

Sustainable Design: SIS-519

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Expansion of ideas for Pedagogy of the new SIS building

Of the many ideas about how the new SIS building can inform and educate its visitors, the measuring and quantifying of materials flows in the building can be both powerful informatively and feasible economically. McDonough and partners have already designed the Adam Joseph Lewis Center for Environmental Studies building at Oberlin College in Ohio. While there are several important differences in the AJLC and SIS building concepts, there are many things that we can learn from the AJLC about how to make the SIS building more informational and educational. In many ways, the groundwork on research and practice have already been completed and tested in Ohio. The ideas remain to be inserted into the SIS plans.

On the AJLC website there are several pages dedicated to the measuring and monitoring of environmental performance.¹ "The premise behind the AJLC's extensive data monitoring system is that real-time feedback on ecological performance increases awareness, connectedness, and motivation to act on the part of both building occupants and facilities managers. Our goal is therefore to make the flows of energy, cycling of matter and interactions between the built and natural environments visible and easy to interpret. This system also makes an ideal interactive learning tool for all who enter the Center...by revealing the flows of energy and cycling of materials through the AJLC building and landscape. New feedback of this type may be a necessary prerequisite for facilitating a more sustainable relationship between humans, technology, and the natural world."

The AJLC website continues to detail the system of measurement. The building has over 150 sensors, monitoring temperature, water use, and energy use. These sensors send electronic signals, first to dataloggers and then to a mainframe computer, which then interprets the data. This data is then transmitted to a website that can be easily accessed online and is updated every sixty seconds. There is also a monitor in the atrium that shows the same data for visitors.

An interesting feature of the monitoring system is that it is the result of a partnership between Oberlin and the Department of Energy's National Renewable Energy Laboratory,

as well as being partly funded by an Andrew W. Mellon Foundation grant. Although the monitoring equipment itself was purchased by Oberlin community members, there was clearly a lot of help from partners in the selection and installation of the monitoring system.

From reading the Oberlin website and some of the accompanying documents, there clearly is an established precedent in doing exactly what we will be trying to do.² The next steps in the process are retracing the steps of the Oberlin community, communicating with Professors John Petersen and David Orr, following up with the NREL, and potentially collaborating with the fundraising team to begin to articulate the language we could use for grants for this project. It is certain that we will learn a lot in following up the Oberlin procedure and hopefully we will learn where their system has not been satisfactory and will be able to create an even better system of monitoring and data analysis.

¹ http://www.oberlin.edu/ajlc/edu_3.html Accessed on February 19, 2006

² Energy Performance Evaluation of an Educational Facility: The Adam Joseph Lewis Center for Environmental Studies, Oberlin College, Oberlin, Ohio. S.D. Pless and P.A. Torcellini. National Renewable Energy Laboratory. November 2004.

TRANSIENT ANALYSIS OF VOC CONCENTRATIONS FOR ESTIMATING EMISSION RATES. Andrew Persily, Cindy H. Reed, and Steven J. Nabinger. Building and Fire Research Laboratory. National Institute of Standards and Technology. Reprinted from CD Proceedings, Indoor Air 2002, 9th International Conference on Indoor Air Quality and Climate in Monterey, California. June 30-July 5, 2002.