

SUSTAINABLE DEVELOPMENTS AT VERMONT TECHNICAL COLLEGE

- Staff article

Vermont Technical College (VTC) has two good reasons to get our attention. One is a program to reduce energy consumption that exceeded expectations. The other is an exciting student-led project to design and build sustainable housing.

In a partnership with IBM, VTC took on a yearlong program designed to reduce electric consumption by 5.5% and save more than \$30,000. What happened in fact was that electric consumption was

reduced by 6.6%, resulting in savings of over \$40,000. The program is not over, however, and the current goal is to reduce consumption by an additional 5%.

IBM contributed 900 hours of worker time and with 550 advanced power strips for the students. Expert skills contributed to sustainable practice education and training. Equipment was changed on the basis of this expertise, with resulting savings in lighting, appliances, computers, controls, and other devices.

Meantime, students set about undertaking an impressive project to design and build housing to the standards of the Solar Decathlon. The project is called the Low Impact Design/Build Initiative (LIDI), and its goal is to develop designs for energy efficient, low impact, practical housing for families in Vermont.

Students developed floor plans over the fall, as part of the project's first step. The plans were analyzed for efficiency, practicality of materials, construction benefits, cost, and other metrics. After choosing a group of designs for further study, the LIDI team was organized to do further analysis. This team was made up of students Matthew Allen, Monica Alsup, and Heather Boyd.

One of the most important considerations in the process was the selection of



The Low Impact Design/Build Initiative (LIDI) construction begins spring 2013

an appropriated site for solar gain. The sites considered were all on the school property, and a single obvious choice was finally decided upon. The design of the building itself was influenced by the choice of site, and by the consideration that later groups of students may want to reuse the same site for new projects. This meant that the building had to be designed to be deconstructed or moved

at a later date.

Construction begins in the spring of 2013, to be completed at some point in the fall. The building will be an educational center for further work, as students go to new projects of the same type.

Clearly VTC deserves our congratulations. Well done!

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UVM'S JEFFORDS HALL THE GREEN STANDARD

By Dana Rubin

It only seems fitting that an article about the James M. Jeffords Hall be written within Jeffords Hall. Here I sit, surrounded by a metropolis of green growers, edible gardens, natural perfumes and a background track of classical music. Perhaps I should write more articles here. Those such as I passing through are able to glance into the window-fronted lab rooms, where students huddle over plant specimens and discuss in round-table style. Every stone has been turned over in terms of sustainability here at Jeffords. Composting and recycling bins line the hallways; event posters on corkboard

bulletin boards highlight upcoming seminars and green workshops. Even the toilets announce their green intentions, manufactured by TOTO; they use 63% less energy than a traditional toilet.

Jeffords is a 99,000-square-foot LEED-certified building located at "the top of the hill" on the UVM campus. Since its unveiling in 2010, UVM students have flocked to its research labs and classrooms to learn about sustainable agriculture, soil microbiology, photosynthesis, food systems and invasive species ecology.

Jeffords joins five other UVM buildings on campus that have LEED Gold certification; From blueprint to the first class assignment, it took six years to complete this project, but challenged Vermont in the best ways. The support for the \$55.7 million building came from three sectors; \$10 million in state funding; \$2 million in federal grants, thanks to Senator Patrick Leahy; and \$1 million from private donations.

The laborious expedition turned into a great reward, a sustainable structure. 52.4% of the project's building materials were from local sources and Vermont subcontractors and technicians performed more than 70% of the work. The process diverted 90% of waste away from the landfills and today, the building uses 28% less energy than a conventional building and 50% less water (UVM, facilities &

design construction, 2010)

Ellenzweig Associates and Freeman French Freeman designed Jeffords. Through sustainable design principles, the team was able to decrease the structure's



non-renewable energy sources. Jeffords has eight large curtain walls, 62 lab windows and 50 larger, storefront-style windows. This design technique has allowed for an abundance of natural lighting and ventilation. That said, Professor Gary Flomenhoft, a CDAE lecturer, has argued that green design could have gone even further. "Jeffords Hall is not facing the optimal direction to use solar heating and electricity...new buildings should be state-of-the-art with respect to their heating and electricity systems."

The next time you are looking for an alternative study space, head to Jeffords and give your own review. LEED certified yes, but can we strive for even better? If nothing else, use the conference rooms to enjoy the exquisite views of our state's mountains. Now what's greener than that?

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