



Stepping stones to sustainability

What cohousing communities can learn from ecovillages

By Liz Walker
Photos by Jim Bosjolie

June 2006

Editor's note: Liz Walker, a resident of EcoVillage at Ithaca, NY, and the author of [EcoVillage at Ithaca: Pioneering a Sustainable Culture](#), will be a featured presenter at the [Cohousing Conference](#) scheduled for July 21-23 in Chapel Hill, NC. She will be a panelist with Chuck Durrett, author of [Senior Cohousing: A Community Approach to Independent Living](#), and Dave Wann, author of [Reinventing Community: Stories from the Walkways of Cohousing](#), on Friday, July 21, and also will present a breakout session on cohousing's ecological footprint.

[See a quick overview of the EcoVillage at Ithaca.](#)

This is a historic moment on Planet Earth. Life as we know it is about to change dramatically as global climate change accelerates, and as we reach “Peak Oil,” when demand outstrips supply for fossil fuels that are increasingly hard to extract. As we look toward a future in which our traditional energy sources are severely depleted, cohousing neighborhoods have an increasingly important role to play in modeling a greener lifestyle.

You may already know that cohousing represents a huge step forward in quality of life and sense of community compared to the typical American lifestyle. You also may know that most cohousing communities are environmentally friendly – they often have densely clustered buildings (using less land), shared common facilities (using fewer resources) and smaller homes (using less heat and building materials). Some cohousing groups (such as Westwood in Asheville, NC) have innovative shared heating systems and use renewable energy for heat and hot water. Others use photovoltaic panels for generating electricity.

If many cohousing groups are already doing all this, what can they possibly learn from ecovillages? In my view, ecovillages carry ecological design to the next step. An ecovillage attempts to create well-integrated systems of housing, food, work and play that enhance, rather than degrade the natural environment. Ecovillages around the world are living experiments that vary tremendously in size, primary focus and style. They are on every continent, and include traditional Italian hill towns to Senegalese fishing villages to permaculture communities in Australia and high-tech cohousing communities in Denmark.



FROG's Common House includes large triple-glazed, passive solar windows on the south side and laundry hung out to dry on the clothesline.

Cohousing may be used as the social building block of an ecovillage. But an ecovillage also includes economic activity, education and organic farming, as well as housing. I live in a cohousing ecovillage in Upstate New York – EcoVillage at Ithaca (EVI). In my experience, ecovillages are distinguished from typical cohousing communities by emphasizing a holistic approach to ecological, social, economic and spiritual design. Ecovillages typically incorporate green building, organic food production and on-site businesses. They are oriented toward learning from experimental systems and teaching the lessons learned.

Some cohousing communities integrate many but not all of these features. I offer a challenge to other cohousing communities to consider not only adding on some of these eco-features, but also serving as a catalyst to learning, teaching and organizing local sustainability initiatives. The world needs your inspiration.

This article, adapted from a chapter in my recent book, *EcoVillage at Ithaca: Pioneering a Sustainable Culture* (New Society Publishers, 2005) takes a look at some of the ecological design features that we took into account in building our cohousing ecovillage. Any or all of the features mentioned here can be incorporated into designing (or retrofitting) a cohousing community that is not specifically an ecovillage. I hope that some of these ideas will help to spark your imagination, and encourage you to think about ways to take the next step toward sustainable living.

EVI takes a pragmatic approach to ecological sustainability. Rather than opt for the sexiest (and often most expensive) appropriate technologies, we put our money into energy reduction measures first. Some of those measures are not easy to spot (super-insulated homes that have been oriented for maximum solar exposure are less visibly “ecological” than are windmills and solar panels, for example), but that doesn’t mean they aren’t effective. Taken together they add up. We are building a “green” community and culture, rather than individual state-of-the-art “green” buildings. And it’s working: Our ecological footprint is much smaller than the typical footprint of most U.S. households.

