer a sustainable development orientation near the end of the program. The orientation comprises 4 courses of 3 credits each and some of these courses can be pursued at the Université de Montréal or HEC Montréal. These courses introduce undergraduate students to sustainability-related issues such as energy, transportation, law, politics, and biodiversity.

A graduate level diploma in sustainable development is also offered with 5 different options of 30 credits (1 year) each. All options are based on the same core courses of 15 credits complemented with other courses specific to each option. A 30 credit (1 year) certificate in sustainable buildings is also offered, primarily for professionals with working experience related to buildings and construction.

All undergraduate degrees contain two activities that can address sustainability issues: a four month-long mandatory paid internship and a final integrating project (6 credits). After the mandatory internship, a report is presented that must contain a description of all aspects of the internship related to sustainability. Those choosing the final integrating project with the sustainability theme must work in a multidisciplinary team composed of students from different departments.

Link: <http://www.polymtl.ca/durable/etudier/index.php>

Co-curricular Education and Awareness

Advisors: Faisal Shennib, Environmental Coordinator, Environmental Health & Safety
Alexander Oster, Coordinator, Student Experience, Dean of Students

Learning conducted outside of a specific program of study is an important aspect of a student's experiential journey at Concordia University. Co-curricular activities provide students the opportunity to put into practice what they learn. This is a particularly efficient way to gain practical experience in sustainability work and to complement academic understanding of the common practices and obstacles in the sustainability field.

Current situation:

Promoting Volunteerism

Through the Leadership, Initiative, and Volunteer Engagement (LIVE) Centre, volunteering opportunities are available to Concordia's community, including on and off campus, as well as at the international level. In an effort to promote volunteerism as a source of development for professional skills, the Co-Curricular Record (CCR) was established as an official recognition of volunteering activities through a record complementing the academic transcript of students. The program is now available online but with low usage, possibly due to a low awareness of its existence by students. A coordinator for this program is now in charge of raising awareness of the CCR, which should increase its visibility and usage in the coming semesters.

Sustainability-related Co-curricular Education

There are opportunities to participate in sustainability-related Co-curricular activities at Concordia, these include:

- Sustainability job and volunteer positions on campus – the majority are applicable for the CCR
- Multi-stakeholder student groups on campus such as: Sustainable Concordia, Concordia Greenhouse, Frigo Vert, Center For Gender Advocacy, People's Potato, Café X, John Molson Sustainable Business Group, Concordia Student Union, Arts and Science Federation of Associations.
- Research Centres and Institutes such as: David O'Brien Centre for Sustainable Enterprise, Loyola Sustainability Research Centre, Concordia Institute for Water, Energy and Sustainable Systems, CN Centre for Studies in Sustainable Supply Chain Management.

There are also sustainability-related internship opportunities related to academic programs such as: LOYC 398 – Internship on Sustainability (Minor in Sustainability Studies), JMSB Sustainable Internship Program.

Sustainability-related non-credited Courses

City Farm School

The Concordia Greenhouse City Farm School project was developed to facilitate education through an experience-based model. The primary goals of this project are to respond to a growing interest in issues around food sovereignty and the practice of urban agriculture. It also provides an opportunity for students to work with the community. Students gain hands-on experience by planting and managing gardens in one of three categories: Community vegetable garden plot, Medicinal plants, Gardening in schoolyards.

GradProSkills

Concordia University's Graduate and Professional Skills training program (GradProSkills) offers skills development in different domains such as leadership, communication, information technology, well-being, etc. One workshop named "Managing a Sustainable House on a student budget" was offered in Winter 2013 as part of the well-being domain. GradProSkills is interested in offering other sustainability related workshops.

Sustainability Awareness through Education Campaigns and Events

Various programs on campus offer opportunities for students to learn about sustainability issues through educational or participative events and activities related to sustainability. These help to raise awareness of sustainability issues and opportunities on campus. A few examples include:

- New student orientation from Concordia Student Union (CSU)
- Sustainable Concordia's Zero Waste Campaign (which engages in in-person outreach on both campuses)
- General sustainability education events and activities advertised through Sustainable Concordia website, newsletter and Facebook page, David O'Brien Centre for Sustainable Enterprise blog, Facebook page and Twitter.
- The Distinguished Speaker Series conferences hosted by the David O'Brien Centre for Sustainable Enterprise. ASFA's Green Week and CSU's Green Month
- The Concordia Greenhouse regularly offers workshops to members of the Concordia community on different aspects of urban agriculture.

This number of informal educational outlets only occasionally works in coordination, leading to issues of competing event scheduling, and missed opportunities to leverage each network for promotion and participation.

Sustainability Hub Workgroup

In an attempt to help coordination sustainability specific activities, the Sustainability Hub Workgroup was created. This is an informal meeting made up of sustainability leaders on campus who meet monthly to discuss what each group is working on and planning in terms of events. The Hub Workgroup also puts on the Concordia Sustainable Champions Award Gala. Members of the Hub Workgroup and others have remarked that unfortunately due to a lack of data on people's sustainable actions, awareness, and interests there is still a lack of coordination in sustainability marketing at Concordia. Collecting this information and coordinating marketing is an important step to take in raising the effectiveness of outreach.

AASHE STARS 2012 Results: 17/18 (94%)

Main gains occurred in the following topics:

- Having a student sustainability educators program (e.g. initiatives at Sustainable Concordia)
- Pursuing student sustainability outreach campaign (e.g. Zero waste campaign)
- Incorporating sustainability in new student orientation (e.g. new student orientation from CSU)
- Having sustainability outreach materials (e.g. Sustainable Concordia's website and newsletters)

Main losses occurred in the following topic:

- Residence models demonstrating sustainable living principles;

NOTE:

Information about volunteerism is also available in Cluster 3, in the Public Engagement & Participation section.

Recommendations:

Recommendation C2.4: In the context of reviewing the Course Outline Template, the Centre for Teaching and Learning Services should consider incorporating a short section for teachers to list possible co-curricular activities at Concordia related to the course topic. This modification should be effectively communicated to faculty members and departmental chairs.

As both curriculum-based and co-curricular activities are important in the experiential development of students, it would be a good practice for professors to include a list of co-curricular activities at Concordia related to the topic at hand. This is even more important for courses related to sustainability, as practical experience related to sustainability is a necessity for students to fully understand the common challenges in implementing sustainability activities and practices. Professors should be encouraged to consult with the Sustainability Coordinator, which can then direct them toward other key resources (e.g. LIVE Centre, Sustainable Concordia, etc.) to identify existing and potential opportunities for students to participate in projects related to their course.

Recommendation C2.5: A sustainability survey should be conducted periodically to track the community's sustainability awareness, behaviours, and interest. This survey would be the basis for a more coordinated outreach effort that can benefit the entire sustainability community at Concordia.

This survey would answer questions such as whether members of Concordia's community are aware of particular sustainability groups and opportunities on campus, and could track their knowledge of issues and their behaviours on and off campus. This could serve as the basis for a measured behaviour change campaign. It would also provide the opportunity to improve the effectiveness of sustainability services on campus and assess the demand for sustainability courses and programs. A committee (i.e. the Sustainability Hub – an informal informational group made up of sustainability leaders on campus that meets monthly and also jointly puts on the Concordia Sustainable Champion Award Gala) could function as the axis within which sustainability groups on campus could take advantage of this survey information for coordinating effective awareness and educational campaigns.

This survey program should be coordinated with the Institutional Planning Office and its development should be done in conjunction with the members of the Sustainability Governance Framework.

Recommendation C2.6: Integrating sustainability in non-credit courses and training activities should be encouraged. This should be coordinated in partnerships with existing sustainability groups.

Educational groups on campus offer training and workshops for skill development. For example, GradProSkills offers opportunities for graduate students to develop important technical and soft skills, while the Greenhouse, Sustainable Concordia, and the Concordia Student Union offer training and workshops related to sustainability. In the past, the Sustainable Ambassador program coordinator of Sustainable Concordia had the mandate to coordinate GradProSkills training and workshops related to sustainability. Due to a lack of funding, the Sustainable Ambassador position has been cut therefore a solution would be to reinvest in this position to facilitate collaboration between sustainability groups and co-curricular activities.

Recommendation C2.7: Academic, Department, and Program Advisors should keep current of sustainability-related courses and co-curricular activities at Concordia to help students better integrate the sustainability aspect in their academic experience.

Based on the previous recommendations, advisors could help students in effectively integrating the sustainability aspect in their course program, as well as help them find sustainability-related co-curricular activities at Concordia to complement and maximize their academic experience. This could be supported by the Dean of Students Office.

Recommendation C2.8 In collaboration with Concordia's different student associations, the process of documenting and recognizing students co-curricular activities in the Co-Curricular Record (CCR) should be simplified and automated in order to further highlight involvement in student life.

Co-curricular activities help to develop soft skills that are increasingly called for in society. Concordia's Co-Curricular Record (CCR) is an official document that can recognize these activities although the registration process is initiated only when a student requests it. Registration in the CCR should be done automatically by the organisation in charge of the activity with approval by the Dean of Students Office.

A simplified and automated process could facilitate a student's application process for graduate studies, scholarships, and awards. A streamlined process could also be better integrated with Faculties academic programs for improved recognition.

