Net-zero house opens at Clover Park Technical College

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This past May marked a very significant event for the students and staff at Clover Park Technical College (CPTC) in Lakewood, WA. The college's Zero Energy House opened, and was visited by a special guest, Governor Jay Inslee, who remarked, “for every one of these houses, there will be ten more built in the market.”

This is an exciting project because it not only produces more energy than it uses, but it also serves as a classroom for the students of the Sustainable Building Science Program at CPTC. As a building science instructor at CPTC, I conceived and directed the construction of the 960 square foot structure to teach students about the importance of green building and energy efficient practices. The building is the result of an integrated effort by the college administration, staff, faculty, students and community. Amenities of the house include:

- Full visibility of all systems of the house for educational purposes
- Enclosed and conditioned crawl space
- Super insulated envelope with 1.5 air changes per hour at 50 pa.
- Heat Recovery Ventilation for fresh air
- Solar radiant hydronic heat system
- Forced-air gas heat system
- 2800 watt grid-tied PV system
- Electric vehicle charging station
- Energy monitoring of production and consumption in real time
- Gallon water catchment system that irrigates of vegetable garden for donation to a local food bank

There are a lot of firsts that went along with this ground breaking project. It was the first building on campus to have a grid-tied solar system, and the first grid-tied solar system for the local utility provider. It was also the first fully viewable zero-energy educational facility in the state of Washington.
Perhaps the best part the house is experimenting with the energy monitoring system. The house regularly consumes a modest 200 watts of power while even on a moderately cloudy day, it produces four times the amount of power it uses. It is an exciting experience for students and visitors to see how much energy the appliances in the house use. We can even show the numbers in real time.

This has been a fantastic project, and stands as an example to the students of CPTC and the surrounding community of the potential of an intelligently designed green building. The Zero Energy House is not only environmentally friendly, but comfortable and economically feasible. The goal of sustainable living is within reach, we just have to grasp it!

Daniel Smith

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