Friends and Curtailers

Excerpted from an article by Trinica Sampson
from interviews she and Faith Morgan did with Bob Brecha and John Morgan, 2013

Bob Brecha is the owner/builder of a straw bale home in Yellow Springs, Ohio. John Morgan is a member of Raven Rocks, a rural intentional community in Eastern Ohio made up of people who saved 1,000 acres of land from being strip-mined.

Three Areas for Personal Change

Food

In *Plan C,* Pat Murphy wrote, "Raising livestock generates 9% of all CO_2 emissions, 37% of methane emissions, and 65% of nitrous oxide emissions on the planet.[1]" Livestock are responsible for 18% of the world's total greenhouse gas emissions. Each of the people interviewed understood the urgency of this issue and addressed how they had changed their diets to reduce the environmental impact of the food they eat.

John Morgan grows much of his own food, canning and freezing reserves for the winter. What he cannot grow, he buys in bulk to reduce packaging. He buys local meat, eggs, and milk from friends and obtains venison from the Raven Rocks land. Thus he eliminates greenhouse gas emissions from the production of factory meat and poultry. He has also made changes in the preparation of his food that greatly reduce the amount of fossil fuel he uses. "I have a complex breakfast, with fresh vegetables, cereal, and eggs. I heat it in a double boiler, and then I put that in a thick-walled foam cooler. I just let it finish cooking in there from the latent heat. I don't have to worry about timing it, I just go about my other chores, and whenever I'm done, in half an hour or however long it takes, it's cooked—using no fossil fuel after I've brought it to a boil initially," John said. He cooks a lot of his food that way. He also makes an effort to eat organically and uses everything he can, including bones for broth. He does not feel his choices are an inconvenience. Since he works for himself, they do not adversely affect his schedule. They do, however, give John the comfort of knowing that he is minimizing his negative impact on the earth, which is important to him.

Bob Brecha also eats local and organic foods as much as possible rather than going out to eat at restaurants or buying manufactured or processed foods. "We eat very little packaged or frozen food," he said. He and his wife built an earthen bread oven, which they use frequently.

Housing

Buildings in the United States contribute more to annual CO_2 emissions (48%) than food and transportation combined. Bob Brecha and John Morgan have taken measures to remedy this situation. Bob became aware and concerned about our use of fossil fuel resources and climate degradation several years ago. He, his wife Käthi, and their two daughters used to live in a 130 year-old, 2,200 square-foot, two-story house. To reduce their energy use, they only heated one room at night, where they spent the evening. "We kept our energy use fairly low in the winter by closing off parts of the house at night and using a woodstove. The kitchen that was closed off would get cold, so it was not a particularly comfortable way to reduce energy use," Bob acknowledged.

In 2011, they decided to downsize and moved to a 1,300 square-foot straw bale house, which they had built in 2003. The move was made easier since they had been living in a 700 square-foot apartment during Bob's one-year sabbatical in Germany just before their return in 2012. "The house seemed—in comparison to the apartment—to be quite large," Bob said. "It's actually plenty of space for four people, it's a little easier to take care of, and it's been extremely comfortable to live in."

Bob's house has radiant floor heat, under-slab insulation, and a solar hot water system for heating and domestic hot water.

Bob designed the house with radiant floor heat, under-slab insulation, and a solar hot water system for heating and domestic hot water. His family keeps the thermostat at 68 degrees. If the inside temperature goes down to 67 degrees the radiant floor heat begins operating. But the house is so well insulated, the

The north side of Bob and Käthi's straw bale house

temperature doesn't vary by more than one degree or so and it takes ten or twelve hours for its temperature to change by a single degree. In the summer, they open the windows at night and close them during the day to keep the house as cool as possible. When the house begins to heat up, using a portable air conditioner for an hour is enough to bring the temperature down. "It's a little bit like living *with* the house," Bob noted.