Location

EVI’s location is one of our biggest energy savers, because it helps keep our transportation footprint relatively small. First we tend not to travel very far from day to day. Many people work on-site, making travel unnecessary. And if we need to go somewhere, downtown Ithaca is only 2½ miles away – one of the main reasons we decided to build here and not on the free site 10 miles out of town.



A naturalist and wilderness skills instructor leads a Kids' Council gathering on Community Building and Connecting with the Land.

Our choice of location may seem trivial, but it has significant ecological benefits. Greg Thomas, a former resident and energy consultant, worked out that over three decades, our 60-household village would save about \$716,000 in gasoline costs (based on a conservative one round-trip per household per day) compared to the free site. And that doesn't even count the environmental benefits of burning less gasoline. Of course, a downtown location would have saved even more, but we would have had to sacrifice on-site organic farming, something we weren't prepared to

do.

The fact that we live so close together makes carpooling and car sharing a natural. A third of EVI couples or families have cut down to one vehicle, and two of our single homeowners are completely car-free. It helps that several families make their second cars available to other members who sign up to use them (for a small fee of 30 cents a mile). And one family with two young children doesn't charge money but instead barter car use in return for childcare. Fewer cars make for less pollution and a reduced consumption of all the materials that go into producing and maintaining them.

As a group we also make use of public transportation. The political clout of just 30 FROG families enabled us to lobby successfully for a bus stop at our entry road. Twenty EcoVillagers now take the bus to town for work, shopping or recreation. Once the Town increases bus service in the near future, bus ridership should increase. This is far more energy-efficient than driving individual cars.

There is no doubt, however, that the driving habit is hard to break. (It just seems easier to hop in the car to run those errands than to bike, walk or wait for the bus – especially if it's raining.) The value our society puts on independence and mobility fuels our love affair with the automobile and shapes our nation's infrastructure, making some car use unavoidable. Even as a community of environmentalists, many EVI families still own two cars and use them daily. As with most U.S. citizens, transportation is still our environmental Achilles heel. But we are making headway, and EVI's location is helping us do it.

On-site employment

On-site employment at EVI saves energy and helps create community – both essential to building a sustainable culture. A recent membership survey showed that about two thirds of EVI's wage-earning adults work at least part-time on-site. Not surprisingly, EVI boasts a wide range of workers, including a naturopathic doctor, software engineers, “green” builders, childcare providers, environmental educators, farmers, graphic artists, therapists, writers and more.



Residents enjoy the fruits of their labor in the Common House.

This is great for the environment. For one thing, people don't have to commute to work. For another, they can share resources such as copy machines and high speed Internet access, reducing the overall costs associated with the purchase and operation of office-related equipment.

But having people working on-site does more than save various kinds of

energy. It also reinforces the vibrant sense of community that brings us together. On any given day, we may have upwards of 80 percent of our population on-site. (We have 60 children, from newborn to high-school age, and 102 adults: 17 stay-at-home parents, 12 retirees, five currently unemployed workers and 68 employed workers.) Everybody mixes, making for a richness of interaction that is reminiscent of a hunter-gatherer tribe or a small New England town.

Internal economy

We are increasingly seeing an internal economy develop at EVI – one that is partially money-based and partially based on barter. Not only that, but the money that comes into the village has a multiplier effect inside the community as it travels “around the block.” For instance when my partner Jared started a new business in computer ergonomics, he hired Megan to create his logo and business cards, Jim to create his website and Steve to set up his database. Once Jared was up and running, he gave Krishna (a science writer) a free consultation when he complained of eyestrain. Krishna, in turn, traded at least an equivalent amount of time reviewing the manuscript for my book. Later on, Mike, a software engineer who typically spends eight hours a day at the computer, hired Jared to do a consultation for him. And some of the money from Mike’s work with Jared went to help pay for our family’s CSA share at our on-site organic farm, West Haven Farm. Having the money that is made here stay here is an added benefit of living in a close-knit community.

Of course, by providing more on-site services for each other, we further reduce the amount of commuting that we need to do, saving both time and energy. Plus we support each other in “right livelihood” (satisfying work that reflects our values). Place-based work sites are good for us and good for the planet.