Co-curricular Education Best Practice – Champion: University of British Columbia (Canada)

UBC's Sustainability Education Resource Centre helps students to incorporate sustainability in both their course program as well as helping them find co-curricular opportunities for a more sustainability-oriented education. Such opportunities can be found through UBC's Sustainability Ambassadors Peer Program where students can engage in a more holistic learning process and can also contribute in sharing their sustainability knowledge with other members of the community through awareness-raising events.

The UBC Sustainability Initiative (USI) also financially sponsors graduate students for a voluntary summer internship through USI Greenest City Scholars Program, allowing graduate students from any academic discipline to participate in projects related to Vancouver's Greenest City 2020 Action Plan. This internship allows graduate students to get hands-on experience related to sustainability even if their own area of research is not directly related to that topic.

Other sustainability co-curricular activities include: "Sustainability in Residence" where students living in residence learn to get involved in enhancing sustainability; a book club / lecture series called "UBC Reads Sustainability" where students are invited to learn outside of the classroom by assisting and participating to discussion with well-known authors on sustainability topics; as well as about 40 student groups related to sustainability.

Link: <http://sustain.ubc.ca/get-involved/students>

Co-curricular Education Best Practice – Comparator: École de Technologie Supérieure (Canada)

The École de Technologie Supérieure (ÉTS) has prioritized the following objectives: promote sustainable development through communication and training of the community and the general public; encourage members of the university community to implement projects that contribute to sustainable development; cooperate with industrial and academic partners towards the implementation of sustainable development practices; and promote the knowledge and skills of the community in matters of sustainable development.

ÉTS also create incentives for students to actively learn about sustainability by offering paid opportunities for them to work as part of the “Brigade Verte” (the green squad), a student team financed by the office of sustainability. This green squad creates activities for raising awareness on sustainability issues, builds week-long events devoted to sustainability, and offers support for environmentally-responsible events.

Link: <http://www.etsmtl.ca/services/dd/accueil>

Research

Advisors: Brenda Fewster, Senior Advisor, Planning and Strategic Initiatives, Office of the Vice-President, Research & Graduate Studies
Justin Powlowski, Interim Associate VP, Strategy & Operations, Office of the Vice-President, Research & Graduate Studies
Peter Stoett, Director, Loyola Sustainability Research Centre

Research on sustainability is important in order to understand the different linkages and complexities between the environment, society, and economic development. New theoretical concepts, technologies and strategies are needed for society to pursue a more sustainable path. Researchers in higher education institutions are also well positioned to connect students and staff with industries and external organisations.

Current situation:

Explore Concordia

Research at Concordia is being communicated in different ways, including the new portal titled *Explore Concordia*, which allows a search by keyword or researcher's name (REF1). This can help to answer the "Who does what?" question about research at Concordia and at the same time, help to direct searches for sustainability specific research.

Spectrum Research Repository

Following the Senate Resolution on Open Access in April 2010 (REF2), it is now required for all Concordia researchers to deposit an electronic copy of any scholarly article accepted for publication in a peer-reviewed journal in the Spectrum Research Repository. The Spectrum Research Repository is an online database open to the public (REF3). This open access to research is in line with the tenets of sustainability, since free access to information can help the development of sustainable social systems and social and environmental justice.

Loyola Sustainability Research Centre (LSRC)

In late 2012, the Loyola Sustainability Research Centre (LSRC) was created. It is based at the Loyola College for Diversity and Sustainability. The LSRC is a transdisciplinary research nexus bringing together over 30 researchers from a wide variety of disciplines, including researchers from other universities. The thematic foci of the Centre are biodiversity conservation, and climate change mitigation and adaptation.

Concordia University Sustainability Related Institutes and Research Centres

Concordia is home to different institutes and research centres that are directly involved in sustainability research:

- Centre for Zero Energy Building Studies
- CN Centre for Studies in Sustainable Supply Chain Management
- Concordia Institute for Water, Energy and Sustainable Systems
- David O'Brien Centre for Sustainable Enterprise
- Loyola Sustainability Research Centre

Concordia University Research Chairs (CURCs)

In February 2013, the following Concordia University Research Chairs (CURCs) were created or renewed. All of these CURCs focused on increasing knowledge of sustainability issues:

- A newly created Tier 2 research chair in Climate Science and Sustainability, directed by Dr. Damon Matthews.
- A renewed Tier 1 research chair in Integration of Solar Energy Systems into Buildings, directed by Dr. Andreas Athienitis.
- A renewed Endowed research chair in Sustainable Enterprise, directed by Dr. Paul Shrivastava.

Applying Concordia Research at Concordia

In 2009, a solar energy wall was installed near the top of the MB building. This specific technology, first of its kind worldwide, is generating electricity as well as heat to meet parts of the daily operating needs of the MB building. This solar energy wall is a realisation spawning from research directed by Dr. Andreas Athienitis from Concordia's Department of Building, Civil and Environmental Engineering.

AASHE STARS 2012 Results: 10.74/21 (51%)

Main gains occurred in the following topics:

- Identifying sustainability-related research

Main losses occurred in the following topic:

- Identifying all faculty members engaged in sustainability-related research

Recommendations:

Recommendation C2.9: Concordia should create an avenue to enhance information sharing and to connect sustainability researchers at Concordia. This could be done through a formal structure organized by the Office of Research.

There are many researchers working on sustainability issues that might not be aware of researchers in other departments and faculties working on similar issues but from a different angle. It would be beneficial to offer the opportunity for these researchers to know about other ongoing sustainability research on campus. This interaction could lead to information sharing; increase the potential for applied research; and can help researchers take advantage of funding opportunities in different departments and faculties. Information sharing could also be facilitated by connecting diverse research centres together or by forming research clusters (i.e. groups of research centres). The Deans of each Faculty could play a key role integrating these efforts.

Recommendation C2.10: The Concordia Open Access policy should be further communicated throughout the Concordia research community in order for this policy to realize its full potential.

Concordia Open Access policy states "in the specific case of any scholarly article accepted for publication in a peer-reviewed journal, from now on requires all faculty members to deposit an electronic copy in *Spectrum* along with non-exclusive permission to preserve and freely disseminate it." (REF2) As evidenced through a search for published articles on sustainability-related research at Concordia, there seems to be a low adherence to the Open Access policy as there are sustainability-related articles published by Concordia researchers that are not found in

Spectrum. The benefits of the Open Access portal (e.g. wider dissemination of research results, improved chances of getting publicly-funded research grants, etc.) should also be further communicated to Concordia’s research community. A communication strategy could include, for example, short video interviews from researchers and graduate students currently benefiting from the Open Access portal.

The existing Concordia Open Access Author Fund should be further communicated to Faculty members to promote publishing in peer-reviewed open access journals.

Recommendation C2.11: The Spectrum Research Repository should offer authors categorizing options for their articles with specific research clusters and keywords, in order to create a uniform categorizing scheme between the Explore Concordia portal and Spectrum.

It can be difficult to assess if a specific research article is related to sustainability, especially for non-experts since authors may not indicate sustainability as a keyword. In *Spectrum*, the author can enter keywords but even if an article can be related to sustainability, the author might not explicitly indicate it (e.g.: a search in Spectrum of the words “sustainability”, “sustainable” or “sustain” did not locate a research article on intergenerational justice, a concept directly linked with sustainability).

Predefined Research Clusters (either as dropdown menus or clickable words) as an additional indicator for authors to choose from will help standardize further refine searches made in *Spectrum*. Another way to accomplish this is to link *Spectrum* with the keywords used in the Explore Concordia portal. The resulting option to “Browse by Research Cluster” could then be implemented in *Spectrum*, allowing sustainability-related research to be more easily searched and found.

A potential challenge in adequately categorizing research related to sustainability might arise due to the lack of a working definition of sustainability for Concordia’s community. See **recommendation C2.1** in the Curriculum section.

Recommendation C2.12: Concordia University should further facilitate research collaboration between the Office of Research and operating departments of Concordia University such as Facilities Management, especially when related to sustainability initiatives such as energy efficiency, waste reduction, or urban agriculture projects. This collaboration could be initiated through an internal “call for collaboration”.

When needed, internal collaboration would increase the visibility of sustainability-related research at Concordia while at the same time, ensure that Concordia’s community directly benefits from that research. Sustainability outcomes from research done at Concordia should help Concordia itself to become more sustainable. A good example is the MB building’s solar wall, which emerged from a partnership between Concordia researcher, Dr. Andreas Athienitis and Concordia University’s Facilities Management department. Another possible collaboration channel could be between researchers in food security and urban agriculture and the Loyola City Farm School and Concordia Greenhouse.

While researchers’ interests and time constraints might not always match with the community’s needs, incentives should be created to connect these groups when involved in sustainability issues.

Recommendation C2.13: During the revision/consultation process of the Strategic Research Plan, the three concepts of sustainability (environmental, social, and economic) should be emphasized in all spheres of research at Concordia (e.g.: development and well-being, human systems, energy and environment, etc.)

Sustainability is evolving as an underlying framework for research as evidenced by most research clusters at Concordia, as well as most community groups found at Concordia. An explicit strategic emphasis on sustainability in research should be developed in order to capitalize on this emerging trend.

