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## Organic insulation

College seniors are developing building material that's better for the planet.

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By [PlentyMag.com](#)

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On a college campus in upstate New York, seniors are growing mushrooms beneath their beds. Sure, you say. What else is new? But it's not what you think—they're experimenting with eco-friendly insulation.



Eben Bayer and Gavin McIntyre, both students at [Rensselaer Polytechnic Institute](#) in Troy, New York, have developed insulation made with organic material. It can be grown on site, requires no heat, very little [energy](#), and it blocks air flow just as well as commercial insulation does. As long as it's not exposed to light, the insulation serves as an environmentally friendly alternative to the conventional kind that is made with fiberglass and other materials produced with [fossil fuels](#).

"I just happened to notice that some of the substrate that was insulating the particles was really similar to some of the substrate used in commercial mushroom production," says Bayer. "That kind of got me thinking, 'Wouldn't it be neat to grow your own insulation?'"

Bayer, who was raised on a farm in Vermont and grew gourmet mushrooms with his father, proposed the idea in his Inventor's Studio class about two years ago while working on a sustainable housing assignment. Urged by his professor, Burt Swersey, to develop the idea further, Bayer took on a partner and got to work. The result was a product that is both cheap and environmentally friendly.

"Some people say that if you want green things you have to compromise. Nonsense!" says Swersey. "The vision of growing your own insulation has so much going for it."

According to the [Department of Energy](#), heating and cooling account for 50 to 70 percent of overall energy costs in the average American home. If a house is well insulated, it will consume less energy and costs will go down.

Most conventional insulations are made of polystyrene or polyurethane foams, which contain a certain percentage of post-consumer, [recycled products](#), says Andre Desjarais, the group leader of the Building Envelopes Program at Oak Ridge National Laboratories, part of the Department of Energy.

"The amount of energy consumption saved makes these materials very cost effective

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