Land use

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Ecovillage of Ithaca's site plan conserved 90 percent of its 175-acre site as open space for organic agriculture, woods, meadows and wetlands.

Land conservation is fundamental to the EVI vision. In fact, EVI is intended to provide a viable alternative to suburban sprawl. We purchased the EVI site from Lakeside Development Corporation, which originally had planned to build 150 homes on one-acre lots, using up 90 percent of the site. Under their site plan, 10 percent of the site was left as open space, as mandated by the Town of Ithaca. Turning this typical development model on its head, EVI's site plan conserves 90 percent of our 175-acre site as open space for organic agriculture, woods, meadows and wetlands. This leaves 10 percent for development. We build our

homes in dense clusters, and each of our several neighborhoods requires only three to four acres for their 30 homes, Common House and parking. We still have room for a planned EcoVillage Education Center, and perhaps an office building. We hope to increase the 55 acres currently set aside in a permanent conservation easement to a much larger portion of the land, thus ensuring plenty of open space for future generations.

Water conservation

Water conservation doesn't usually seem important in our lush green region,

but one summer's drought made us acutely conscious of water use. Even our one-acre swimming pond dropped about three vertical feet. Our water consumption levels are far lower than that of typical U.S. households.

First, we limit the amount of water used in our day-to-day activities. Some people have composting toilets, and all of our conventional toilets use only 1½ gallons (6.8 liters) of water per flush. Our faucets are low-flow. Outside we landscape mostly with plants that require little water, and we mulch heavily to conserve what they do use. And gentle cohousing peer pressure encourages people to water their gardens only during the cool part of the day.

Second, we use various methods to collect and redirect our rainwater. Neighborhood drains and swales collect rainwater runoff from our roofs and direct it to the pond. We use pond water for our community garden and as drinking water for our sheep and chickens. Some households in FROG have retrofitted their roofs with gutters and connected them to rain barrels to store water for family gardens. And half the households in SONG feed their rainwater runoff into an underground cistern. Through water conservation and rainwater collection, we're learning to make the most of this precious resource.

Food

When it comes to food, EVI "goes green" as much as possible, growing organic fruits and vegetables and buying bulk, organic foodstuffs for what we don't produce ourselves. Gardening provides some of our food. Each neighborhood maintains a large community garden. Edible landscaping around our homes further builds the habitat-to-food connection. Small gardens and south-facing trellises grow grapes, kiwi, beans, peas and other climbing vines. But by far the bulk of our produce comes from West Haven Farm. We make good use of the farm's bountiful harvests, often basing Common House meals around what is seasonally available. And we preserve huge quantities of its produce for later use. One summer, the 500 pounds of tomatoes that we canned provided a tasty base for stews, soups and spaghetti sauce throughout the winter.

What we don't produce, we buy. EVI shops through United Natural Foods, a regional distributor offering inexpensive bulk organic foods. Their long delivery truck arrives once a month, barely making it around our turnaround. A host of women and children unload and sort the huge bags of grains and beans and boxes of pasta. Some items are destined for the Common House; others go to families for individual use.

Our commitment to growing and buying mostly organic is a fundamental aspect of our larger commitment to becoming more sustainable here at EVI. Organic farming methods enrich the soil rather than depleting it. By supporting organic food production – either here at EVI or through our bulk food purchases – we are supporting our own health and the health of a planet that needs help.

You may think, "But we don't have a farm nearby!" However, even urban cohousing communities can usually find a little patch of land for growing vegetables. Fruit trees and berries can be incorporated easily into the pedestrian walkways. Food-buying clubs, farmers' markets, local food cooperatives and direct bulk purchases from local farmers can supplement on-site food while extending a sense of community to the surrounding area.

Green building

At EVI we have great examples of different green building techniques. But



A greenhouse is used for starting and growing crops as part of the 11-acre organic Community Supported Agriculture farm on the land.