Due to an increasing worldwide demand for research initiatives on sustainability, highlighting the sustainability aspects of current research at Concordia will help enhance the international visibility of researchers, attract new research talent, as well as improve research cooperation partnerships. Such international demand has been demonstrated by the creation of the United Nations University Institute for Sustainability and Peace in 2009 (REF4), the global research platform Future Earth by the Science and Technology Alliance for Global Sustainability in 2012 (REF5), as well as the UN Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (REF6).

Opportunities for funding sustainability research and recognition through sustainability awards are increasing. Promoting Concordia's research through sustainability would help researchers obtain access to these funding opportunities. For example, the J.W. McConnell Family Foundation (REF7), the Nobel Sustainability Trust (REF8), the Fulbright Canada-RBC Eco-Leadership Program (REF9), and the Volvo Environment Prize Foundation (REF10) are offering funding and awards for sustainability initiatives.

Recommendation C2.14: Each faculty's research facilitator should receive basic training on the linkages of sustainability in a research context.

Understanding the linkages of sustainability is a necessity in order to adequately facilitate multidisciplinary and interdisciplinary research. The Office of Research could create the outline of a seminar on this topic and different researchers at Concordia could participate in giving this seminar.

Recommendation C2.15: University Communication Services (UCS) should further promote research, including sustainability-related research through an active communication process.

As sustainability-related research can be found in very diverse research disciplines, it can be difficult to understand and communicate it effectively. An internship could be created at UCS with the goal of creating a communication process that actively detects and promote sustainability-related research efforts at Concordia.

Research Best Practice – Champion: Northern Arizona University (USA)

The Northern Arizona University (NAU) Institute for Sustainable Energy Solutions (ISES) brings together the university's energy experts in research projects with national and international partners. The institute's goal is to increase access to new technologies and shape energy decision-making in both the private and public sectors.

This institute is promoting university research, education, as well as outreach programs related to sustainable energy. ISES capitalizes on the potential of student and faculty initiatives, on coursework, and research projects to address the need to change towards renewable energies. ISES also focuses on addressing the university's

sustainability and climate change mitigation commitments. ISES connects research topics such as: renewable energy, energy efficiency, energy utilization, and education initiatives with state and national research centers.

ISES focuses specifically on research and development, technology transfer, business planning, educational and technical programs, and outreach programs. ISES external partners include national laboratories, universities, First Nations communities, renewable energy companies, and foundations and NGOs.

Link: <http://nau.edu/cefns/centers-institutes/sustainable-energy-solutions/welcome-to-ises/>

Research Best Practice – Comparator: HEC Montréal (Canada)

HEC Montréal has a large team of faculty researchers that have diverse scientific and professional backgrounds, which allows HEC to contribute to the understanding of sustainable development issues from a wide variety of perspectives and cover many dimensions.

HEC also has a several chairs and research groups working on major issues related to sustainability. One such research group includes the Interdisciplinary Research Group on Sustainable Development (GRIDD-HEC). The Interdisciplinary Research Group's mission is to develop the knowledge and practices relevant to managers and organizations in the management of sustainable development.

The GRIDD-HEC is a tool that enables the convergence of research efforts of various researchers in the field of sustainability at HEC Montreal. It also aims to provide a meeting point for practitioners, researchers and students for the development of innovative solutions to the challenges addressed by the transition towards sustainable development.

Link: http://www.hec.ca/developpement_durable/recherche/index.html

REFERENCES:

REF1: Explore Concordia (<http://explore.concordia.ca>)

REF2: Concordia University (2010) - Senate Resolution on Open Access

(<http://library.concordia.ca/research/openaccess/SenateResolutiononOpenAccess.pdf>)

REF3: Concordia University - Spectrum Research Repository (<http://spectrum.library.concordia.ca>)

REF4: United Nations University Institute for Sustainability and Peace (<http://isp.unu.edu>)

REF5: Science and Technology Alliance for Global Sustainability – Future Earth (<http://www.icsu.org/future-earth>)

REF6: Intergovernmental Platform on Biodiversity & Ecosystem Services (<http://www.ipbes.net>)

REF7: The J.W. McConnell Family Foundation – Sustainability

(<http://www.mcconnellfoundation.ca/en/granting/sustainability>)

REF8: The Nobel Sustainability Trust – Sustainability Award (<http://nobelsustainability.org/sustainability-award>)

REF9: The Fulbright Canada-RBC Eco-Leadership Program (<http://www.fulbright.ca/programs/enrichment/eco-leadership.html>)

REF10: Volvo Environment Prize Foundation (<http://www.environment-prize.com>)

Public Engagement and Participation

Advisors: Eryn Fitzgerald, Community Relations Coordinator, Office of the Vice-President, Development and External Relations, and Secretary General
Faisal Shennib, Environmental Coordinator, Environmental Health & Safety
Valérie Millette, Coordinator, LIVE Centre

Universities need to collaborate with their communities in order to strengthen ties between members from the university and the larger community. Sustainability will only be achieved if all groups participate in the efforts to reach that goal. Community engagement at Concordia allows students to develop leadership skills as well as increases partnership opportunities that will benefit both Concordia and the larger community.

Current situation:

Concordia Sustainable Communities Partnership (SCP)

Community engagement is one of the 3 strategic pillars of Concordia University's strategic plan (REF1). In order to fulfill the mandate of ensuring strong and accessible links between the local community and the university, the SCP was created under the Office of the Vice-President Institutional Relations and Secretary General. As a bridging initiative, SCP's purpose is to support, connect, and promote existing community-university partnerships as well as foster the development of new partnerships.

The SCP supports, connects and promotes activities and groups that connect the university with the external community. Some of these activities are sustainability related while others are not. The SCP has conducted a community visioning event, created an inventory of all of the activities found on campus that engage with the external community, developed the SCP website to connect partners and hosted Living Knowledge, a dinner and discussion series on community-engaged scholarship.

Creating Partnerships

City Farm School

While teaching students about urban agriculture and offering different types of volunteering opportunities, Concordia City Farm School also reaches the community by creating partnerships with local organizations such as the NDG Food Depot to which fresh produces are donated annually.

David O'Brien Centre for Sustainable Enterprise (DOCSE)

The focus of DOCSE is to guide organizations towards more encompassing sustainable strategies based on innovation. DOCSE is dedicated to advance sustainability research and develop community outreach initiatives through projects such as:

- Sustainable Investment Professional Certification Program – Certified training to business professionals on Environmental, Social and Governance (ESG) investment criteria.
- Corporate Round-table and Shared Learning – Inviting corporate leaders to discuss about environmental and social issues and sharing some of their success stories.

LIVE Centre

Besides coordinating and promoting volunteerism for students, faculty, and staff, the LIVE Centre (Leadership, Initiative and Volunteer Engagement) of the Dean of Students Office also builds links with community organizations (e.g. End Poverty Now, YWCA Montreal). Although not limited to sustainability initiatives, these links strengthen community as a whole.

Centre for Oral History and Digital Storytelling

The Centre serves as a point of convergence for collaborative digital historical research, teaching and publishing among faculty and students at Concordia, as well as members of local, national and international communities. It is home to several collaborative research projects. Examples of projects include audio tours of the Griffintown neighborhood and the *Dans la Rue* minivan route created in partnership with the community.

Centre for Human Relations and Community Studies (CHRCS)

In association with the Faculty of Arts and Sciences, the CHRCS is engaged in action research, consultation, and training. Since its creation, it has worked with hundreds of organizations, community groups, and agencies. The CHRCS strives to nurture research partnerships between Centre researchers and the community, and to support the dissemination of research outcomes to the community at large.

Research Centres

Many Concordia research centres play a large role in engaging the community with the university through research projects, public workshops and events, and participation on research centre advisory boards.

Governance and Public Participation

Concordia has held an increasing number of public consultations and discussions on a number of important issues over the past years, including issues such as the Strategic Plan, the appointment of a new President, and the revision of the annual budget. The attendance of these events is varied, depending on the subject, but the student attendance seems to be low.

AASHE STARS 2012 Results: 4.5/31.75 (14%)

Main gains occurred in the following topics:

- Partnerships with the local community related to sustainability (e.g. NDG Food Depot, End Poverty Now)
- Inter-campus collaboration on sustainability (e.g. work done with CRÉPUQ, Sierra Youth Coalition Sustainable Campuses Project)

Main losses occurred in the following topics:

- Offering continuing education courses on sustainability
- Measuring the proportion of students participating in community service
- Measuring the amount of time spent by students participating in community service
- Institution advocating public policies supporting sustainability

Recommendations:

Recommendation C2.16: The Center for Continuing Education should consider developing a Sustainable Development Institute in order to offer the community an opportunity to complement their curriculum with skills specifically related to sustainability.

Concordia's Centre for Continuing Education contains different programs offered to the community, which are seen as an investment in personal and professional growth. Similar to the existing Computer Institute and the Language Institute, it would be extremely relevant to create an institute that offers learning opportunities related to sustainability. Courses could provide training in Environmental Management Systems (EMS), ISO 14000, ISO 26000, Life-Cycle Analysis (LCA), ecological economics, sustainability assessment, etc. Such courses could be offered online in order to reach and accommodate a larger part of the community. They could also be implemented in other existing institutes for example a language class specialized on French-English sustainability and environmental terms or a computer course on Geographical Information Systems (GIS).

