

HOME & GARDEN

Benefits of greenhouse addition are many

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Recorder Columnist

Bright pumpkins were basking in the sun to cure and the walls were lined with plants, strawberry begonia, aloe, jade tree, hoya, Swedish ivy and spider plants. There was a large thriving rosemary plant in a handsome pot. I was in the Bluh's solar greenhouse, luxuriating in the sun and the 85 degree heat even though it was a breezy 60 degrees outside.

George Bluh teaches history and philosophy at Greenfield Community College, but he has been an enthusiastic gardener for years. Some of that enthusiasm has rubbed off on his oldest son, Jeffrey, a soft spoken young man who is now majoring in Plant and Soil Science at the University of Massachusetts. George and Jeffrey invited me over for a tour of their solar greenhouse, a 10x20-foot addition onto the back of their house in Conway. A solar greenhouse is designed to gather heat during the day, store it in a thermal mass and then release that heat slowly at night providing temperatures that are moderate enough to keep plants happy all year long, even through a Massachusetts winter.

Since the greenhouse does not depend on any heat source other than the sun it is a very simple structure. The sun shines through triple glazed windows on three sides and onto

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the back wall of the house which has been painted dark brown to absorb the heat and on the floor which is made of a 4½-foot deep layer of small rocks.

This deep layer of rock is the main part of the insulating and heat holding system. First the foundation of the greenhouse is insulated with 2 inches of plastic foam board and there is even a foam board "floor" laid over the dirt more than 4½ feet below ground level. Then comes the manifold system, a series of serpentine perforated plastic pipes laid on top of the styrofoam. The manifold system terminates in two pipes that come up in the corners of the greenhouse. Ultimately, one of these pipes will have a small fan installed over it to facilitate the movement of warm air through the system.

Then comes the 28 tons of rock — this 1,000 square feet of rock provides the thermal mass that is heated during the day by the sun and then gives that heat up gradually to the greenhouse during the night.

Jeffrey said that although the greenhouse worked successfully through last winter's severe weather, he is interested in experimenting with additional thermal mass. He would like

to line the back wall of the greenhouse with containers of water. These containers of water would act in the same manner as the floor to heat the greenhouse at night.

Besides the manifold system, the ventilation plan utilizes air flow through the house. On one end of the greenhouse there is a screened casement window that can be opened and at the other is a door leading to a small brick terrace outdoors. The kitchen window, the basement bulkhead and a sliding glass door from George's study all open into the greenhouse. This permits fresh air to come in from outdoors when temperatures get too high, air flow through the house provides some heat to the house, again while moderating temperature in the greenhouse during the day.

Because the basement bulkhead opens into the greenhouse, the Bluh's are provided with a practical and handy place for potting plants and storing paraphernalia without taking up valuable space inside the greenhouse itself.

This fall, as part of his program at UMass, Jeffrey is taking a course in plant propagation. Not all plants need to be started from seed and he is learning how to take leaf and stem cuttings and he is also in the process of propagating a fig, hibiscus and lime tree using the air layering technique. He is looking forward to moving these new plants into the greenhouse before Christmas.

In the early spring, George and Jeffrey will be busy start-

ing flats of tender seedlings like peppers, tomatoes and eggplant. The greenhouse provides the perfect conditions to get these seedlings off to a vigorous and healthy start. Hardier plants like lettuce and the cole family can also be started in the greenhouse, then hardened off and put out in the garden early.

A solar greenhouse can be a practical and attractive addition to any house. It certainly proves its usefulness in the spring when it is time to start seedlings indoors. And like George, I have an aunt and uncle who have found that the greenhouse they added off their living room has made a significant difference in their heating bill and it also provides a perfect home for houseplants. To me, it seems that a solar greenhouse is a way to spread the joy of gardening over more of the year and it can bring the lushness of summer to the darkness of winter.



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