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Communicator

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OPTIONAL HIP IMPROVEMENT: DUCTLESS MINI SPLIT HEAT PUMP

By Joe Wiehagan, HIP Project Manager

GHI homes were renovated in the 1980's with electric baseboard (EBB) heating. The current Homes Improvement Program (HIP) includes the replacement of the EBB in each unit, but also provides members with the option of choosing a ductless mini-split heat pump.

A ductless mini-split heat pump (DSHP) consists of one outdoor heat pump, one or multiple indoor fan coils, refrigerant and condensate piping, electrical wiring, and a thermostat. This photo shows the primary components of the mini-split with the indoor fan coil shown at the top. The indoor fan unit is connected to the outdoor unit via piping and wiring located on the exterior of the home, requiring very little interior modifications to the home. The DSHP offered in the HIP are very high efficiency systems.

Similar to EBB heaters, the DSHP with multiple indoor units can be turned off in an unused room, saving energy. Unlike EBB, there are fewer indoor air handlers meaning that some

rooms may require use of the existing EBB heaters in very cold weather. For the typical GHI home with a central stairway, one fan coil installed in the living room may provide adequate comfort to the first floor dining room and kitchen but in larger homes or units with additions, a second fan coil may be required. There are similar design concerns for the second floor; many of these can be addressed by the contractor when planning the installation of the system.

A summary of the "Pros" for the DSHP include high efficiency heating, cooling, and dehumidification, very

quiet operation, zone control in rooms with the air handler, efficient operation in changing outdoor conditions, compact and quiet outdoor unit, and less disruptive to occupants during installation compared with other heating/cooling options.



The "Cons" of the DSHP include an indoor fan coil that may be aesthetically objectionable, use of electric baseboard and ceiling heaters may still be necessary during colder weather, and the initial cost.

Many GHI members have already installed DSHP units. Paul Swanson, who lives in a masonry unit, says, "the new system is much more efficient for cooling than my old in-wall air conditioning, and also beats the baseboards for efficiency." While Swanson wishes he could have chosen a system that had humidification built-in, he says "it doesn't get nearly as dry as it does when running the baseboards."

Board member Bill Jones says the mini-split he installed in his masonry home still requires him to supplement with space heaters when the outdoor temperature is below 30 degrees. Jones notes however, "it is far more convenient than standard baseboard heaters, but the amount I save on my electric bill over the heat pump's lifetime will be less than what I paid for it upfront."

These two members decided that their comfort was worth the expense to have this HIP optional item installed in their homes.

For more information on ductless mini-split heat pumps, visit the Department of Energy website: <http://energy.gov/energysaver/ductless-mini-split-heat-pumps>.

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FIRST GHI MEMBER "GOES SOLAR"

By Steve Skolnik

On a cold, bright blue morning in January, GHI member Ed Neuschler grasped the red handle on an electrical switch on the garden side of his block home and with a flick of the wrist, Mr. Neuschler, the member at 1-B Ridge Road, became the first GHI member to install solar power at a GHI home.

The digital display on his solar inverter came to life and began delivering clean solar power to the home's power panel.

The process of installing his solar power system, from conception to completion, had taken a number of months, but was not terribly complicated. Ed had determined that the flat roof at his unit has great sun exposure, and is not shaded by nearby trees or other buildings. Then he joined a solar-power purchasing group organized by Groundswell, a consumer organization. There are a couple of financing methods for solar power systems; Ed chose to purchase his outright, in order to maximize his savings on electricity over time.

Sustainable Energy Systems (SES) of Frederick, MD designed the new system and helped obtain GHI, city and county permits. One key detail of the GHI permit is that Ed agrees to be responsible for any damage to the roof that may result from the solar array, and also he'll need to pay to have the array temporarily removed when GHI needs to replace the roof membrane on this unit.

There are 15 solar panels on his roof which connect to his existing electrical panel. The installer estimated that the system will, over the course of an 'average weather' year, generate nearly 100% of the electricity Ed uses in the home (although Ed notes that his electricity use is lower than most); they also stated that the system will pay for itself in reduced energy bills and other incentives.

The solar power system is expected to be highly reliable, with no moving parts and long warranties on the solar modules and inverter. The inverter has a wireless connection to the Internet, and Ed can log into a web site to monitor the system performance, in real time or through summary reports.

The final step was to have county inspect and PEPCO approve the system; that took some weeks and a bit of anxiety. Finally the approval letter came, and Ed knew the time had come to 'throw the switch' and transport himself, and GHI, into the world of renewable energy.



Photo credit: Steve Skolnik

WHAT'S HAPPENING

Unless otherwise noted, meetings are held at the GHI Administration Offices on Hamilton Place, and are open to all GHI members. Dates are subject to change.

April

2	11:00 am	Pre-Purchase Orientation
5	8:30 am	Yard Line Committee
5	7:00 pm	2016 HIP Cohort Help Session
7	7:30 pm	Board Meeting
8	- -	OFFICE CLOSED
12	7:30 pm	Historic Preservation Task Force
13	7:30 pm	Architectural Review Committee
14	7:00 pm	Finance Committee
18	7:00 pm	Pre-Purchase Orientation
19	7:30 pm	Companion Animal Committee
19	7:30 pm	Legislative & Gov't Affairs Committee
20	7:00 pm	Woodlands Committee
21	7:30 pm	Board Meeting
22	- -	OFFICE CLOSED
25	7:00 pm	Communications Committee
26	8:30 am	Yard Line Committee
27	7:00 pm	Buildings Committee

Call 301-474-6011 for emergency maintenance outside of normal hours or when GHI is closed.

Member Announcements

Town Hall Meeting Documents

The Board of Directors and GHI staff briefed members on a number of important items such as asbestos in crawlspaces of masonry homes, county legislation affecting cooperatives and the Homes Improvement Program. Documents related to this Town Hall meeting will be available at <http://ghi.coop/content/town-hall-meetings> or contact the GHI office.

Member Feedback Requested: Changes to Occupancy Criteria

The Board of Directors is considering revisions to "Article XVI: Occupancy Criteria" in the Member Handbook, and would like to receive feedback from members. Comments are due by April 7, 2016. Read more at bit.ly/1R8jFLB.

Spring Plant Swap

Sunday, May 15 at 2:00 pm

Set up begins at 1:30 pm; the Swap will happen at 2 pm SHARP! You snooze, you lose! The swapping goes fast, and we are done and gone by 2:30.

<http://ghi.coop/content/spring-plant-swap-0>

Member Announcements

Inserts with your Communicator newsletter:

- Recent Board Actions and Committee Activity Information
- Lender Information for HIP Optional Improvements