Personal habits must also be considered. Bob says, "Building a house to very high energy efficiency standards is important, but there's also this very important piece that says, 'How do people live inside the house? What are they using and not using?'" Bob's family does not use a clothes dryer. According to him, it was no hardship, but simply a decision agreed upon by the family that they did not need one. His family uses less electricity than most—250 kilowatt-hours per month as opposed to the 1,000 kilowatt-hours used by a typical family of four. "We can't figure out why it's so low," Bob said, bemused. "It doesn't feel to us like we're doing anything different, or strange, or uncomfortable." His heating bill ranges between $60 and $80 for the entire winter, and they rarely need to use the air conditioner. Their efforts have led to a huge decrease in the amount of energy they use each year. Compared to a standard house of its size, the straw bale house uses about $1,500 less per year in energy bills. Because it costs about the same amount to build as a standard house, the $1,500 per year is pure savings. His method of living *with* the house rather than simply *in* the house is one that every individual on the planet could adopt—if we lived *with* the earth instead of considering ourselves mere inhabitants of it, our relationship would be far more symbiotic.

John Morgan has also made major reductions in his home energy use, encouraged by Linda Wigington, creator of the Thousand Home Challenge. *(See box on next page.)*

John explained "We have learned that with proper construction, appropriate technology, and lifestyle adjustments, we can make huge reductions in the energy consumption of our buildings." John's old farmhouse was originally heated by

John's old farmhouse with the ductless heat pump compressor visible next to the window.

wood fireplaces and most recently by a hot water heating system with a cast iron boiler. John has insulated the house with blown in insulation placed in the 5-inch rough-cut stud walls. He also added two extra panes to the old single pane windows. In 2010 when John first entered the Thousand Home Challenge, he set his winter thermostat to 50 degrees and reduced electrical consumption every way possible. Yet he was shocked to discover he wasn't even close to meeting the challenge.

John had long debated whether to replace the old boiler with a more efficient one, switch to solar thermal with radiant heat, or some other option. His ultimate goal was to renovate the house toward the Passive House standard. He decided to install what would be an appropriate heating option after a Passive House renovation—the smallest and most efficient Fujitsu ductless mini-split heat pump (DHP). It was arguably way too small for the house in its present condition. After two winter days he decided he could live without the boiler and removed it. After installing the DHP he met the

John's ductless heat pump

Thousand Home Challenge with room to spare. In 2012, despite it being his second year with electric heat, he celebrated his lowest total electric use in the 32 years he has lived in the house.

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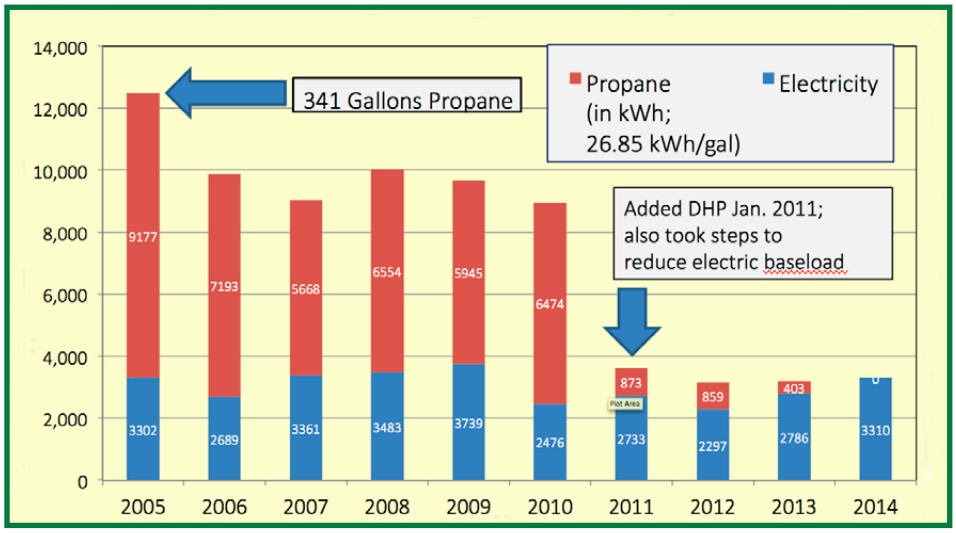
John lets the heat pump warm his office workspace while he lets the rest of the house be cooler. He described it as the "high-tech version of having a stove in the room you spend the most time in." This technique of maintaining a "warm space," or "warm room," has both reduced his kilowatt-hours consumption and improved his comfort. He currently keeps the DHP set at its lowest setting, 60 degrees. John considers this a temporary situation, explaining, "Once the house is renovated to Passive House standards, the heat pump will make the whole house perfectly comfortable by normal living standards while using no more energy."

