BY EMILY THORNTON CALVO

GREEN Expectations

Looking to Yesterday for Tomorrow's Sustainable Living

In the morning, John wakes to a gentle rain, and before he finishes his coffee he notices that it has already seeped into the ground. The bright rising sun promises to heat up, so he opens the windows even wider. Before John leaves for the day, he tosses his coffee grounds on top of yesterday's apple core and grabs a canvas bag for his stop at the market on his way home. Then he kisses his wife, hops on his bike and pedals off to work …

While John's routine might seem to reflect life in the early 19th century, it's just as likely to depict life in the future. In fact, looking to the past is one way those who are concerned about the environment are guided to better solutions. In other words, a healthier earth will rely on innovative high-tech tools combined with old-school practices.

Green Thumbs Up

Consider the corner grocer where your great-grandmother shopped for food. Everything was organic! Organic produce describes fruits and vegetables grown without the use of specific pesticides. For packaged goods, the definition is fuzzy and depends on a list of ingredients that define varied levels of organic.

Today, people like John are again buying organically grown local foods much like they did at the turn of the century. Locally grown food minimizes the need for additives, such as preservatives, as well as high-transportation costs.

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In addition, John avoids the hormones in commercial dairy products and insecticides on fruits and vegetables. With this in mind, **Jennifer Jeck '05** a proponent of eco-gardening, expects organic farming to occur on a larger scale.

The trend in growing is to rely on nature to solve problems. "Biodynamic gardening relies on compost, crop diversity, crop rotation and cover crops to maintain healthy soil," says Jeck. "Pests are also controlled by natural means. For example, gardeners love lady bugs because they are a predator to aphids—a common garden pest."

Steve Parkes, co-owner of Newleaf Natural Grocery on Chicago's north side, sells organic foods he purchases from local growers whenever he can, but during the city's frigid winters resources are limited. "The growing demand for organic foods means suppliers and distributors will need to create new business distribution models that shift their operations to accommodate the market."

For example, Growing Power, a nonprofit organization, trains individuals to farm commercially in urban areas. Their program puts people to work, cuts down on transportation costs and increases access to fresh produce.

Another model, subscription farming, or Community Supported Agriculture (CSA), provides fresh locally grown fruits and vegetables at reasonable prices. A family "subscribes" to receive a share of a farm's harvest. Growers deliver baskets of produce to designated locations where subscribers pick their food.

Move at Zero Miles Per Gallon

Rising gas prices are making yesterday's bicycle an attractive transportation alternative as well. In fact, major cities, such as Paris and Tel Aviv, host bike-sharing programs that allow individuals to borrow a bike for travel between destinations.

"People don't need cars. They need mobility," says Kathy Tholin, CEO of the Center of Urban Technology, a Chicago-based, nonprofit that promotes the development of more sustainable and livable communities. "Car-sharing programs, such as I-Go will become more common as a viable transportation alternative. And, we can expect better public transportation." In addition, high speed rail systems will make traveling by train more convenient. Advances in telecommuting and teleconferencing will become more common and lessen the need for air travel.

"Population growth gravitates to larger cities, which increases 'sprawl' and negatively affects our environment by heightening fuel consumption and waste," says Tholin. "We need smaller cities that have their own downtowns with restaurants and shopping." This trend means we can expect a resurgence in old-fashioned "foot" power.

Power Plants of Tomorrow: Soy

Currently, soy is the basis for about 90 percent of the biodiesel produced in the United States—which reduces emissions by nearly 30 percent. And, because Illinois is the nation's largest soybean producer, it's nearby so there are minimal transportation expenses for those in the area. Plus, it can be used in any vehicle that currently uses diesel fuel.

Cook-Illinois Corporation, the largest school bus contractor in the U.S., has been using soy biodiesel in its bus fleet for three years. "Soy diesel is also easier on our bus' engines," says **John Benish Jr. '98**, Cook-Illinois' chief operating officer. "The fuel costs more, but tax incentives have equalized the expense." This commitment to cleaner operations gained Benish the 2007 Graham School of Management Distinguished Alumni Award. Advances in production and new avenues into the supply chain are sure to make this new fuel more common in the future.

Soy is also replacing traditional fertilizers for lawns and gardens as a more natural alternative. Bob Scott, a sales representative for Bradfield Organics, sells soy fertilizers. This is the same food that is fed to livestock that produces traditional fertilizers. Since these food products haven't been filtered by the animals' digestive systems, they are more nutrient-rich than other fertilizers. Furthermore, their fresher scent means property owners can avoid that "just-fertilized" odor that lingers after a treatment.

"There's a perception that fertilizing with organic products sacrifices quality, but the reality is quite the opposite. When you get nature on your side, you've got a powerful ally."

Plugging in to New Energy Sources

Dependence on foreign oil and rising energy costs are sparking an old-world entrepreneurial spirit to explore alternative energy sources as well. Solar panels are heating water and windmills, and can already save up to 20 percent in new construction costs. Some farmers are preserving their livelihood by renting a portion of their land to wind power companies making the Midwestern landscape appear as picturesque as Holland has for generations.

John Benish Jr. '98

But real advances will leverage high-tech tools to use all our energy sources more efficiently. In fact, some electric company customers are already saving 16 percent by taking advantage of real-time pricing programs. Real-time pricing varies the cost of electricity as prices change. Likewise, future smart technologies in appliances will pick up signals when the prices rise and adjust usage to minimize costs. Your washing machine will alert you when the price drops—and you'll be able to turn it on remotely.