Recommendation C2.17: Concordia should explore avenues for connecting community members (students, staff, and faculty) through an online platform in order to increase general communication on topics such as community projects, collaboration opportunities, volunteer opportunities, and community issues.

Many students, staff, and faculty are involved in community service activities within and outside of Concordia's community. Such initiatives could benefit from the know-how and participation of other members of Concordia's community. Although an online social platform such as Concordia's Facebook allow community members to share ideas, questions, etc., it is more focused on communication from Concordia to the community than on bidirectional communication. Shoptalk is currently the only venue for inter-staff/faculty communication and the email platform is out-dated and only a small portion of staff participates.

An online platform should be created where each student can voluntarily describe their current community service activities (both on and off campus) for those who want to get connected with other members of Concordia's community sharing the same activities.

Various online spheres should be explored to encourage communication and collaboration through an informal social network. An online forum could be considered for this purpose, which would allow communications to be organized by subject. Muut is an example of a modern design solution for a forum (REF2)

Recommendation C2.18: The Volunteer and Leadership Fair should also be promoted to Montreal's general public by inviting them to participate in community volunteering. This will further strengthen community ties, an important element in creating a more sustainable society.

Now organized by Concordia's LIVE Centre, the Volunteer and Leadership Fair is an opportunity for Concordia's students, faculty, and staff to meet with both on- and off-campus community organizations and for these organizations to meet with Concordia's community and attract new volunteers. As an effort to further strengthen community ties, the Volunteer and Leadership Fair should also be promoted to the general public to enhance community engagement in all directions. Connecting communities together is one important aspect of sustainability as sustainable development initiatives (both at Concordia and in general) will only really be efficient through an integrated community sharing similar views on long-term well-being.

Recommendation C2.19: A feedback system on building services should be created through social media outlets in order to promote community engagement in the continuous improvement of Concordia University.

Several staff members expressed interest in seeing the development of opportunities for on-the-spot feedback on building services during the consultation on operations in the winter of 2013. Signage could be created to indicate an email address, phone number, or Twitter and/or Facebook address that could be contacted to report any problems or suggestions. Social media could help flag an issue or suggestion to other community members who could weigh-in on the subject. This could give the administration a clearer idea of where the community's priorities lay. Monitoring these requests or suggestions would need to be taken on by an existing or new position, perhaps one within the service center, or another department if the nature of the feedback were to be more general than operations.

Recommendation C2.20: Increase community participation in decision-making by using online community governance tools and by proactively outreaching to the community for involvement, particularly using smart social media tactics.

Concordia has created opportunities for the community to weigh-in on important issues through series of consultations throughout the last few years. These have been varied in attendance, though consistently not well attended by students. Students seem to ignore emails regarding these events and might be more likely to attend the events if social media such as Facebook are used. This is a particularly effective tool for raising and tracking potential attendance of an event. Facebook users who mark themselves as attending are visible to other invitees, thus creating interest within social circles to attend the event along with friends.

Public Engagement Best Practice – Champion: Simon Fraser University (Canada)

Simon Fraser University (SFU) has indicated their goal of being Canada's most community-engaged research university as demonstrated by their motto "Engaging the World". SFU has promoted, among others, the following activities:

- SFU Surrey – TD Community Engagement Centre: Based on a 750,000\$ donation from TD Bank Group announced in May 2013, the Centre's mandate is to inspire and influence Canadians to pursue post-secondary education. The Centre will offer opportunities for SFU's faculty and students to work and strengthen ties with the South Fraser local community.
- SFU's India Initiative: Creating opportunities for students, scholars, researchers and businesses collaborations in both BC, Canada, and India.
- SFU Public Square: Hosting collaborative community events such as the annual Community Summit (focus on local and international issues of public concern) or City Conversions (lunch-time meet-ups for discussions on topics affecting Vancouver and the Lower Mainland).
- SFU UniverCity: A sustainable residential community development that generates income without damaging the environment. Incomes generated are injected in an endowment fund to support teaching and research at SFU.

Link: <http://www.surrey.sfu.ca/engage> & <http://university.ca>

Public Engagement Practice – Comparator: Moraine Valley Community College (USA)

Moraine Valley Community College (MVCC) hosted and co-facilitated a 2-day sustainability-planning workshop for 12 member institutions of the South Metropolitan Higher Education Consortium. The Consortium met an accomplished goal of creating skeleton sustainability strategic plans, building a community of peers and sharing collective knowledge based around sustainability.

Over 100 participants from multiple departments of the member institutions came together for 2 days to primarily focus on and strategize sustainability initiatives. Speakers from the State and from a leading community college in Oregon presented to board of trustee members, presidents, executive leaders, staff, faculty and student representatives from each of the 12 member institutions, engaging them all in a call to action for sustainability.

Link: <http://www.morainevalley.edu/sustainability/default.htm>

REFERENCES:

REF1: Concordia University Strategic Directions

(<http://www.concordia.ca/strategicplanning/supportingdocuments/strategicdirections>)

REF2: Muut (<https://muut.com>)

CLUSTER 3 – EQUITY AND WELL-BEING

A sustainable society necessarily includes aspects of human equity and well-being. Each member of the community needs to be considered a valued and important element when creating sustainable initiatives. Furthermore, a community's surrounding environment needs to be favourable for personal development.

In a university, human equity and well-being can be enhanced by focusing on supplying sustainable food through equitable services, by embracing diversity, by ensuring affordability of university's services and by promoting a sustainable work environment through human resources programs and policies.

Food

Advisors: Satoshi Ikeda, Associate Professor, Department of Sociology and Anthropology
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Dan Kielback, Financial Coordinator, Concordia Food Coalition
Jackie Martin, Greenhouse Coordinator, Concordia Greenhouse
Benjamin Prunty, VP Sustainability, Concordia Student Union

Food systems are important since they are directly linked to other sustainability-related areas such as purchasing, waste production/processing and even human equity. The production, distribution, preparation, and consumption of food link people with its surrounding physical and global human environments. It is important to understand the repercussions of these actions on the environment, global worker conditions and on human health.

Current Situation:

Student initiatives

Concordia benefits from food-related student initiatives:

- Le Frigo-Vert is a cooperative food store run by Concordia students through a fee levy. The store offers environmentally- and socially-friendly food and products such as fair trade coffee, eco-friendly cleaning products, organic and GMO-free foods, etc.
- The People's Potato is a vegan soup kitchen, which offers meals every day on a by-donation basis. Serving more than 400 meals daily, People's Potato also frequently organizes workshops on the social and environmental justice aspects of food. Other services they offer include a food bank and a collaborative garden located at Loyola Campus.
- Café X is a non-profit student-run café. Café X has locations in the VA and EV buildings. The VA location also incorporates an art gallery called Gallery X.
- Concordia Greenhouse, located on the 13th floor of the Hall Building, grows edible plants and engages in projects such as: Atrium Tea Project, 4 Seasons Growing Project, Vermicompost Project, Vert-a-Ville Project. The Greenhouse holds various gardening workshops and also manages the City Farm School located on the Loyola Campus. Concordia Greenhouse is also a supplier for most of the student-run food organization on campus such as Le Frigo Vert and Café X.

- Concordia City Farm School is an urban agriculture pilot project that runs as an internship based training program for individuals interested in starting urban agriculture projects. The main garden area is located at the Loyola Campus and at the SGW Campus; there are planter boxes and an in-ground gardening area (VA building grounds). Concordia City Farm School is a supplier for some of Concordia's food organizations and they hold a weekly farmer's market in the summer to sell produce to the Concordia and local community.
- The Concordia Food Coalition (CFC) is a multi-stakeholder organization composed of students and representatives of campus organizations that are concerned about the ecological and health implications of the food system at Concordia University. Its aim is to foster a community-based sustainable food system at Concordia that will cover a wider community in the future. The CFC is advocating for the development and implementation of a Sustainability Food Policy at Concordia.

Food & Waste

Conventional food systems generate waste through production, packaging, distribution and consumption. Some initiatives at Concordia strive to reduce waste from food consumption such as the ongoing mug-loan project of Sustainable Concordia which endeavours to implement a coffee mug loan system in order to reduce the consumption of disposable paper cups at Concordia. In the same line of thought, a 0.20\$ discount on coffee is offered on campus when using a reusable mug.

Composting initiatives are also currently in place at both campuses, including an industrial composter located at the Loyola Campus. See the Waste section for more information on composting.

Food & Vendors

Concordia has a contract with Chartwells for its on-campus food services provider. Chartwells is owned by the Compass Group Canada, which, as part of its corporate sustainability strategy, created the Sustainability Commitments & Programs guide. This guide includes the Compass Group Canada's sustainability initiatives, such as sustainable purchasing, environmental protection, and nutrition and wellness. At Concordia, Chartwells has put in place and promoted a "free coffee" initiative when a mug from Sustainable Concordia is purchased.

AASHE STARS 2012 Results: 4.99/8.5 (59%)

Main gains occurred in the following credits:

- Percentage of food grown within 250 miles (400km) of the university
- Offering discounts when using reusable mugs
- Post-consumer food waste composting

Main losses occurred in the following credits:

- Percentage of food and beverage purchased that is grown and processed locally or third-party certified
- Institutional engagement in guiding franchisees operating on campus toward sustainability

Recommendations:

Recommendation C3.1: Concordia should adopt a Sustainable Food Policy.