He plans to add photovoltaics (PV) to generate electricity, with the goal of achieving "net zero energy." One way John has reduced his electric consumption is by doing all his graphic work on a Macbook laptop because it is more efficient than a tower computer. He also bought the most energy-efficient appliances available and switched to LED lighting. John records his daily consumption using several watt meters and his sub metered DHP, to see where and how to conserve electricity. Details about John's Thousand Home Challenge case, and others, showing a diversity of ways to make deep energy reductions, can be found on the THC case studies page: http://thousandhomechallenge.com/case-studies.

John's Measured Annual Site Energy Use (in kWh)



From John's Thousand Home Challange case study

John's old boiler, ready for recycling

Passive House and Thousand Home Challenge

Complimentary, but different approaches to the same goal

The 1000 Home Challenge is designed to help households make deep reductions in actual energy use in a variety of ways, including lifestyle changes, building improvements, and installing photovoltaic (PV). The 1000 Home Challenge offers a choice of two options: **"Option A"** which requires a 75% reduction in annual household energy use based on a one-year recent verified baseline, or **"Option B"** with an absolute target which takes into account the climate, house size, and number of occupants in an effort to equalize the challenge.

The 1000 Home Challenge differs from the Passive House building standard in that it is based on actual total end use energy consumption, so it can be met by a combination of lifestyle choices, infrastructure improvements, and renewables.

Passive House, unlike 1000 Home Challenge, is a building standard which aims for buildings that consume no more than 15 kilowatt-hours per square meter of living area for heating and cooling energy per year. The Passive House standard introduces Lifecycle Analysis, showing how the 5% to 10% increase in the initial cost of building a Passive House yields far greater lifetime savings in energy bills. Over 40,000 Passive House buildings (homes and apartments as well as commercial, institution, and industrial buildings) have been constructed worldwide.[5]

The goal of the Passive House standard is an 80% to 90% reduction in space and water heating energy use, but unlike the 1000 Home Challenge, the building standard can be met, while the actual deep reduction of energy use may or may not be, depending on lifestyle choices.

Transportation

With sufficient resources, appropriate technology allows us to build near zero energy homes without sacrificing comfort. Transportation is a much tougher challenge. "We have not figured out how we can get from here to there without using fossil fuels or giving up the luxury of speed," John noted. "Some people kid themselves that they're doing it with electric cars, but the electricity to charge the car comes from fossil fuels. It's been a long time since I have been able to drive anywhere without it bothering my conscience. It helps to buy a good hybrid car, but the only thing that really solves the problem is not to drive places, or to go very, very slowly like the Amish do." John drives a manual Honda Insight with a lifetime average of over 60 mpg, and he tries hard to avoid unnecessary trips. He drives more slowly to improve his fuel economy, keeping a steady 55 miles per hour on the interstate highway when he can. If traffic is heavy, he puts his flashers on to warn other drivers.

He also bikes or walks whenever possible; he calls the distance between his home and his shop in Beallsville Ohio, "a short enough distance that it encourages me to bicycle any time the weather isn't extremely bad or I don't have a lot to carry." The 1.5-mile walk to the main part of Raven Rocks takes about thirty minutes compared to the ten it would take driving the longer route by car. As John can attest, reducing one's impact means, "being willing to take time to save resources." John noted, "When we in wealthy countries talk of efficiency, we almost always mean using more resources, especially energy, to save time." But looking at the big picture of our situation, we have a limited supply of what "efficiency" drives us to use more of, and an unlimited supply of what we are trying to save. John is very active in the peace movement, but his concern about the way he gets from place to place means that he often has to consider whether traveling to a demonstration is worth the fossil fuel it would take to get there.