“green building” does not just refer to insulated concrete forms, timber framing or straw bales. “Green building” encompasses a whole philosophy of design that incorporates ecologically friendly buildings with careful land use and design.

Neighborhoods at EVI demonstrate the use of some basic “green design” principles. First, like most cohousing communities, we reduce our physical footprint by densely clustering our homes. And our shared living/working space at the Common House (dining hall, sitting room, guestroom, children’s playroom and shared laundry room) makes it possible for us to build smaller, more compact homes.

We also incorporate energy-saving design elements into each home. We orient our homes to face due south to maximize solar gain. Large south-facing double- or triple-glazed window walls absorb heat and bring in as much sun as possible in the cooler months. Roof overhangs reduce solar gain in the summer, helping to keep things cool and comfortable. Each duplex shares one interior wall, reducing the overall surface area of the building and saving substantially on heating/cooling costs. Shared heating systems maximize the efficiency of the boilers. At SONG, earth berms add insulation to the north wall of the basements, with lookout windows on the south side making the space attractive and livable.



Almost half of SONG homes have photovoltaics on the roofs and generate electricity from the sun.

Energy savings are impressive. At FROG, we use approximately 40 percent less gas and electricity than other typical homes in the northeastern U.S. And it is relatively easy to save an additional 20 percent, simply by setting the thermostats lower at night and using less hot water. It is too early to tell yet, but it is likely that SONG’s more advanced technology will make energy savings there even more impressive than at FROG.

We also use ecologically desirable materials in the construction and finishing of our homes. Construction materials are always changing as technology advances, and it requires a great deal of research to become informed about available options. For both FROG and SONG, special committees took on the research and reported back with their recommendations to the larger group, which then made the final decisions. Beginning with the design stage, we had to make numerous difficult choices as we balanced healthy, ecologically desirable materials with affordability.

Heating systems were one of our first concerns. At FROG one of the many discussions revolved around heat recovery ventilators (HRVs). At the time the devices that recover waste heat as a building is ventilated were still quite expensive. Our committee calculated that it would take 30 years to save enough money to pay for their initial cost, and because they were not a primary part of the heating system, it didn’t seem worth it. Six years later, however, when SONG was coming on stream, HRV technology had advanced and the price had dropped. So SONG recommended them, particularly for their larger units.

Framing materials were another concern. FROG residents opted to use fairly standard stick-frame construction, albeit with double walls that were filled with blown-in cellulose (recycled newspaper) insulation. SONG, however, opted to use structurally insulated panels (SIPs), a relatively new material that was little known when FROG was being built. SIPs are the opposite of ICFs, in that the foam insulation sits on the inside of its 4-by-8-foot panels, sandwiched between two pieces of oriented strand board (OSB), which is made from lower grade wood and reduces the harvesting of large trees. SIPs are quite environmentally friendly, even though they are not natural building materials. An entire wall can be built in a day and the house closed in quickly, resulting in fewer moisture problems. SIPs conserve wood and create airtight

building seals. But SIPs are made with formaldehyde glue — their main drawback. The glues that are used vary in their composition, however, and we were able to purchase the least toxic variety. Both framing systems, though different, are structurally sound and work well in their respective neighborhoods.

Other materials requiring our consideration included insulation (a key consideration in our cloudy, Northeast climate), appliances, paints and varnishes, and indoor air quality, to name but a few. In every case our resident committees put in many research hours. They considered the amount of “embedded energy” – the amount of energy it takes to manufacture and transport goods and materials – in each product. They tried to find local suppliers where possible and selected appliances that minimized energy use. They chose paints and varnishes that would not out-gas, helping to keep indoor air quality high. And they tried to anticipate the future, recommending that we plan for retrofits. So, in both neighborhoods, we roughed in our plumbing and wiring in such a way that we could easily retrofit alternative technologies as they become available (photovoltaics, solar hot water heaters, or greywater recovery systems, etc.). All of our research, discussions and choices have paid off. Both FROG and SONG are well sited, energy efficient and ecologically friendly in their composition.