A sustainable food policy would create a structure and supporting framework for sustainable food initiatives at Concordia. It would be written in collaboration with food-related organisations, such as the Concordia Food Coalition, Concordia Greenhouse, Le Frigo Vert, etc., as well as including inputs from the wider Concordia community. An effective sustainable food policy should establish specific principles for food systems, including but not limited to:

- A definition of sustainable food.
- Raising awareness and educating Concordia's community about food practices that are ecologically sustainable, economically equitable, and socially just.
- A working framework for food operations at Concordia (accessibility, distribution, consumption, waste management, etc.)

Helpful tools and guidelines for the implementation of this policy include:

- Canadian Local Food Plus certification (REF1)
- Food Alliance's guide on sustainable food purchasing policy (REF2)

Recommendation C3.2: Concordia should work with its food service provider to develop a monitoring process ensuring that the provider's sustainability commitments are effectively met.

Previous sustainability commitments by food service providers have often gone unrealized, especially during catering events. Through a mixed management approach between Concordia and the contracted food service provider, a monitoring checklist should be developed and reported to Hospitality Concordia as part of the food service providers' current reporting activities.

Based on previous observations, some potential improvements could include:

- Consistency in the use of compostable dishware
- Appropriate staff training for composting food waste after catering events
- Using water pitchers during catering events in line with Concordia's position and commitment on bottled water
- Increasing awareness of the coffee discount program for reusable mugs

Recommendation C3.3: As an effort to increase the sustainability of the Quartier Concordia neighbourhood, Concordia should approach food vendors of the area and raise awareness of Concordia's sustainable food initiatives.

Sustainable food initiatives at Concordia can benefit from sharing knowledge with surrounding food vendors. A sustainable food vendor handbook could be created to inform and guide Quartier Concordia neighbourhood's food vendors in helping the university towards a more sustainable food system, which in turn has the potential to reduce the amount of external waste brought to Concordia by consumers.

Recommendation C3.4: Initiatives related to urban agriculture should be supported on both the SGW and Loyola campuses.

Increasing urban agriculture at the SGW Campus, for example through gardening initiatives on the Grey Nuns Motherhouse property, would increase the sustainability of the downtown campus by reconnecting students with the physical environment and associated food system. Such a high-visibility urban garden at the core of Montreal's downtown would promote Concordia's sustainability initiatives, as well as provide food for many of Concordia's food-related organisations. Eventually, Quartier Concordia's food vendors could also benefit from products of these initiatives.

Complementing the actual urban agriculture initiatives at the Loyola Campus (e.g. City Farm School), an apiculture project could be implemented at Loyola. Such projects, already successfully implemented at other universities (e.g. McGill University (REF3), Université de Montréal (REF4), and UQAM (REF5)), are high-profile sustainability initiatives (REF6, REF7, REF8) and have many benefits in an institutional framework:

- Increasing the biodiversity of the area, especially in urban regions where bees population is significantly decreasing due to environmental degradation
- Helping urban agriculture initiatives by enhancing the ecosystem service of pollination, hence potentially increasing vegetable yields
- Providing opportunities for educational and research projects
- Creating experiential learning opportunities for students (potentially through the City Farm School)
- Generating potential revenues by selling locally-produced honey
- Increasing the sustainability reputation of the university, especially since other universities have successfully implemented apiculture projects (e.g. McGill University and Université de Montréal)

Food Best Practice – Champion: University of British Columbia (Canada)

UBC has extensive sustainable food practices in place. In 2011, UBC was the first Fair Trade Campus in Canada. Food services at UBC are 100% self-funded. In 2010-2011, about 48% of food purchases were made from local vendors, producers, and processors. UBC Food Services department is connected with academic activities and provides learning opportunities for students enrolled in food-related programs. Recommendations ensuing from the work of students have also been included to improve food services.

Most containers provided by Food Services are biodegradable and compostable, such as coffee cups, napkins, food utensils, take-away containers, etc. A container exchange program has been put in place where, through a one-time membership fee, users receive a reusable food container for food served on campus. A discount is given not only for using reusable mugs but also for using personal reusable containers and an additional fee is put on disposable containers.

UBC also runs the UBC Farm, which is a 24-hectare learning and research facility on sustainable food production, including livestock production. This organisation is student-driven and the majority of the farm revenues are generated from produce sales. UBC Food Services is one of their customers and purchases about \$3,000 of their produce every year. UBC Farm includes teaching and learning experiences (involved in over 60 courses at UBC), as well as opportunities for research projects.

Link: <http://www.sustain.ubc.ca/campus-initiatives/food>

Food Best Practice – Comparator: University of New Hampshire (USA)

The University of New Hampshire (UNH) became the first university in the U.S. to offer a dual major in EcoGastronomy based on the university's expertise in sustainable agriculture, hospitality management, and nutrition.

A Sustainable Food System Task Force is in place with the mandate to make recommendations to the administration and faculty of UNH to become leaders in sustainable food systems through education and research. The Task Force includes members from the administration, faculty, operations, as well as staff from UNH's Sustainability Institute. In 2012, the Sustainable Food System Task Force co-sponsored a free public lecture by the Secretary of the U.S. Department of Agriculture.

Link: <http://www.sustainableunh.unh.edu>

REFERENCES:

REF1: Local Food Plus (LFP) – Canada's Local Sustainable Food System Organization (<http://www.localfoodplus.ca>)

REF2: Food Alliance – A Guide to Developing a Sustainable Food Purchasing Policy
(<http://www.sustainablefoodpolicy.org/SustainableFoodPolicyGuide.pdf>)

Human Resources

Advisors: Carolina Willsher, Associate Vice-President, Human Resources

Achieving a sustainable university community implies that its workforce is working and developing in a suitable work environment, which incorporates human resource policies engaging staff on the sustainability path. This includes social benefits to contribute to an employee's well-being, as well as training programs for staff in order to communicate the university's sustainability vision.

Current Situation:

Social well-being

Since 1992, Concordia has had in place an Employee Assistance Program (EAP) that provides a broad range of services for employees, including counselling services, as part of the Health Benefits employee package. The EAP program was introduced to help employees with work-related and personal issues in a strictly confidential manner.

Concordia offers childcare services to its community (students, faculty, and staff) with one childcare centre at each campus. As both centres are "Centre de la Petite Enfance" (CPE), financial assistance for childcare expenses is available through the Government of Quebec.

Concordia University offers discounts to employees for various products and services, including fitness programs and train travelling services.

As an additional benefit, during the summer period Policy HR-25 (Summer Hours) allows a reduction of the workweek by 3 hours without a reduction in salary (REF1).

Employee Training & Development

Concordia University offers a variety of training and development opportunities to employees. For example:

- The Sustainable Ambassador Program helps employees to evaluate the sustainability level in their work environment, as well as helping them to further train their colleagues on sustainability best practices;
- Tuition fee waivers allow employees to pursue professional development through Concordia courses/programs;
- A conference fund is available through several unions (e.g. CUPEU), allowing employees to assist to external conferences for further professional development;
- Offered through the Human Resources department, many development programs exist at Concordia with a focus on healthy eating, weight management, well-being offered through HR;
- An employee orientation session is organized by the Human Resources department, which includes a 30 minutes presentation on sustainability;

AASHE STARS 2012 Results: 15.75/19.75 (80%)

Main gains occurred in the following credits:

- Sustainable (fair & equitable) compensation to employees;
- Sustainability peer-to-peer educators program;
- Sustainability topics covered in new employee orientation materials;

Main losses occurred in the following credits:

- Evaluating employee satisfaction through a survey or other anonymous methods;
- Availability of training/professional development in sustainability for all staff;

Recommendations:

Recommendation C3.5: An employee satisfaction survey should be created to evaluate job-related well-being.

A routine and anonymous employee satisfaction survey could help identify areas in need of improvements. This survey could be done on-line hence requiring few resources but still providing key statistics on the workforce's conditions (both actual and perceived conditions). A contest-based survey could also incite a greater participation in the survey (e.g.: participating to the survey gives a chance to win a sustainability-related gift).

Recommendation C3.6: A Training & Development workshop about sustainable workplaces should be created for employees.

As with other workshops to improve work efficiency, a workshop on sustainable workplace would teach employees about using material and resources in a more efficient way, as well as raise awareness about the interconnections between the economic, social, and environmental aspects in daily operations at Concordia. This workshop could be coordinated by Environmental Health & Safety and created in partnership with the Sustainable Ambassadors Program.

Recommendation C3.7: Policy HR-6 (Employee Orientation and Integration) should officially indicate the need for an information session on sustainability at Concordia.

As one of the objectives of the HR-6 policy is "to ensure understanding and adherence to the mission and values of the University" (REF2), combined to the Strategic Framework for Concordia University 2009-2014 which indicates that promoting sustainability is a strategic priority for community engagement and social responsibility (REF3), all new employees should consistently receive an information session about sustainability at Concordia. To ensure that such information session is regularly given to all new employees, it should be indicated officially in the Employee Orientation and Integration policy. The current policy does not itemize all areas included in the orientation session provided to new employees, however, a sustainability presentation is indeed a feature of the current orientation program and this should be reflected in the current HR-6 policy.

