

Solar Style

Studio built in Frelinghuysen proves energy independence benefits everyone.

Multimedia artists Chris Funkhouser and Amy Hufnagel, in collaboration with architect Ate Atema and builders Craig and Tom Snyder of Snyders' Custom Builders, completed the construction of an art studio employing several sustainable design strategies and a range of unusual materials. Generating more electricity than it uses, comfortably warm on even the coldest winter days thanks to its passive solar design, and turning more than a few heads with its rusting shell and modern lines, their studio is the result of the couple's enthusiasm for architecture that is both aesthetically satisfying and civic-minded.

As Atema writes in an essay about the studio published in the Southern California Institute of Architecture's alumni magazine, "designing sustainable architecture is a dance between frugality and hedonism." While overbuilt by conventional standards, this "solar shed" performs at a higher level than most homes. It requires very little supplementary heat in the winter, and minimizes the need for air conditioning in the summer by taking advantage of shade, insulation, extra-thick concrete floors, and windows placed to catch prevailing breezes. "Doing the right thing is a lot more satisfying when it's also comfortable and beautiful" says Atema. As he puts it, "there are lots of warm coats out

there, but I'd rather wear the one that also looks good and fits well, and with the materials and design knowledge available today, buildings can be all these things too."

Funkhouser and Hufnagel are participants in New Jersey's Clean Energy Program, which offers significant incentives for residents who incorporate solar power into their homes. This

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program has already provided the couple with a large rebate that helped them recoup a significant part of the cost of the two kilowatt photovoltaic solar electrical system located at the rear of their yard. This system provides power for all the lights and other electrical equipment in the studio, and is also designed to "run their utility meter backwards" whenever more power is generated than they use, effectively creating additional savings. As further incentive, New Jersey will also provide the couple with annual tax deductions for their use of "clean energies." And all this is in addition to the savings they are already realizing by having designed a structure that minimizes energy use across the board, a fundamentally civic approach to making buildings, since greater



Funkhouser Hufnagel Studio located in Frelinghuysen.

energy independence of course ultimately benefits everyone.

What's It Made of?

Perhaps the most unusual feature of the studio is the exterior cladding of corrugated Cor-Ten steel. All materials in the studio were also chosen for both their visual appeal and performance, and the Cor-Ten is a good example. A special steel alloy designed to prevent corrosion by quickly developing a layer of protective and stable rust when exposed to moisture, Cor-Ten, first developed for industrial applications and embraced by bridge builders, has been made famous in art circles by Richard Serra and Louise Bourgeois, whose large installations are often made of this material. Though it proved quite difficult to source the material, builder Snyder did eventually locate a supplier in Arizona, and though an unremarkable silver-grey upon delivery, much of the cladding is now already a dramatic reddish orange that nearly matches their log cabin home just to the east of the studio. At the same time, Cor-Ten is also very "green." Since the rust is the finish, it never needs painting or other treatments. Since it is very

durable, it should outlast most other claddings. And if it should need to be replaced, because it is steel, it is easily and completely recyclable. The Galvalume standing-seam roof also requires no maintenance, and can also be recycled at the end of its life.

Moving inside, the studio's interior is simple yet elegant. A small entrance vestibule, an electronic media room, and an archive room are strung along the northern edge of the sunlight-flooded forty-foot long main studio space. The floors throughout are integrally-dyed slate-blue concrete with a smooth finish, and the ceiling, sloping up to twelve feet high at the southern wall of large glass doors and custom-built Eagle windows, is a clean surface of plywood that reflects a warm light into the space. Walls are of painted gypsum board, and are already covered with evidence of the creative life within: bookshelves, photographs, projection surfaces, and the artists' work.

ROI?

It's been a little more than a year since the studio was built and certainly there are moral benefits to this type of building. But is it worth it really?

Sure is, Amy Hufnagel says, "Energy efficient, or what is also known as green architecture, is a hard consumer choice because it appears that you are spending more money. However, after spending one year in a super insulated building, with energy efficient appliances, and solar energy — both passive and active — I can honestly report that the monthly savings is astronomical. My husband and I added over 900 new square feet of living/working space without adding any new monthly expenses (except insurance). And not only did we create an amazing monthly budget for new space, but we are helping the air quality, selling power to the grid, and using less non-renewable resources. In turn, our choice creates the potential, at least through our individual choice, of helping to create a better future for the next generation of Warren county residents." *wcl*

Christopher Funkhouser has published interviews, reviews, poetry, essays, and other creative works in numerous magazines, books, and Web sites.

Amy Hufnagel is a visual artist, writer, and an arts programmer/ administrator. Currently she is working primarily in the world of small press publishing.