School of Sustainability
Arizona State University

In Partial Fulfillment of the Requirements for the Degree of

Master of Sustainability Solutions (MSUS)

Kai Wang

Will present his Master's Culminating Experience Project

SRP Waste Management Project

Abstract

SRP is looking for an alternative to landfilling their cable jacket waste, mainly crosslinked polyethylene (XLPE) to reduce the environmental impact. Two options, combustion as alternative fuel in cement production and de-crosslinking the material to displace virgin polyethylene (PE), were proposed whose environmental impacts, along with that of landfilling, are studied and compared through adopting Life Cycle Assessment. The results indicate, in terms of Global Warming Potential(GWP) and health impact, landfilling should be replaced by combustion as alternative fuel for its low impact on human health, relatively low GWP, and compatibility with the client's current equipment.

To further explore the potential opportunities in waste management in SRP, an assessment targeting SRP's sustainability program was conducted. Interviewing SRP's relevant staff provided more understandings about SRP's waste management process, the connection between waste management and other sustainability elements, the challenges in sustainability programs, and the company culture. Based on this information, SRP's sustainability program is assessed from four different angles: pollution prevention, clean technology, product stewardship, and growth path crystallization. The results indicate, while the process in SRP of integrating sustainability principles into daily operation is undergoing, the integration will accelerate if visioning, the mitigation of departmental compartment, and internal mobilization can be done.

Friday, April 28, 2017
10:30 a.m.
Wrigley Hall, 481
Faculty, students, and the public are invited.

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Soumya Parthasarathy

Will present her Master's Culminating Experience Project

Construction and Demolition Waste and Impact

Abstract

Humans, just like a few other animals, build houses to live in and grow their families. While animal's houses do not produce a lot of waste during construction, both construction and demolition of human housing results in a significant amount of waste. This waste is not typically bio-degradable or produced from environmentally friendly materials. They are often damaging to the environment, causing pollution and contributing to greenhouse gas emissions. This type of waste is categorized as Construction and Demolition(C&D) waste, and is the focus of my culminating experience. I worked with a local salvage company, Stardust Building Supplies, to understand their business operations and C&D waste impact. I delve into the policies surrounding C&D waste in Arizona, and discuss strategies and intervention points to tackle this problem.

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Alyssa Kiefer

Will present her Master's Culminating Experience Project

Community and Composting in Victory Acres

Abstract

"Community and Composting in Victory Acres" implemented a pilot composting program for a local low-income, culturally diverse neighborhood in an effort to increase community connectedness. The goal of the project was to reconnect broken ties to the Escalante Community Center by allowing residents to directly benefit from the garden's composting capabilities while encouraging a more sustainable method for dealing with food waste. The composting pilot project in Victory Acres was used as a way to mitigate the greenhouse gases emanating from food waste as well as encourage aspects of community connectedness, sustainability, and happiness.

After completion of the project, composting in the neighborhood can continue through increased access to the Escalante Community Center and its garden. An assessment via survey responses was made on improvements in perceived community connectedness, sustainability, and happiness. The pilot was unsuccessful in gaining a large client base for composting participation, but it was successful in exploring challenges and barriers to implementation of sustainability projects in Victory Acres. Several lessons were learned from successful and unsuccessful engagement techniques, several intervention points were explored, and future opportunities arose for further research.

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Nagelle Fernandes

Will present her Master's Culminating Experience Project

Stern Produce: Sustainability Assessment and Performance Reporting

Abstract

Stern Produce has been a prominent agricultural produce distributor in Arizona since 1917, with three distribution locations in the state: Phoenix, Tucson and Flagstaff. The company is a wholesale supplier of farm produce, meat and dairy products. Stern Produce is seeking to create comprehensive sustainability metrics to develop sustainability baseline information on their operations. This project, in partnership with Stern Produce's Sustainability Coordinator, provides a final report that describes the sustainability indicators and metrics, provides recommendations for future growth, and highlights immediate areas of impact using the Hart and Milstein's Sustainable Value Framework (2003).

Under the three tenets of people, earth and business, the sustainability areas to focus on for Stern Produce are: sustainable procurement (internal and external); fleet management; organizational continuity; sustainable communities; and, sustainable building operations. By formulating sustainable focus areas, Stern Produce is acknowledging the significance of integrating environmental consciousness with economic performance and social benefits. Based on the findings, the project will assist Stern Produce in identifying intervention points and find new ways to mitigate negative operational outputs. Moreover, the project will facilitate cross-department engagement and involvement, provide data for sustainability key performance indicators, and further social commitments to operating sustainably. Measuring and reporting operations also improve transparency within the company and with external partners. Furthermore, the assessment propositions sustainability initiatives to address staff and community wellbeing concerns. Thus, the project uses a triple-bottom line approach to assess Stern Produce and translate the sustainability indicators into value for the company.

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Jeffrey Iles

Will present his Master's Culminating Experience Project

How is E-procurement Related to the Success of U.S. Cities' Sustainable Purchasing Policies?

Abstract

Sustainable purchasing policies and e-procurement are both fast becoming popular topics across city governments in the United States. As these two relatively new initiatives meet, the relationship they share has some promising implications that have gone mostly unexplored until now. To investigate this relationship further, a survey of city government procurement was conducted with a sample of 1,681 director level city employees from Finance, Public Works, and Environmental departments from 791 U.S. cities. These directors answered questions relating to their assessment of their city's implementation of sustainable purchasing policies and the extent to which their city uses an e-procurement system. A test of independence was then performed to determine the influence e-procurement has on the assessment of sustainable purchasing policies. This study found that the use of an environmentally friendly database of products and services in a city's e-procurement system positively impacts the perceptions its city managers have towards the implementation of their sustainable purchasing policy. Clearly e-procurement is a significant technological instrument that can be adapted to advance sustainability. Yet, further evaluation must be given to the decentralized way most city governments procure goods and services. By understanding these connections, cities become better equipped to determine and implement best practices for leveraging e-procurement for smarter, more sustainable purchasing.

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Brittany Nixon

Will present her Master's Culminating Experience Project

Translating Sustainable Values: An exploration in Interdisciplinary Immersive Art and Digital Media

Abstract

The composition of this project can be described as half responsive digital media composition and half social experiment. It is built for the seven screen display of the Decision Theater and utilizes a combination of open source software tools and sensor technology to create a media environment that responds to real time physical feedback from participants. The experience is split into three individual scenes or "levels" that explore Shalom Schwartz's cultural value orientation theory and connections to sustainability. It may be considered a pilot application for the use of a creative and interactive digital art platform to communicate about sustainability. Art and design are two fields that are uniquely suited for bridging the communication gap between academic knowledge and the general public. They both regularly examine, critique, create, and comment as a part of shaping culture and encourage reflexive thinking about our norms and values. This ability to reflect and consider the assumptions that may be engrained within our cultural value orientation is fundamentally important to the wider recognition of the cultural shifts that are needed to create a sustainable future.

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