It is difficult to see an immediate solution to the transportation problem. Until one is found, walking and bicycling seem to be the best choices. For those who live further from their destination, carpooling is another option. Bob Brecha has a 24-mile commute to and from his job at the University of Dayton in Ohio, so he carpools with fellow employees who live nearby. Once a week, he bikes to work, which takes about an hour and a half as opposed to the half-hour drive. "An hour and a half is a long time to commute one way," he admitted, "but there's a couple ways of looking at it. Is it lost time, or is it time where I can decompress? It's nice to just have the silence and nothing to do for that time but think a little bit and let my mind wander."

Bob rides his bike to work one day a week and carpools. Its a 30 minute car ride and takes him one and a half hours by bike.

The Brecha family walks or bikes to town to do their shopping. Of course, living in a small town makes that easier. "It's not much quicker to drive a car than it is to ride a bike in Yellow Springs," Bob pointed out. However, he tries not to think of it in terms of a schedule. "We try to avoid the time element as being the deciding factor," he said. Perhaps if others could simply switch their perspective and consider the benefit of saving resources and the environment rather than the consequences of taking the extra time to do so, there would be more environmentally aware people and a healthier world.

The Obstacle of Attitude

Many people consider our times the most progressive age in human history. Despite this, we have not made any progress in terms of climate change. We are actually losing ground, leaving us further away from achieving energy sustainability than we were twenty-one years ago.[4] There are two words that can sum up the reasons people don't change their lifestyle—discomfort and inconvenience. Our attitude toward being inconvenienced affects our willingness to take action against the threat of climate change. Our reluctance to realize that comfort and convenience are lesser priorities (when compared to reducing greenhouse gas emissions) is leading to the degradation of the earth.

Prioritizing Money

Our society thinks in terms of money above all else. People do not want to know how much energy they are saving—they want to know how much money they are going to have to spend. "When people talk about how much electricity they're using, they talk about how much they spent per month in dollars. Very few people will know and tell you in kilowatt-

hours," John Morgan pointed out. "The problem with money is that it plays into a world society in which there are vast disparities of wealth. If we only think in terms of money, the people who have much more than they need can feel like they're being efficient when they're actually being very wasteful." He feels that this consumer-driven way of thinking is ingrained into our very being and will be difficult to overcome.

. . . people always ask how long solar PV is going to take to pay off, yet they never ask the same question when buying a car.

Bob Brecha studied under a professor in Germany who pointed out that people always ask how long solar PV is going to take to pay off. Yet they never ask the same question when buying a car. The professor said that many people buy expensive cars that cost two to five times as much as a basic car and will never pay off. Bob noted that, when it comes to renewable energy, we've gotten into the habit of thinking it has to pay off immediately. This has become an excuse not to make changes to our lifestyles.

Looking for the Pay-Off

Seeing things in the long term is a problem for many people. We do not want to know whether our extra effort will *eventually* be worth it. We want to have our pay-off *now*. We spend money on flat-screen televisions, cell phones, and other matters of personal pleasure, but when it comes to the environment, we become reluctant to spend without knowing whether we will get our money back. John Morgan argued, "Our current economic system encourages us to exploit nonrenewable resources." He acknowledged that his choices have been in direct opposition to "our capitalist culture, which has such an emphasis on short-term profits." Pat Murphy agreed with these statements, adding, "The nature of our capitalistic culture is, more than anything else, a consumer culture. It's competitive, so as we tend to grow richer, the inequity is increasing. The rich are getting richer, the poor are getting poorer, and that's the characteristic of a culture only interested in material goods." With such shallow concerns, it is no wonder that so few people are concerned about climate change.

A prevailing attitude in our culture puts saving money above most other endeavors. Even those who believe in climate change can be reluctant to make changes, often using cost as an excuse. However, small lifestyle changes such as turning off lights when a room is empty, using the air conditioner less frequently, if at all, or setting it to a higher temperature, and unplugging appliances when they are not in use are also important if we are to reduce energy use and CO_2 emissions. The same small changes can be made in regard to transportation; as noted earlier, walking, biking and carpooling are viable alternatives. People seem to overlook the simple options, instead assuming that to change their lives would require more money than they are willing to spend. For those who have the resources, buying a high MPG hybrid vehicle, doing a deep-energy retrofit on their home or office, or even building a super-efficient building are appropriate steps to take.

