



Organic Waste Utilization in the Institutional Sector

At a young age we were taught to work well and play nice together. The University of Alberta (UA) has taken this concept to new heights in collaborating with the Edmonton Waste Management Centre of Excellence (EWMCE) to combine a campus wide waste audit with students' academic course work and "hands-on" research. At the centre of this work-play duo is solid waste (commonly known as 'garbage').

Over the past few years, annual UA solid waste audits were conducted by the UA and EWMCE. A waste audit is a study that characterizes the amount and type of waste materials that is being recycled and/or landfilled. A direct-waste analysis is commonly used in waste audits, where materials are collected, manually sorted, then weighed and recorded. The data collected assists in developing future waste diversion and waste reduction plans leading to more sustainable actions at the UA.



During these UA solid waste audits, the UA and the EWMCE took an integrative collaborative approach involving three main areas: 1) operations, 2) research, and 3) learning. The *Energy Management and Sustainable Operations* as well as the *Buildings and Grounds Services* from the UA

Integrative Collaboration



represented the operations area, where the two entities were involved in guiding the audits. The EWMCE represented the research, where the EWMCE assisted in developing and conducting the audit. Lastly, students from the Department of Civil and Environmental Engineering from the UA represented the learning area, where students (both undergraduate and graduate) assisted in the sorting during the audits and in using the experience in preparation for coursework material and presentations.

Two campus-wide audits were conducted, one in 2005 and another in 2011. Despite the 9% growth in population at the U of A, there was an overall reduction of waste collected by 9% and an increase of materials being recycled and composted by 10%. This resulted in an overall decrease of waste materials to landfill per capita by 28%.

This innovative integrative approach resulted in a technical seminar on Organic Waste Treatment Technology for the ICI Sector; academic research work in the area of *biowaste utilization*, *waste audit methodology*, and *drivers to waste diversion*; involvement of both UA staff and students and EWMCE staff in the actual sorting of waste for the audit; and 8 term projects that focused on waste characterization, composting, anaerobic digestion and landfills.



Dr. McCartney presents the winning Env432/CivE628 team who impressed the judges with their term project .

It would seem that working and playing together brings about excellent results. The UA moves closer to its waste diversion targets, models sustainability, and provides real world challenges for students to grapple with. The Centre of Excellence has an opportunity to showcase their ICI Waste Audit model and continues to provide sound advice and practice solutions in a collaborative endeavor.

Integration! Collaboration! Innovation!

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