Recommendation C3.8: Concordia should implement a Sustainable Ambassadors Program.

The goal of the Sustainable Ambassadors Program is to support, through outreach activities, Concordia's staff or faculty members who want to promote sustainability in their workplace. Sustainable Ambassadors would be effective catalysts in the organisation and support of the Concordia Sustainability Hub and annual events such as the Concordia Sustainable Champions Gala. Financial support from Concordia's administration should then be provided for the long-term stability and availability of the program, which is currently dormant for lack of resources.

Recommendation C3.9: Concordia should offer Montreal STM's corporate discount program for all full-time employees purchasing a monthly transport card in order to further promote the use of public transportation.

Considering that full-time employees spend approximately more than a third of their weekly waking hours working at Concordia, the University should join the "OPUS & Cie" corporate discount program of Montreal's STM (REF4) to reflect Concordia's commitment on sustainability and further promote the use of public transportation.

Human Resources Best Practice – Champion: University of British Columbia (Canada)

The University of British Columbia (UBC) has been named one of Canada's Greenest Employers in 2013, for the second year in a row (REF5). This is in part due to the following initiatives:

- Green Research Program: Training and guidance to staff, faculty, and student employees about reducing the impact of research-related activities on the environment.
- Sustainability Coordinator Program: Learning process for employees leading to the role of "Sustainability Coordinator" in their own department, championing sustainability initiatives susceptible to be funded through the "Xerox Workplace Sustainability Fund".
- Social Ecological Economic Development Studies: Program aimed at implementing projects inspired by employees in pursuit of a more sustainable work environment. The coordinators of the program are working to connect these employees with faculty members and students in order to realize these sustainability projects.
- Other initiatives to increase the well-being of UBC's employees include corporate discounts for fitness centres on- and off-campus, tuition fee waivers for employees wishing to pursue professional development through UBC, and an employer pass program allowing UBC's employees to save about 15% on the cost of a public transportation card.

Link: <http://www.hr.ubc.ca>

Human Resources Best Practice – Comparator: Carleton University (Canada)

All employees at Carleton University can subscribe to the OC Transpo Ecopass, allowing about 10% discount in the purchase of the public transport card of Ottawa. The OC Transpo Ecopass is a transit pass available through a payroll deduction program.

In order to assist employees who wish to pursue additional training to enhance their career-related skills, a Career Development Fund is available for courses/training provided by external institutions/organisations.

Carleton University's Healthy Workplace program includes initiatives for a more balanced workplace environment in order to increase the well-being of staff and faculty members. This program, in collaboration with Excellence Canada, includes exercises and weight watching activities, information sessions related to work-life balance, as well as general information for resources on wellness and health at the workplace.

Link: <http://www6.carleton.ca/hr>

REFERENCES:

REF1: Concordia University (2002) – Policy HR-25 Summer Hours

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REF3: Concordia University (2009) – “Reaching Up, Reaching Out”, A Strategic Framework for Concordia University 2009-2014

REF4: Société de Transport de Montréal (STM) – Invest in OPUS & Cie, A green initiative with benefits

<http://www.stm.info/English/tarification/a-opusetcie.htm>

REF5: Canada’s Top 100 Employers – 2013 Canada’s Greenest Employers

<http://www.canadastop100.com/environmental>

Diversity and Affordability

Advisors: Rosemarie Shade, Principal, Loyola College for Diversity and Sustainability
Laura Gallo, Interfaith Facilitator, Multi-faith Chaplaincy
Carolina Willsher, Associate Vice-President, Human Resources

A sustainable community will thrive when all members have an equal opportunity to participate in its betterment. Through enhanced diversity and affordable services, a more integrated community can better manage and understand sustainability challenges.

Current situation:

Diversity

Since 2002, the Loyola College for Diversity and Sustainability (LCDS) has been promoting inter-disciplinary education and research. This academic diversity is reflected in two programs: a Minor in Diversity and the Contemporary World, as well as a Minor in Sustainability Studies. In 2012, LCDS became the administrative centre for the Loyola Sustainability Research Centre.

There are several initiatives at Concordia promoting a better understanding of diversity within communities, such as:

- Embracing Diversity: workshop for both managers and staff, sponsored by the Human Resources department
- Talks on Diversity: Lecture series presented by the Department of Political Science and Le Centre Métropolis du Québec – Immigrations et métropoles
- Cultural Diversity Week: Week dedicated to showcasing variety of cultures on campus, held by the International and Ethnic Associations Council (a student association)
- Holidays Around the World: For the past 4 years, Concordia Multi-faith Chaplaincy invites the community at Loyola Chapel to explore and experience different cultural and religious traditions from around the world
- Colors of Concordia: A cyclist group of students, faculty, staff and alumni raising money for the Colors of Concordia Cultural Initiative Fund (CCCIF), which supports organizations whose objectives embrace diversity and promote cultural awareness

Assistance

Underrepresented groups are also supported on campus through various organizations such as:

- Aboriginal Student Resource Centre: Helping and supporting First Nations, Métis and Inuit students
- Concordia University Student Parents Centre (CUSP): Offers assistance to student parents in pursuing their studies at Concordia
- Several cultural specific student associations such as the Iranian Students Association of Concordia University and the Concordia Chinese Student Association. A full list of all student associations is available on the Dean of Students webpage: <http://www.concordia.ca/students/clubs/list.html>

In order to make studies at Concordia more affordable, there are services dedicated to students in need. For example, both the CSU Emergency Food Vouchers and the Multi-faith Chaplaincy Student & Emergency Food Fund are helping students with a restricted income. Furthermore, the University Work Study Program is creating on-campus work opportunities for students with proven financial needs.

NOTE:

Other affordability initiatives can be found in the previous Food section.

AASHE STARS 2012 Results: 11.5/13.75 (84%)

Main gains occurred in the following credits:

- Accessibility and affordability programs for low-income students
- Diversity and equity coordination (in Human Resources)
- Support programs for underrepresented groups

Main losses occurred in the following credits:

- Assessing and measuring campus diversity culture and using the results to guide policy, programs, and initiatives

Recommendations:

Recommendation C3.10: Concordia should elaborate key indicators to measure and define campus diversity.

Defining key diversity indicators for Concordia's community will help to officially determine diversity on campus. Some organisations exist to help measure campus diversity such as EBI MAP-Works (REF1). Their services have been used by the University of British Columbia and McGill University. Measuring campus diversity can help in part to better formulate official policies that are more representative of Concordia's community and can also help promote the university on the international level in order to attract quality students and researchers. Measuring and defining diversity at Concordia should then be an official responsibility, incorporated in the administration activities. For example, this could be spearheaded under the Office of the President and Vice-Chancellor, considering the high-level focus on diversity at Concordia.

Recommendation C3.11: Concordia should implement the aspect of diversity in its governance structure.

Similar to other universities who created senior administrative positions related to diversity (e.g.: Ryerson University), Concordia should officially implement the aspect of diversity in its governance structure for Concordia's community as a whole (staff, faculty, students). This recommendation is in line with Recommendation C3.10, where resources will be needed to efficiently measure diversity at Concordia and better formulate policies effectively representing the level of diversity at the University.

Recommendation C3.12: Concordia should improve the accessibility of buildings to people with physical disabilities.

Diversity has many facets including physical diversity. Some buildings at Concordia are difficult to access by people with physical disabilities, limiting their mobility on campus, hence potentially limiting their engagement in Concordia's community. Each building offering services to students should at least facilitate access to the first main level for people with physical disabilities.

Diversity and Affordability Best Practice – Champion: University of Virginia (USA)

The Office of the Vice President and Chief Officer for Diversity and Equity works on all aspects to improve the university community, including historically underrepresented groups. The Office for Diversity and Equity (ODE) embraces diversity and equity as pillars for the university performance. A Diversity Council is also in place to work on all diversity-related aspects of the university community.

Diversity at the University of Virginia is also represented in different department and programs. For example:

- The Center for Diversity in Engineering
- The Office for Diversity at the School of Medicine
- A Chief Diversity Office at the Darden School of Business
- The Institutes on Academic Diversity
- The Office of Graduate Student Diversity Programs

The commitment on diversity by the University of Virginia is also expressed through an online portal called “Voices of Diversity”.

Link: <http://www.virginia.edu/uvadiversity/>

Diversity and Affordability Best Practice – Comparator: Ryerson University (Canada)

The structure of Ryerson University includes the Assistant Vice-President/Vice-Provost Equity, Diversity and Inclusion, which provides leadership on the university, needs for equity, diversity, and inclusion. This includes overseeing the Discrimination and Harassment Prevention Office, the Office of Aboriginal Initiatives, and the Accessibility Office.

As part of the Ted Rogers School of Management, the Diversity Institute undertakes research about diversity in the workplace while collaborating with industry, government, not-for-profit organisations and academics.

Ryerson University now also recognizes efforts on diversity in their community with the Alan Shepard Equity, Diversity and Inclusion (EDI) Award. This follows Alan Shepard’s championing of diversity and social justice when he was Provost and Vice-President, Academic at Ryerson University.