Passive House

Making substantial building changes to reduce one's energy impact on the world can be a costly endeavor. 48% of all CO_2 generated and energy consumed in the U.S. comes from the construction and operation of buildings. This energy use is very important. The highest building energy-efficiency standard in the

Wet cellulose insulation being blown into 12' thick walls for a Passive House retrofit.

Adding double studs for a Passive House retrofit.

world, Passive House, was developed in Germany and reduces building energy use 80%. With this building method, one needs only a very small heating and cooling system. One argument people have for not building to such a standard is the extra initial cost, which is about 10% more than standard construction. But in new construction, when energy bills and mortgage payments are combined, the monthly cost of a Passive House and a conventional home are roughly the same. As Bob Brecha pointed out, "Another house may cost less, but if you are saving money every month, that can be a net win on your utility bill."

Although some people can afford to build a new house, most cannot. A huge financial burden comes with a retrofit, which can be as high as 50% of the cost of the house when it was first built. There are a variety of options for managing this cost while still reducing energy use in homes—doing a partial retrofit, staging it over time, creating a warm room, and lowering thermostats.


Deep window sill in thickened wall of a Passive House retrofit.


Blower door test to check air tightness in a passive house retrofit.

Hybrid Vehicles

Although hybrids are 10% more expensive than conventional cars, the amount of money saved from lower gasoline purchases for the lifetime of the car is more than the additional cost of the hybrid features. "The hybrid reduces the cost of transport," Pat Murphy, author of the 2008 book *Spinning Our Wheels*, maintains. Bob Brecha has proven this; his family of three drivers has one Honda Civic Hybrid and uses only about a quarter of the gas usage of an average household, saving several hundred dollars a year on gas purchases.

Our "Time is Money" Perception

Perhaps an even bigger problem than our view of money is our perception of the value of time in our fast-paced, busy culture. "Finding the time" is a huge impediment to the decision of making energy-reducing

[We need] more people asking themselves how important it is for them to make some sacrifices for our future.

changes. Making the environmentally conscious choice is often seen as an inconvenience. The hour that Bob Brecha adds on to what would normally be a half-hour drive when he bikes to work is time many would not want to spend. Nevertheless, when asked whether it was difficult to give up that time and work it around his schedule, Bob said he hates to think about it in those terms. "I like the idea of essentially wasting that time," he replied, "not thinking about it as time I've lost for something *else* I need to do. The reality is that I have a schedule that makes it hard sometimes, but it would be a good thing to not have to think about time as much."

Taking the extra time to walk or bike is not always practical and often means planning ahead. Making the commitment to the cost and time to retrofit a house, or even part of one, may be difficult for some. Even making choices in regard to food is challenging in our culture, which makes eating out or buying fast food seem far more convenient than shopping for fresh ingredients and cooking a homemade meal. The time required to reduce energy use makes caring about the environment a hassle—so it is easier to avoid. Reusing and recycling does require more of a commitment of time. We need to ask ourselves, 'How important is it?' For John and Bob, feeling good about doing something positive for Mother Earth, as opposed to doing something wasteful, is worth the time. What the world needs is more people

asking themselves how important it is for them to make some sacrifices for our future, and more people realizing that the answer is: *It is vital*.

Time: the Unlimited Resource

A friend of John's, Will Alexander, made some observations after visiting the state of Kerala, India. Alexander remarked that when people in the United States talk about efficiency, we always mean using more resources to save time, even though time is one of the few unlimited resources in the world. "We all notice it if we spend time to save resources," John pointed out. "Our natural tendency is to feel like we have 'wasted time.' We feel that it would be more efficient to just throw things out or do whatever it takes to save time." This way of thinking, which values conserving time over saving resources, is poisonous to the well being of our planet, but it is intrinsic in our culture.

