

## Saving On Home Business Costs

### Owners

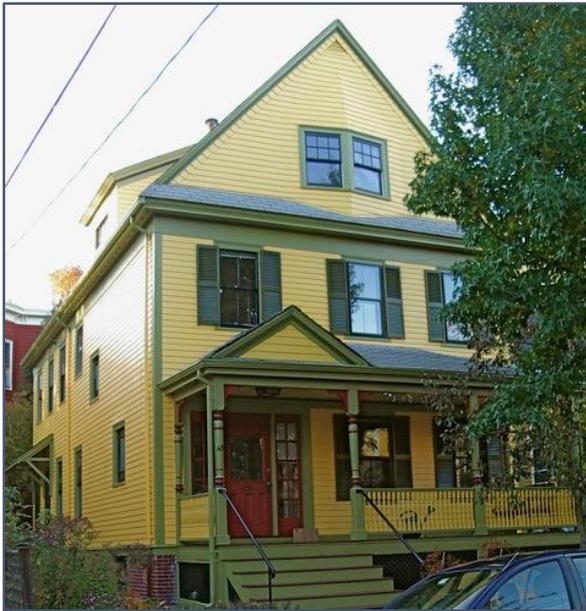
Amy & Philip

### The Building

45 Antrim Street. Single-family wood frame house, built in 1897.

### Motivation

We installed PV solar panels for generating electricity in October 2006. We were motivated to reduce our carbon footprint after seeing *An Inconvenient Truth*. The PV system has dramatically reduced the electricity we draw from the grid, and has incurred no maintenance costs or problems of any kind. We



knew we had left room on our roof for solar hot water panels. When we heard in 2011 about the grants that were available for that system, we decided it was time to add it. Although the size of our household has shrunk as our sons have grown up, our use of hot water has increased because of my business. I have a home-based business making hand dyed fabrics which requires hot water, and I wanted to reduce my use of gas for heating the water.

### The Installation Process

To find an installer, we called Paul Lyons at Zapotec Energy, our contractor for the PV system. He recommended New England Solar Hot Water. They sent a proposal and we called several references, who all gave them glowing reports. They came to the house to discuss various ways to install the panels and run the lines. We discovered we had not

left enough room in the chimney chase that we had used for the solar electrical lines, to add the pipe needed for the hot water system, so we agreed to run the pipe and sensor wire outside the house. The contractor was very helpful about showing us ways to install it and figuring out the best way to make the lines visually unobtrusive.

The system was installed quickly, and the crew who worked on it was punctual, knowledgeable, neat, efficient, and friendly. However, it took many months to get the inspection finalized. The system components came from Germany and the Cambridge inspectors were reluctant to approve them. While we, the homeowners, were not inconvenienced, the contractors were. They had to spend a lot of time communicating with the city inspectors, and

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### **Information About Our System**

New England Solar Hot Water specializes in commercial and residential solar hot water systems using the highly rated “SECUSOL” appliance, a high performance German system for single family homes for about **\$7,200 installed**. The system uses all Wagner components including 2 Wagner EURO C20 AR flat plate collectors and a 93 gallon storage unit. The collectors are the highest rated available in the US. The system components are integrated into a single “appliance” which results in a small footprint and simple design. The SECUSOL system is a ‘drain back’ system and is completely immune to overheating and freezing. In addition, there is an unmatched 11 year manufacturer’s warranty on the entire system. Solar hot water is a great investment as the system will provide approximately 75% of your domestic hot water using free solar energy.

*—from the NESHW website*

eventually they were required to replace a German made sensor wire with a cheaper and apparently lower quality wire from Home Depot that the inspectors were familiar with. We are sure our system is fine, but we felt badly about the extra labor the contractors put in. They did not charge us for that. We felt they handled everything very professionally.

### **Costs & Savings**

The initial cost of installing the system was \$7200, but there were many savings that reduced the cost to under \$1000. We received a rebate check from Massachusetts Clean Energy Center for \$1135. The grant from the City of Cambridge was \$2000. We expect to receive a 30% federal tax credit of \$2160. We will also receive a 15% tax credit from Massachusetts, for \$1080. This brings our savings to \$6375, and reduces the cost of the system to \$825.

It is not possible to measure the amount of water heated by the solar panels as compared to our gas water heater, as there is no meter to read. Comparing our gas use from this year to last, we are using less natural gas now, but there are many variables involved (weather, my studio production, the number of people living in the house) which make it difficult to measure how much the solar hot water system is reducing our use of gas. But we never run out of hot water!