Link: <http://www.ryerson.ca>

REFERENCES:

REF1: EBI MAP-Works (<http://www.webebi.com>)

CLUSTER 4 – GOVERNANCE

Policies and investments that successfully incorporate sustainability as a main strategic component of the governance framework will foster and facilitate all sustainability initiatives. Decisions taken in consideration of strategic plans will facilitate achieving sustainability, if such documents have been created based on the premise that sustainability is a fundamental component of higher education institutions rather than an operational element.

Coordination and Planning

Advisors: Chantal Forgues, Sustainability Coordinator, Environmental Health & Safety
Dominique Croteau, Sustainability Analyst, Environmental Health & Safety

Taking into consideration the concept of sustainability into Concordia's supporting governance framework will enhance, through proper coordination and planning, the effectiveness of most sustainability initiatives at the university and greatly facilitate these initiatives in a cost effective way. It is through coordination and planning that priorities, targets and resources can be set and allocated to create a culture of sustainability throughout all University activities.

Current situation:

Coordination

Most sustainability initiatives at Concordia are coordinated through the Sustainability Coordinator, a permanent full-time position reporting to the Office of Environmental Health & Safety (EHS). Created in 2004 in response to recommendations of the 2003 CCSA Report, the Sustainability Coordinator acts as a facilitator within Concordia's community to move towards sustainability.

The Environmental Coordinator, a permanent full-time position also reporting to EHS, facilitates and implements R4-related initiatives (Rethink, Reduce, Reuse, Recycle) and other environmental priorities as identified by Concordia and the Environmental Advisory Committee (EAC).

Planning

Concordia Campus Sustainability Assessment (CCSA)

Every three years since 2003, Sustainable Concordia has produced the Concordia Campus Sustainability Assessment (CCSA) report. The fourth CCSA report is the first report to be officially conducted by the administration of the University. The main goals of the CCSA report are to summarize the different sustainability practices and activities at Concordia and to generate recommendations that will allow the University to further enhance sustainability. The CCSA report is based on:

- Results of the Sustainability Tracking, Assessment & Rating System (STARS) program of the Association for the Advancement of Sustainability in Higher Education (AASHE)
- Expert public participation from Concordia's community
- Current governmental goals and legislations (both provincial and municipal levels)

Environmental Advisory Committee (EAC)

As defined by Concordia's Environmental Policy (VPS-5), the EAC evaluates, endorses and recommends plans and initiatives related specifically to that policy, including: monitoring and evaluating the implementation of an environmental management system, as well as receiving and reviewing communication from external environmental and auditing bodies. In practice, however, due to the non-committal language of the Environmental Policy, the EAC has not efficiently endorsed this role, leading to infrequent environmental recommendations from the committee.

AASHE STARS 2012 Results: 10/18 (56%)

Main gains occurred in the following credits:

- Physical campus plan includes sustainability;
- Sustainability Coordinator position;
- Sustainability plan (CCSA report);

Main losses occurred in the following credits:

- Officially adopted strategic plan should include sustainability at a high level
- Creating a formal climate action plan to mitigate greenhouse gas emissions (including measurable goals and timeline)

Recommendations:

Recommendation C4.1: An official Sustainability Policy should be created to ensure the seamless integration of the different aspects of sustainable development at all levels of coordination and planning within Concordia's community.

Such a policy will help to integrate all environmental, social, and economic aspects of sustainability under a common umbrella policy. A sustainability policy at Concordia will act as a catalyst and steer all sustainability initiatives in the same direction. This policy will enable the University to compare current actions with the sustainability goals of the policy to determine if appropriate resources and processes are in place to lead to the successful accomplishment of the goals.

In order to be effective, a sustainability policy should be clear and precise while explicitly including the environmental, social, and economic aspects in its primary intent. It also needs to incite action and create accountability within certain key positions throughout the University. Since such a policy would include the environmental aspects of sustainability, it would supersede the current environmental policy (VPS-5).

As of October 2014, 25 Canadian universities have a sustainability policy in place (see table next page).

Province	University
British Columbia	Capilano University
	Simon Fraser University
	University of British Columbia
	University of Victoria
	Vancouver Island University
Alberta	MacEwan University
	University of Calgary
Manitoba	University of Manitoba
	University of Winnipeg
Ontario	McMaster University
	University of Ontario – Institute of Technology
	University of Western Ontario
	Wilfred Laurier University
	York University
	Brock University
Quebec	École Polytechnique de Montréal
	École de Technologie Supérieure
	HEC Montréal
	McGill University
	Université Laval
	Université de Montréal
	Université du Québec à Trois-Rivières
	Université de Sherbrooke
Nova Scotia	Dalhousie University
Prince Edward Island	University of Prince Edward Island

Recommendation C4.2: A Climate Action Plan should be created in order to support energy efficiency initiatives and help reduce GHG emissions especially in prevision of future expansion, an increasing student population, and stricter governmental legislations.

A climate action plan should include strategies to reduce emissions, especially in the areas of building operations, energy consumption, vehicle usage, purchasing/procurement, and food. It should also include economic strategies and opportunities related to carbon offsets and carbon credits, especially considering the Government of Quebec's cap-and-trade carbon market, which started in January 2013 as part of the government's 2013-2020 Climate Change Action Plan (REF1). The University's climate action plan should also include Concordia's vision towards the need to plan for climate change mitigation and adaptation, including pro-active management towards governmental legislations. Directly linked with the goals of a sustainability policy, a climate action plan will help in defining appropriate actions to pursue towards sustainability.

Recommendation C4.3: Sustainability-related positions should be included in Concordia's governance structure in order to develop strategic plans and action plans toward sustainability, to give priorities and influence decision-making related to sustainability.

Creating positions such as a Sustainability Officer or a Director of Sustainability could facilitate and adapt decision-making processes necessary for sustainability initiatives to flourish. Incorporating sustainability in Concordia's governance structure would also ensure that resources are dedicated to sustainability planning and coordination.

Coordination and Planning Best Practice – Champion: University of British Columbia (Canada)

In 1997, the University of British Columbia (UBC) became the first Canadian university to implement an official sustainable development policy. All Vice-Presidents are accountable for that policy, which latest revision was made in 2005. The Campus Sustainability Office acts as a central hub to coordinate UBC's efforts in operational sustainability and campus community engagement. The Office is led by a Director of Operational Sustainability, which reports to the Associate VP, Campus and Community Planning.

UBC included sustainability as one of the nine commitments of its Strategic Plan, as well as a strategy and a policy in its Campus Plan. UBC implemented a Sustainability Strategy for 2006-2010, a Climate Action Plan for 2010-2015, and a Sustainability Academic Strategy in 2009. Other sustainability-related plans currently in development include a waste action plan, a water action plan, a community energy and emissions plan and an integrated stormwater management plan. Every year, UBC is reporting its sustainability efforts through the Annual Operational Sustainability Report, the annual Climate Action Plan reports and the annual Carbon Neutral Action Report.

Link: http://www.planning.ubc.ca/vancouver_home/plans_and_policies/planning_context_and_policies.php

Coordination and Planning Best Practice – Comparator: University of Winnipeg (Canada)

In 2006, the University of Winnipeg (UWinnipeg) used the ISO 14001-2004 standard as template to create their Sustainability Management System (SMS). The first stage of this SMS was the adoption in October 2006 of a Sustainability Policy. In December 2006, a Vice-President Human Resources, Audit and Sustainability (VP-HR, A&S) was appointed to oversee sustainability but the management of day-to-day initiatives was kept under the Director of the Campus Sustainability Office (who reports to both the VP-HR, A&S and to the President). Still in December 2006, the Campus Sustainability Council was created based on the resources of the Campus Sustainability Task Force.

Since 2006, UWinnipeg publishes an annual Campus Sustainability Performance Report that includes the governance, operations and academic aspects of sustainability at the university. In January 2012, UWinnipeg published its Sustainability Strategy for 2012-2016 and in November 2012, published its Climate Action Plan 2012-2016. Official UWinnipeg policies related to sustainability includes, among others: Sustainability Policy, Energy Policy, Green Procurement Policy, and Sustainable Transportation Policy.

In line with UWinnipeg's commitment to include sustainability at high levels of governance, in November 2012, the Campus Sustainability Office organized a free public lecture by Leith Sharp, the founding director of Harvard's Office for Sustainability.

Link: <http://www.uwinnipeg.ca/index/sustainability-reports>

REFERENCES

REF1: Government of Quebec (2012) – 2013-2020 Climate Change Action Plan
(www.mddefp.gouv.qc.ca/changements/plan_action/pacc2020-en.pdf)

Investment

Advisors: Jeffrey Riley, Sustainability Action Fund CEO, Sustainability Action Fund (SAF)

Investment decisions are usually made to generate income but can also be made to promote sustainability which in turn can reduce cost. It is now accepted that financial gains are not diametrically opposed to environmental protection and sustainable development as shown by the Green Growth strategy of the OECD (REF1) and work from the World Economic Forum (REF2). Furthermore, the sustainability aspects of accountability and community engagement can be promoted through a transparent and democratic investment process.

Current situation:

Concordia University

Concordia University Foundation

The Concordia University Foundation is managed with a forward thinking mentality and is presenting clear and straightforward reports. In 2010, the Group Insurance Fund was created in order to hedge the risk of any payments necessary for unfunded future employee group insurance obligations and pension liabilities. The Foundation does not invest in financial derivatives due to the speculative nature of these investments. The annual reports for the Foundation contain the financial information for the fund and the accounting processes used, and detail the various investment methods and strategies used to reduce the financial risk of the University.