When we talk of efficiency, we generally mean using more resources, especially energy, to save time.

In an article entitled, "Are You As Busy As You Think?" author Laura Vanderkam suggests, "Instead of saying 'I don't have time,' try saying, 'It's not a priority,' and see how that feels." She goes on to say, "Our language reminds us that time is a choice. If we don't like how we're spending an hour, we can choose differently."[5] By changing our language from, "I can't change my lifestyle because I don't have time," to "I won't change my lifestyle because it's not a priority," we realize just how weak our excuses are.

The Addiction to Luxuries

Above all, we are obsessed with comfort and convenience. "Somehow, we need to get misusing energy to bother our conscience more. We have gotten addicted to the luxuries that we have, and if we can afford to do something, most of us will rationalize continuing to do what we want to do. Once one gets used to it, certain levels of luxury are very hard to give up." John Morgan said. Avner Offer mentions addiction in his book *The Challenge of Affluence*, writing, "Addicts regret their craving, but find it difficult to stop. They are locked into a cycle of myopic choices."[6]

There are addictions to alcohol, to drugs, and to gambling, but the most pressing addiction of modern times is the addiction to luxury and consumption. As long as this addiction runs rampant, there can be little progress on the climate change front. All that can be done is encourage people to live a life of sufficiency and model a life dedicated to reducing energy use and CO_2 output. If enough people see their friends and family making the choice to reduce fossil fuel use, then frugal energy use will no longer be viewed as "strange." The real triumph will be achieved when living an energy sustainable lifestyle is no longer a stigma and more people are willing to change their habits. "That's when you've made an impact," Bob Brecha asserted, "when it becomes normal."

The Future

The underlying problems that are slowing the progress of reducing energy use and thus greenhouse gas emissions will not be eliminated easily or quickly. There are steps each of us can take to create more healthy attitudes about efficiency and affect the perceptions our culture has toward time, money, and luxury. John Morgan believes one solution may be to find a way to incentivize energy awareness for those who need more than just a sense of moral righteousness to make sound environmental choices. "We're never going to solve this problem until we tax carbon," John insists. "That will give everyone the incentive to be creative and efficient."

. . . the most pressing addiction of our time is the addiction to luxury.

"What catches our attention is money. The only way we are going to get more people's attention is to make it pinch people in the pocket book, and that means a pretty steep carbon tax," John maintains. "It's never going to pinch the very rich, and that's a problem with having extremes of wealth and poverty. If the incentive is built into the whole carbon structure, then it will incentivize many more to figure out ways to innovate, practice efficiency and conserve energy." Due to the vast disparities in wealth present in society, the carbon tax would need to be applied across the board and its proceeds used to help the poor who will be hurt the most. James Hansen has developed this idea with his "Tax and Dividend."[7]

Another solution that can be practiced on an individual basis is teaching our children to care about the world. Children are products of their environment. If their environment is unhealthy and nobody is making an effort to change, children will grow up to believe there is no way to fix the world and no reason to try. In *The Small Community*, John's grandfather Arthur Morgan wrote, "Great men may make history, but the kind of history they make is

