Knowledge 'filters' down to Montpelier class

Jeb Wallace-Brodeur/Times Argus

By Sarah Hinckley Times Argus Staff - Published: October 17, 2008

MONTPELIER – While sitting outside Montpelier High School for lunch recently, 17-year-old Thomas Gram noticed a toxic-looking, yellow foam forming on the school's newly paved parking lot.

"I knew that was going to end up in the river," he said Wednesday, explaining why he was helping construct a rain garden – or bio-retention cell — where the parking lot drains. "I've been an environmentalist pretty much my whole life."

Gram joined members of his Environmental Applications class, the Vermont Youth Conservation Corps and members of a company called Filtrexx from Vermont and New Hampshire in building the rain garden, which is designed to filter the water runoff from the new pavement.

To create the garden, large fabric tubes containing compost frame areas being filled with a mix of compost and soil for plants that will serve as a natural filtration system.

"It ties into a bigger plan at Montpelier High School to make the school itself a model for sustainability," said Tom Sabo, who teaches Environmental Applications and Biology at the high school. "What I really like about this project is the students are seeing people working in the environmental profession."

About 46 cubic yards of compost were brought in for the project and pumped through hoses to fill the tubes, which are made with geo-textile fabric. Set up around the bio-retention cell, the mesh "Filter Soxx" are a line of defense and filtration for water running off the pavement that should keep pollutants in runoff out of the waterways.

"This kind of thing is better than the usual alternative of a storm drain," said Gram. "This kind of hands-on learning is pretty important."

The acre-and-a-half parking lot was designed so that the majority of water falling on the surface will drain into the rain garden area, which is to the left of the lot as one enters. Crushed rock is the initial draining bed before the water runs into four garden sections, framed by the socks, which are laid out towards the tree line. Beyond the tree line is a drainage ditch, from which flowing water eventually empties into the

Winooski River.

"What kid gets to go into their science class – you get to learn about a rain garden – but how many get to build one?" asked Sarah Hays, who was overseeing the Vermont Youth Conservation Corps students from Mt. Mansfield Union High School helping with the project.

"This is more outdoors and based on what I wanted to do," said Britt Manning, 15, a sophomore at MMU. "I like going outside and learning."

Collin Semprebon, 17, a senior at Montpelier High School, is in Sabo's Environmental Applications class. He and classmates researched which plants would be appropriate for the bio-retention cell.

"What we wanted to have is plants that can handle a lot of water," said Semprebon, adding they also need to be able to live with salt, which will be used in the parking lot during the winter.

Those plants will be placed down the middle of the garden where more water will drain, he explained. Goldenrod and Asters are two examples of rugged plants that can sustain themselves in harsher environments. Semprebon said a lot of the plants they were looking for are commonly found on the roadsides of Vermont where salt, water and sand are part of season maintenance.

"We learn a lot of stuff about how to work with what we have around us," he said about the class in which Sabo stresses the inter-connectedness of economic, social and environmental elements. "You can't have one of them without all three of them working together."

Gram is a member of the Earth Group at the high school, of which Sabo is one of the leaders. Students in that group participate in the annual cleanup of the Winooski River and other Earth-focused activities. Composting food at the school has become a coveted activity, where the top composter of the month is widely congratulated. There is also a greenhouse in provides hands-one learning in biology — and the edible products are used in the district's schools.

"This capital high school has been kind of a leader in the state for that kind of stuff," said Gram, who is planning to study community development and sustainable design in college.

Buzz Ferver, of Worcester, works for Filtrexx and was influential in bringing the equipment needed for the project, as well as the plants. If it were not for donations, grants and volunteers, Ferver estimates installing the rain garden would cost close to $10,000.

"It looks like we're not going to be paying anything," said Sabo. "This will be gone in two years but left in its place will be the plant life and the berms."

Another common Filtrexx project for schools is building playgrounds with the compost socks.

"We can make a playground that can filter water and grow plants," said Ferver, adding that the company has a network of 140 installers internationally.

Ferver has been a compost consultant for 25 years and worked with Sabo on a number of projects.

"We're focused on increasing the sustainability of the school, at the same time decreasing the environmental impacts," said Sabo. "The timing of this was based on the (new) parking lot… If you have to do chemistry, why not do it here? This was perfect for what we were doing."