

Sustainability Project Fund Application Form

Project Title: MFDS GHG audit

Budget Requested: \$17,000

Applicant/Project Leader: Mathieu Laperle
Faculty/Department: Food and Hospitality Services
Email: mathieu.laperle@mcgill.ca
Daytime Phone: 514.398.2641

Project Team:
Mathieu Laperle
Director, Food and Dining Services

Jerome Conraud
Energy Manager, Utilities and Energy Management

Project Overview

McGill Food and Dining Services (MFDS) plans to enlist the support of seven (7) students to assess MFDS' carbon footprint and develop strategies to reduce it. Utilities and Energy Management office will support the project with the greenhouse gas calculating software, Carbon Solve and the expertise of their Energy Manager. Building Services will support the project through expertise of their staff and by sharing the data that results from SPF project #77 "Waste to Resource assessment", conducting a waste of audit of select MFDS locations from February to April 2013. Three detailed inventories of Greenhouse Gas (GHG) emission from energy use, water use, and solid waste will be conducted in Winter 2013 (ideally for credit, alternatively for wage). They will be done by students and supervised by staff and hopefully, also professors. The McGill Energy Project (SPF supported) will help to identify keen students and professors for this project. A coordinator will be hired to oversee the three student projects during the winter. Over the summer and fall the coordinator will compile the data, fill any holes, and develop recommendations and a plan to institutionalize a cyclic assessment.

The objectives of this project are:

- Benchmark MFDS' current GHG emissions (from 1. energy, 2. water, and 3. solid waste)
- Develop recommendations and action plan to reduce MFDS' GHG emissions
- Develop a plan for continuity and cyclic assessment

Project Details

The following categories must be taken into account to assess the environmental impact of McGill Food and Dining Services (MFDS) operations on campus: energy, waste, and water. Note: where food comes from and how it is grown/produced and transported to McGill will be left out of the scope of this project as the carbon footprint of food is not well documented yet. Besides, MFDS is also spearheading several initiatives to procure more locally, buy more organic food, buy MSC certified fish (with SPF support), etc.

The boundaries of the system are the MFDS food locations facilities *largo sensu*, comprised the self-operated locations, food facilities managed by food services providers and tenants under the umbrella of MFDS (including the five Dining Halls as well as the retail locations on both campuses). This means that the audit will not only look at the energy and water required to prepare meals but also at the energy to light and heat the premises, or the water required to clean up the floors.

The project team has identified three main components:

- Energy audit (winter '13)
- Water audit (winter '13)
- Waste audit (winter '13)
- GHG report, coordination and continuity (winter '13 through fall '13)

1. Energy

The energy audit will include on-site data collection as well as calculations to estimate energy consumption based on said collected data.

Data collection will include walkthroughs of the facilities to identify the technical characteristics of all equipment that runs on electricity, steam, or natural gas whether it is used for food processing or not. Interviews with MFDS staff and Building Operations / Residences will help determine the frequency and time of use of the equipment. MFDS is working on an exhaustive list of equipment that can be used for the project and that could also be complemented with the data gathered during the energy audit. A group of students already did a survey of energy consuming equipment in the RVC and BMH cafeterias for their ENVR 401 project supervised by Prof. George McCourt in fall 2012. Data will then be used to estimate each facility's energy consumption. Energy conservation measures as well as their potential will be identified.

The project team has identified the McGill Energy Project as a partner. The MEP showed interest in the project. Through their growing network, they can help recruit the ideal candidates for the energy audit. The MEP can also contribute with the network of technical resources it is assembling and which constitutes a vast pool of knowledge. Jerome Conraud, Energy Manager will also accompany the students in this exercise.

2. Water

The water audit will be organized much to the fashion of the energy audit and will include data collection as well as calculations to estimate water consumption.

Walkthroughs and interviews will be necessary to draw the list of water consuming equipment and activities, and to estimate the frequency and time of use of this equipment. Two precedents will help the students develop methods to estimate water consumption in the dining halls. A water audit of the Downtown Campus funded by the SPF was performed in summer 2012. As well, a group of students focused on water consumption in the Otto Maass and Pulp and Paper buildings for their ENVR 401 project supervised by Prof. George McCourt in fall 2012.

The project team hopes to recruit students who would want to take on this audit for credits. McGill Utilities and Energy Management will accompany the students in this exercise.

3. Waste

A waste audit funded by the SPF scheduled to start in winter semester 2013 (February – TBC) will cover some of the MFDS locations on campus. The intent is to have students (coordinator) follow the consultants and learn from them as they audit a typical MFDS facility. Providing the consulting firm is willing to cooperate and share its methods and framework, the students could then apply it to the other MFDS locations not covered in the waste audit already funded by the SPF. Note that in its service offer to McGill, the consulting firm agreed to work with McGill students in an educational purpose.

The project team hopes to recruit students who would want to take on this audit for credits. For the waste audit, the student (coordinator) will be coached by the consulting firm and if needed, by Building Services.

4. GHG Report, Coordination and Continuity

The results of the three audits will be translated into equivalent greenhouse gas emissions using Carbon Solve, the solution used by Utilities and Energy Management for greenhouse gas reporting. Carbon Solve already has information on emission factors to translate all these categories into greenhouse gas emissions.

A report will be written to synthesize the outcomes of each audit and of the greenhouse gas report.

All along the process, coordination will be necessary to ensure that the three student groups are moving apace and in the same direction. As well, meetings and interviews will be optimized to avoid draining any of the staff during the data collection and calculation steps of the audits. For example, staff interviews will include the energy and water teams in order to make the best of the time of the MFDS staff. One term will not be enough for each of the three teams to collect and compile data as well as write a report. As such, the winter term will be allocated to data collection and calculations while the summer term will be devoted to the GHG report and the global report of the project. The project coordinator will ensure that there is consistency in the methods used by all three groups and that all the assumptions made by the groups and the barriers they encountered are all well documented in the final report.

Bearing in mind that a report alone is not enough to change things, the project team proposes that the final role of the coordinator be to disseminate the report; facilitate discussions using venues such as Vision 2020; work on environmental performance indicators to be used by MFDS to monitor its environmental performance and that of the other food retails on campus; and work with MFDS on an action plan to enact some of the recommendations from the report.

The project team proposes that this position span from January 2013 until December 2013 to ensure continuity in the process. A student will work part time during the winter and fall terms and full time in the summer term. The student will be supervised by MFDS throughout the project. Jerome Conraud,

energy manager will help the student with the greenhouse gas report. All members of the project team (MFDS, Utilities, and Building Services) will participate and support the coordinator with the plan.

Budget:

Energy audit: 2 students, part time, winter '13, preferably for credits (if not, count $\$1,500 \times 2 = \$3,000$)

Water audit: 2 students, part time, winter '13, preferably for credits (if not, count $\$1,500 \times 2 = \$3,000$)

Waste audit: 2 students, part time, winter '13, preferably for credits (if not, count $\$1,500 \times 2 = \$3,000$)

Coordinator: 1 student, part time winter/fall '13, full time summer '13 ($\$1,500 + \$5,000 + \$1,500 = \$8,000$)

Total amount requested: \$17,000