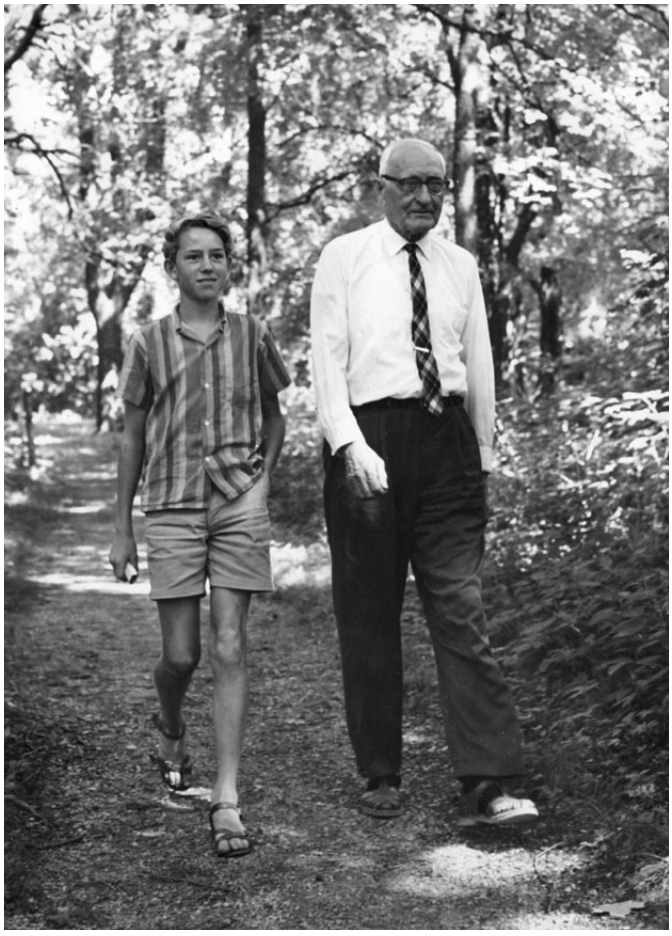
determined chiefly by their childhood environment."[8] Parents should ingrain in their children the value and importance of being a caregiver, as well as an inhabitant, of Earth.

Our choices do matter. Every action can have a positive impact or a negative impact. "A single choice is trivial," Avner Offer wrote, "but when repeated persistently, can make the difference between failure and success. Multiplied many times, it can form patterns of diligence or decadence at the aggregate level of society."[9] Arthur Morgan agreed with that sentiment, writing, "There are few more alluring myths in all history than that social wrongs can be set right in one mighty effort directed by great organizing genius at the top."[10] Instead, an effort must be made by each individual, whether that effort is as large as building a Passive House or as small as taking shorter showers and installing florescent light bulbs.

In the past we made broad reaching societal change when something big happened that bound us together in a common cause. During World War II, we were united in the effort to win the war. We planted victory gardens, recycled every ounce of steel and aluminum foil, and conserved in a variety of other ways. If we had that sense of urgency today, we could make some progress toward climate mitigation.

John Morgan fears that such a worldwide change is unlikely to happen soon enough to divert climate disaster. "Every time in the past that people have destroyed their natural resources, it's been on a limited scale. This is the first time in human history that we're facing destroying our climate and our resources on a global scale. It's an open question whether we will eventually become willing to break our addiction to the luxuries we get from fossil fuels."

Although prospects look grim, there *are* people in the world like Bob Brecha and John Morgan who are dedicated to slowing down climate change. But they are as yet a minority. Unless the entire world joins together to reduce our energy use, our world will most likely move well past sustainable levels of CO_2 in the atmosphere. If people follow such examples, positive change can be achieved. Scaring people into conserving is not the ideal way, but neither is sitting by indifferently as the world is destroyed. We need collectively to change our attitudes, or we will fail our posterity, our earth, and ourselves before we even realize it is too late.



John Morgan and his grandfather, Arthur Morgan, in Glen Helen, a 1000 acre nature preserve near Yellow Springs, Ohio, June 1962

Notes

1. Murphy, Pat. *Plan C: Community Survival Strategies for Peak Oil and Climate Change* (New Society Publishers, 2008), 195.

2. Murphy, 196.

3. "The Passive House – Sustainable, Affordable, Comfortable, Versatile." *International Passive House Association*, <http://www.passivehouse-international.org/index.php?page_id=79>.

4. Engelman, Robert, *Sustainability of the World 2013: Is Sustainability Still Possible?* (Island Press: 2013).

5. Vanderkam, Laura, "Are You As Busy As You Think?," *The Wall Street Journal*, February 22, 2012 (http://online.wsj.com/article/SB10001424052970203358704577237603853394654.html).

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7. Hansen, James, Tax and Dvidend, http://www.columbia.edu/~jeh1/2009/WaysAndMeans_20090225.pdf.

8. Morgan, Arthur E., The Small Community (New York: Harper & Brothers Publishers, 1942), 5.

9. Offer, 6.

10. Morgan, 10.