Recycling

No discussion of sustainability would be complete without mentioning the importance of reusing and recycling. First of all we try to share resources whenever possible. For instance, we have three community lawnmowers for 60 households, and each Common House has three washers and dryers for community use. FROG has a woodshop that any resident can be trained to use, and SONG’s Common House will have a work-out room.



Catherine Johnson uses a garden cart to transport laundry and other items around the cohousing ecovillage.

We have a very popular “re-use room” that is like a free store. People donate clothes, shoes, games, books and household goods they no longer want. Often these disappear in a day or so. In addition, there are commonly traded items, like household furniture or camping supplies or even kayaks and canoes that people borrow from each other frequently.

Each neighborhood has its own central compost piles for food scraps. These are maintained by the outdoor team, who places “brown matter” over “green.” Basically you chop up large pieces of kitchen waste (such as corn cobs or bagels)

and crush any eggshells so that everything will compost faster. And then you cover it all up with brown matter, such as leaves, hay or other mulch. If the mix isn’t right, it won’t heat up. But when the mix is good the compost easily heats up (reaching 140 to 160 degrees Fahrenheit [60 to 71 Celsius]) and turns into very rich humus. The finished product has no smell and is an excellent addition to our home gardens.

EVI has a village-wide recycling shed. There are big bins for #1 and #2 plastics, glass, metal and plasticized cartons. Other bins hold cardboard and paper. The county picks up our items for recycling once a week. EVI goes a step further, however, by sending back yogurt containers to the manufacturer, as well as medicine bottles and batteries. We even collect Styrofoam peanuts to send to a local company that uses them for packing. For items which can’t be reused, recycled or composted, we have a village-wide dumpster. After much soul-searching we recently upgraded to a larger size, and we now fill a 108-cubic-foot dumpster every week. Not bad for a community of 160 people. Although this is about a quarter of what other U.S. housing developments of this size generate, in my view there is still plenty of room for improvement.

Exciting new developments

Whether we focus on energy reduction, “green” building, organic farming or recycling we are constantly refining our practices to create a more eco-friendly place in which to live and work. In the past year since my book came out, there have been a number of dramatic changes in our village. There are now more on-site businesses – an organic berry farm, a yogurt business, a small bakery business, a creative arts summer camp, and others. The village recently reached consensus to declare 2006 as the “Year of the lower footprint.” An energy task force with eight sub-committees has jump-started the process of helping us to examine ways to conserve more energy, grow and preserve more food on-site, build root cellars, and retrofit our water pumps to use solar electricity. EcoVillage at Ithaca also has helped to catalyze a county-wide car-share system that is being organized with the participation of Cornell, Ithaca College, the city and our local bus company. A “sustainability circle” for teachers, led by EcoVillage residents, has catalyzed a movement for serving local, organic foods in the schools.

I think it’s important to remember that we are all on the path toward a more sustainable future. There is no one “right” way to do it, but cohousing communities, close urban neighborhoods, ecovillages and other venues can try different methods of “eco-living” and see what catches on. And we can all share what we learn with our broader communities to create a win-win cultural shift.

EcoVillage at Ithaca: A quick overview

Located in the town of Ithaca, NY, EVI includes two adjacent cohousing communities (nicknamed FROG and SONG), each with 30 homes that are all passive solar, super-insulated duplexes densely clustered on a total of seven acres. Ninety percent of EVI’s 176-acre site is preserved as open space for organic farms, meadows, woods and wetlands. Together the community of 160 residents has dozens of green businesses, many of them based on-site.

One of these, West Haven Farm, a 10-acre organic farm, feeds 1,000 people a week during the growing season. A new organic berry farm was recently developed. A non-profit educational arm, affiliated with Cornell University and Ithaca College, offers on-site courses on various aspects of sustainable living and design. Future plans call for more cohousing neighborhoods, an EcoVillage Education Center, an alternative high school and more on-site employment opportunities. For more information, visit EcoVillage at Ithaca’s [website](#).