Other energy advancements involve sequestering carbon emissions in coal plants and storing it underground, but like nuclear power, which is the most expensive energy source, environmentalists are confronted with storage issues. Geothermal energy will use the earth's heat to control temperatures.

LEED Position in Sustainable Building

In the 19th century, when the weather warmed up, they opened a window. When it was cool, they closed them. Keeping those actions top-of-mind, rather than regulating the thermostat, can help us control greenhouse gases. However, many buildings have been designed with windows that don't open at all, which means architectural design and building practices are becoming crucial components for sustainable living.

"In Chicago's metropolitan area, two-thirds of greenhouse gases come from heating and cooling buildings," says Tholin, "while the other third comes from cars, which means that driving a hybrid is a good thing, but not the answer to greenhouse emissions." Building design is an opportunity to affect positive change on many levels—and Saint Xavier University's new 108-bed residence hall will exemplify sustainable practices by implementing LEED Silver environmental standards as set forth by the U.S. Green Building Council.

"We look for help from LEED-accredited professionals who understand how to combine green engineering with architectural innovations," says Paul Matthews, Saint Xavier's assistant vice president for facilities management.

Scheduled for completion in August 2008, the hall will have both natural and mechanical ventilation. It will use solar and wind energy for summer night pre-cooling and winter heating to improve energy efficiency. Green power from a wind farm will offset electrical energy consumption. A green roof will heighten heat efficiency and 40 solar panels will heat water. A rain garden will drain trapped water to irrigate the landscape.

Inside, tap-on faucets will turn off and on automatically, which mean less wasted water. Bio-friendly paints and finishes, which are free of formaldehyde, will improve indoor air quality.

Even the beds will minimize waste. New mattresses with pillow tops that are easily replaced allow users to preserve the structure, which reduces landfill deposits—and windows will open for more efficient cooling.

Reduce Waste—Compost!

One hundred years ago, many communities couldn't rely on waste disposal companies to haul garbage—and growth in composting means we may manage disposal of our own apple cores and used coffee grounds in the future. In fact, an estimated 56.9 percent of yard waste was saved for composting or recycled in 2000, a big increase from the 12 percent rate in 1990. This yard and food waste amount to 23 percent of the U.S. waste, so composting is a great way to help the environment every day.

The benefits are well-established. Compost repels plant diseases and pests. There's less need for chemical fertilizers. It even destroys nearly all industrial volatile

Beyond the Blue Bag

You've switched your light bulbs to low energy fluorescents. You're disposing of recycled paper goods. You're using your thermostat wisely. Take the next step:

- Take your own mug when you go to the coffee shop.
- Print double-sided. You'll save the environment and cut your paper costs.
- Purchase products for their lack of packaging. You can save 1,200 pounds of carbon dioxide if you cut down your garbage by 10 percent.
- Paper or plastic? Neither! Go shopping with your own reusable cloth bags.
- Shorten your showers to save water and heat.
- Regularly tune-up your car. A car that's tuned runs better and helps reduce air pollution.
- Recycle as much as possible. Go to earth911.org. Here you can find out where to take nearly everything to recycle.
- Support nonprofit environmental organizations with a financial donation and your time. Volunteering can be a great way for families to help the environment together and it teaches kids the value of giving. Research organizations at www.charitywatch.org and www.charitynavigator.org to learn how the organization uses donations.

organic chemicals (VOCs) in contaminated air. You're left with a rich soil additive that promotes higher yields of agricultural crops—and it's really easy to do. You can learn more at www.composting101.com.

Use Less, Dispose Smart

When our great-grandfathers found a hole in the bucket, they repaired it. Today, we tend to toss it and buy another one. Tomorrow, responsible ownership will involve a return to less consumption. It can mean buying used books, clothing and furniture rather than new.

"The more we learn about 'reduce, reuse, recycle, repair,' the more we find out that we need to just reduce our consumption," says Parkes. For example, it may be more detrimental to the environment to recycle Styrofoam than simply put it in a landfill—which calls for not using it in the first place."

While economics will continue to drive many innovations just as they have in the past, moral responsibility may also drive new earth friendly practices.

Disposing of hazardous waste—paints, pesticides, mercury, fluorescent bulbs—isn't something past generations worried about—and new solutions are in order. In addition, because the future of TVs is moving to HD, it's important to know where to dispose of your old TV, as well as other electronics, such as computers, fax machines and cell phones, which can be particularly hazardous when thrown into a landfill.

"If the electronics are in good working order, it's always best to sell or donate them to someone who can use them," says Christopher Appelt, assistant professor of biological sciences at Saint Xavier University. "If they aren't useable, take them to specialized recyclers, such as Chicago's Household Chemicals & Computer Recycling Facility, where they accept a number of hazardous materials."

While economics will continue to drive many innovations just as they have in the past, moral responsibility may also drive new earth friendly practices. In her award-winning essay completed for her senior project, Jennifer Jeck proposed a theological rationale for wiser practices. "Christianity has traditionally dismissed ecology as a social issue," says Jeck. "But we are part of creation and our survival is interdependent. Caring for the Earth—its creatures, land, water and air—is as much a part of being a Christian as caring for each other." This perspective also sounds like an idea from the past—approximately 2,000 years ago. **SXM**

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