

Educating for Sustainability

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How are we preparing people to grapple with environmental sustainability issues at work and is there a demand for this in the local job market? With this question in mind, I set out to discover what the three post-secondary institutional members of the Ottawa Chamber of Commerce are doing to educate their students in matters of environmental sustainability.

Carleton University offers graduate and undergraduate interdisciplinary programs aimed at developing green engineers, green architects and green public servants. On offer is a Bachelor of Engineering in Sustainable and Renewable Energy, a Masters Degree in Sustainable Energy, a Bachelor of Architectural Studies with a Major in Conservation and Sustainability and a Graduate Diploma in Sustainable Development offered by the School of Public Policy and Administration.

The latest addition to this impressive list of programs is a Bachelor of Engineering in Architectural Conservation. According to Paul Van Geel, Chair of the Department of Civil and Environmental Engineering, requests from representatives in the industry defined the need and provided the impetus to develop the program. What's needed are engineers with skills in restoring heritage buildings and the ability to design buildings to environmentally sustainable standards. Graduates from this program will fill a gap that is one of the inhibitors in the green building industry. Van Geel says:

“There are issues related to green building design and why people aren't moving to more energy-efficient buildings. Some of those relate to the idea that ...the designer designs the building and builds the building but the owner does the maintenance. To design a building from a lifecycle assessment perspective or from a total life perspective it is important to understand the impact of “green” investments and that they reduce operating and maintenance costs for the owner.”

Engineers graduating from this program (and architects attending the complimentary architectural program) will be able to design buildings that incorporate environmental considerations. For example, they will be equipped to evaluate green materials and integrate these into buildings, orient a building on a lot to take advantage of natural sunlight and evaluate other issues related to energy-efficient building design. Graduates will find jobs with building consulting firms to keep pace with increasing demand for energy efficient green buildings and governmental departments, in the case of the heritage building conservation stream.

University of Ottawa has outlined three-fold mission with regard to sustainability in its Roundtable on Vision 2020. This is to reduce environmental footprint, to integrate environmental sustainability into research and education and to contribute to a sustainable society through community initiatives and policy engagement.

Courses with a sustainability theme are on offer across most graduate and undergraduate curricula. “It needs to be a basic concept, just like reading, writing and arithmetic and integrated everywhere”, says Pierre de Gagné, Director, Engineering and Campus Sustainability. “It is a basic literacy requirement everyone needs to know about.” Gagné offers experiential workshops in what he calls the “living laboratory” of University of Ottawa’s technologically advanced central heating plant. According to Gagné this is one example of many such initiatives offered by University of Ottawa staff.

On the policy engagement front, University of Ottawa sponsors the Sustainable Prosperity Institute, devoted to helping shift Canada to a greener economy. “The market is broken when it comes to the environment,” says Stewart Elgie, Chair of the institute. “The real cost of environmental use is not translated into market pricing.” Linking academic knowledge with real world application, the institute provides expertise to help governments develop policies that factor in environmental use while driving innovation and competitiveness. An example is the clean energy incentives established in Ontario. Explains Elgie, “the key is to not make it a tax grab, to plough revenues into income tax cuts and incentives. We have to get past the idea that what is good for the environment is bad for the economy.”

The university also supports initiatives spearheaded by motivated professors. André Potworowski, professor at University of Ottawa’s Teffler School of Business, is launching a sustainability cluster, called the Eastern Ontario Sustainability Strategy (EOSS), a collaboration between Teffler and the Institute of Energy and Environmental Policy at Queen’s University. The intent of EOSS is to bring together businesses, community groups, regional governments, universities and colleges to provide incentives for a local sustainable economy. The idea of a cluster, says Potworowski, “is essentially a way of getting a number of stakeholders talking together, generating ideas and becoming an incubator of innovation.” Businesses involved in construction, clean-tech, recycling, energy reduction and utilities would particularly benefit from EOSS. Encouraged by the positive results of a feasibility analysis, a social media platform is now being set up to stimulate interaction.

Algonquin College has embraced sustainability as a business imperative. Two programs, one launched and the other in development, are focused on educating students to help existing businesses become environmentally sustainable or to start their own green businesses.

In 2008 the college launched the Green Business Management Program, a one year diploma for university or college graduates to develop sustainability expertise. This program trains graduates to assess business sustainability performance, green the supply chain and develop a green business plan. Students have an opportunity to work with existing businesses in a field placement and to benefit these businesses with eco audits or green business plans. Graduates have applied their skills and knowledge to a range of jobs and initiatives, from sustainability advisor for Business Development Canada, to joining an environmentally focused NGO, to launching an energy auditing firm.

Algonquin is now in the process of developing a four-year Bachelor of Business program with a focus on sustainability. This program was conceived in response to an increasing need for business professionals able to apply sustainability principles to the business world. Graduates of this program will be able to find opportunities as sustainability coordinators, project managers and advisors.

Says Claude Lloyd, Program Developer, "Sustainability-focused business degrees exist in the States and internationally but Canada is behind. This program should change the playing field. Rather than a business degree with sustainability bolted on, this degree will have sustainability woven throughout."

So what does this say about the picture for sustainability related jobs, industries and initiatives in the Ottawa area? My guess is that as more graduates with sustainability literacy or a sustainability-related area of expertise enter the job market, employers will acquire the capability to be able to respond to the sustainability challenge by providing green products and services or through greening from within. Post secondary institutions also provide valuable expertise and support important initiatives of value to the economy and to local businesses.