Pension Plan

Decision making for the Concordia University Pension Plan is conducted through a multi-stakeholder group that is composed of representation from the academic staff, administrative and support staff, and non-active members.

Kenneth Woods Portfolio Management Program

The Kenneth Woods Portfolio Management Program (KWMPMP) is a program that allows undergraduate Finance students an opportunity to invest funds with an actual portfolio. The program was started in 2000 and the portfolio is valued at over \$1 million. For a few years some of the team members were responsible for researching social responsible investments but this mandate has been dropped in recent years.

Students' Initiative

The Sustainability Action Fund (SAF) is a student-run not-for-profit organisation that offers Socially Responsible Investment (SRI) funding for sustainability projects and sustainable developments. SAF is financed through a fee-levy at both the undergraduate and the graduate levels. It was created in 2007 during the 1% Campaign of the Less Talk, More Action Youth Summit. Approximately 200,000 \$ CAD is available each year to fund sustainability-related initiatives on campus.

AASHE STARS 2012 Results: 0.5/16.75 (3%)

Main gains occurred in the following credits:

- Student-managed socially responsible investment fund;

Main losses occurred in the following credits:

- Positive sustainability investments
- Shareholder advocacy
- Committee on socially responsible investment

Recommendations:

Recommendation C4.4: Concordia University Foundation, Pension Plan and KWPMP should evaluate the current situation in terms of sustainability-related investing decisions and create an action plan, including goals, targets, and timeline towards more sustainability-related investments or funds.

Investing in a sustainability-related fund should be seen as a learning experience to build long-term financial resiliency towards a changing environment. In their report titled “Expect the Unexpected: Building business value in a changing world” (REF3), KPMG states that successful businesses will be those that can adapt to “sustainability megaforges” such as climate change, hence increasing the resiliency of their organization. A successful investment strategy should then incorporate funds that are also showing adaptation to these megaforges such as the AGF Clean Environment Equity Fund (REF4).

Recommendation C4.5: Concordia University Foundation, Pension Plan and KWPMP should report on the potential impacts of its investment decisions on the environment and on society.

Some investments, especially those related to natural resources, can indirectly impact the environment and society through the actions of corporations financed by these investments. For Concordia to be a leader in sustainability, it needs to ensure that its financial transactions, much like its operations, have minimal impacts on the environment and on society. This could include a possible divestment in funds or corporations with environmental and social impacts that are incompatible with the community-focused vision of Concordia University. A sustainable investment section in the annual report of each fund would be useful to highlight the sustainable investing efforts taken by the University.

Recommendation C4.6: A multi-stakeholders committee on socially responsible investment (SRI) should be put in place to advise and recommend on socially and environmentally responsible investments opportunities for the investments portfolio of Concordia.

An independent advisory committee on socially responsible investment could provide information on environmental, social and corporate governance (ESG) factors that can potentially influence Concordia’s investment strategies. Through a multi-stakeholder approach, the committee would be able to analyze investments from different point of views and submit investing recommendations that are well balanced and sustainable. An example of such a committee is the Responsible Investing Committee of the University of Toronto (REF5).

A potential resource and collaborator for this recommendation is the David O’Brien Centre for Sustainable Enterprise, a research centre in the John Molson School of Business that developed the Sustainable Investment Professional Certification Program (SIPC). The SIPC was created in 2011 and is offered to financial professionals around the world interested in learning more about managing investments that generate positive financial returns while creating positive environmental and social impacts.

Recommendation C4.7: Concordia should support the creation of a Green Revolving Fund for investments in sustainability projects.

A Green Revolving Fund (GRF) would facilitate financing of energy efficiency, renewable energy, and sustainability projects that generate cost savings. These savings are then reinvested in the fund in order to sustain it. A GRF can reduce operating costs and environmental impact while promoting education and engaging stakeholders. Compared to traditional non-revolving expenditures, a GRF has key advantages such as (REF6):

- Demonstrate the business case for sustainability
- Engage and educate the campus community
- Convey reputational benefits
- Create a formal framework for capital investments for sustainability related projects
- Create a streamlined process to track financial performance of projects

As an example, these Canadian universities have a green revolving fund in place:

- University of Victoria (<http://www.uvic.ca/sustainability/involved/revolving/index.php>)
- Carleton University (<http://www1.carleton.ca/fmp/energy-and-sustainability/green-revolving-fund>)
- Thompson Rivers University (http://www.tru.ca/sustain/initiatives/TRU_Revolving_Fund.html)

Investment Best Practice – Comparator: Carleton University (Canada)

Under the Carleton University Retirement Plan, the Statement of Investment Procedures for the Trust was amended in 2010 to include a Responsible Investing clause (REF7). This clause indicates that responsible corporate behaviour with respect to environmental, social and governance (ESG) factors can actually have a positive effect on long-term financial performance.

As part of the Carleton Centre for Community Innovation, a Research Investing Initiative (RII) was created analyzing the role of responsible investing for institutional investors. Partnering with the RII are 33 national and international organizations, networks of practitioners, academics and stakeholders on responsible investing. The RII initiative is funded by both Canada's Social Science and Humanities Research Council and by Carleton University itself.

In 2013, Carleton University established a \$1-million Green Revolving Fund (GRF) to allow for investment in sustainability-related projects on the campus (REF8). This GRF follows on from recommendations in Carleton University's latest Sustainability Strategic Plan.

Link: <http://www6.carleton.ca/3ci/projects-and-initiatives/responsible-investing-initiative>

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REF1: Organisation for Economic Co-operation and Development (OECD) – Green growth and sustainable development (<http://www.oecd.org/greengrowth>)

REF2: World Economic Forum – Climate Change and Green Growth (<http://www.weforum.org/issues/climate-change-and-green-growth>)

REF3: KPMG International – Expect the Unexpected: Building business value in a changing world (<http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/Pages/building-business-value.aspx>)

REF4: AGF Clean Environment Equity Fund

(<http://www.agf.com/t2scr/static/app/fundview/public/en/fund9623.jsp>)

REF5: Responsible Investing Committee – Annual Report 2011-2012

(<http://www.governingcouncil.utoronto.ca/AssetFactory.aspx?did=9210>)

REF6: Sustainable Endowments Institute & AASHE (2013) – Green Revolving Funds: An Introductory Guide to Implementation & Management (http://greenbillion.org/wp-content/uploads/2013/01/GRF_Implementation_Guide.pdf)

REF7: Carleton University – Amendment to the Appendix to the Statement of Investment Procedures for the Trust Fund Created under the Carleton University Retirement Plan (http://www5.carleton.ca/finance-admin/ccms/wp-content/ccms-files/SIPPP_RI_Policy_Nov2010.pdf)

REF8: Carleton University - Facilities Management and Planning: Green Revolving Fund

(<http://www1.carleton.ca/fmp/energy-and-sustainability/green-revolving-fund>)

CONCLUSION

The list of topics enumerated in this report correlates with AASHE STARS rating system but is by no means exhaustive. Actions leading to enhanced sustainability can actually be found in every aspect of life at Concordia University. Some of these actions might be difficult to quantify in a rating system but can nevertheless help to increase sustainability especially if they can serve as catalysts for other more explicit initiatives. Rating systems are devised to create a baseline for comparative purposes but efforts to achieve sustainability should not be restricted only to a predefined system but instead strive to pursue the development of an ecologically aware, socially just and economically responsible society.

Through dedication, Concordia University has implemented over the years many sustainability-related initiatives that increased the well-being and sustainability of its community. However, many initiatives have been evolving in a piecemeal approach for multiple reasons but especially due to a lack of integration of the concept of sustainability at the administrative level. To ensure their long-term success as well as to maintain sufficient institutional memory, it is critical for these initiatives to be supported by both Concordia's administration and its community in general through adequate sustainable mindset and actions. A high level of sustainability will only be reached when every aspects of Concordia University will be connected together as to form a giant puzzle where everyone participates in creating the overall picture.

This report has outlined recommendations for further enhancing sustainability at Concordia. These recommendations should be seen as opportunities for Concordia University to put into action the fact that universities are living laboratories where society's best practices are developed through a continuous improvement process.

Through continuous actions, Concordia University can become a sustainability benchmark for our society and a prime higher education institution for the future leaders of this world.

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- Concordia University Strategic Directions (<http://www.concordia.ca/strategicplanning/supportingdocuments/strategicdirections>)
- EBI MAP-Works (<http://webebi.com>)
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GHGProtocol.org – What is the difference between direct and direct emissions? (<http://www.ghgprotocol.org/calculation-tools/faq>)

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Hydro Québec – Energy Efficiency Programs, Buildings Program (<http://www.hydroquebec.com/business/energy-efficiency/programs/>)

Intergovernmental Platform on Biodiversity & Ecosystem Services (<http://www.ipbes.net>)

International Initiative for a Sustainable Built Environment (<http://www.iisbe.org>)

KPMG International – Expect the Unexpected: Building business value in a changing world (<http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/Pages/building-business-value.aspx>)

LBHA Ingénieurs – Campus Loyola – Unification Entrées Électrique (February 14th, 2008)

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