SSAFE Newsletter

Senior Stewards Acting for the Environment

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Earth Day - April 22nd

What will *you* do on Earth Day?

Retrofit, Don't Build

Buildings are the largest CO2 emitters on Kendal campuses.

Elders in Action

Composting diverts food waste from landfills—a major source of methane.

Interested in learning more?

Visit SSAFE.org online or email us at info@ssafe.org

SSAFE newsletters can always be found at SSAFE.org/newsletter

The Harvard Center for Green Buildings and Cities (CGBC) has retrofitted its headquarters, a pre-1940s building in Cambridge, MA

Michael Grimm © Harvard Center for Green Buildings and Cities

Hope for the Future Lies in . . . Buildings?

By Stuart White, Kendal at Hanover

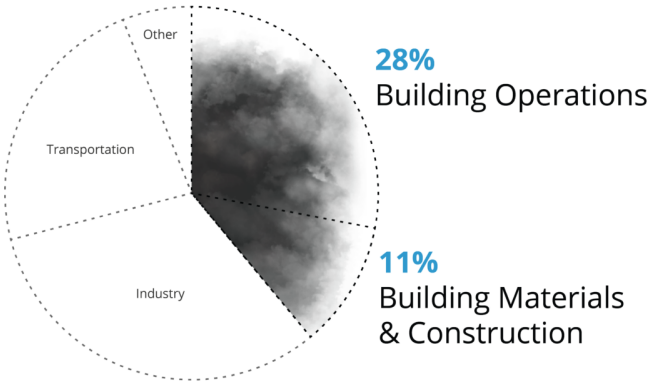
Early in my architectural career in the fall of 1973, I heard about a few houses built in the 1950s that were heated by the sun. Intrigued and excited by the possibilities, my wife and I made the admittedly naïve decision to build a "solar house" on land in Vermont. I announced our plans to co-workers, and despite their lack of enthusiasm, we were undeterred. Two days later, the world woke up to the first OPEC embargo—and a lot more. "Energy" was the new word, and I was the unlikely expert.

cont'd p.2

Hope for the Future... (cont'd)

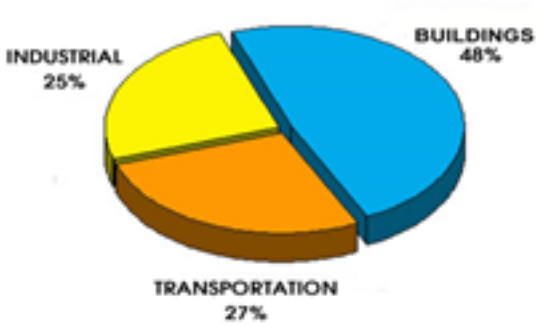
In the intervening 50 years, that dawning awareness has grown exponentially. It is now widely accepted that burning fossil fuels has led to a climate crisis. What is not widely understood is the huge role that buildings play in adding to the problem. We have all seen pie charts in which buildings seem to have a relatively minor role compared with, say, transportation, and that's because some building-related causes are spread across various sectors, such as "other," or "industry." But when all building-related emissions are truly accounted for, they are the biggest piece of the pie.

Annual Global CO2 Emissions



Data Sources: Global ABC Global Status Report 2018, EIA

US Energy Consumption by Infrastructure



Source: Architecture 2030

Building operations—essentially heating, cooling, ventilating, and electrical—are easily grasped causes of CO2 emissions. Less obvious are the mining and processing of raw building materials, transportation to the site, and construction. Concrete alone accounts for 11% of global emissions, steel 10%, much of it attributable to buildings. Emissions from operations are dependent on how a building is designed and constructed. The CO2 escaping from the burning of fossil fuels at Kendal's buildings is the largest source of emissions at most campuses and must be addressed if we are to become carbon neutral.

Schematic: the path to carbon neutral building
Source: Architecture 2030

"The greenest building is the one that is already built," said a recent president of the American Institute of Architects (AIA). This recognizes that retrofitting buildings has an enormous energy advantage over tearing down and building new. Considering that 2/3 of the existing building stock will be with us in 2050, the choice is clear: we must fix up what we have and recycle our buildings.

The first step is to examine the energy profile of our buildings: what fossil fuels are we burning and how much? How much electricity are we using?

cont'd p.3

Hope for the Future... (cont'd)

How well is our building performing? What is its "miles per gallon" equivalent? This is the time to seek professional guidance. The new discipline of building science has spawned many talented energy auditing firms that can show us the path to net zero by taking a deep dive into current operations, working closely with facilities departments. A well-designed audit will identify opportunities to significantly shrink energy usage and then guide us to available options for renewables to deal with the remaining energy component. It will show us how to replace fossil fuels with renewably supplied electricity, eliminating on-site combustion. Lastly, it will prepare estimates of cost and return on investment. The product of this first step, a road map to net zero, will provide the basis for seeking necessary approvals to proceed further.

> "The greenest building is the one that is already built."

Amory Lovins, the grand guru of the green movement, is the pre-eminent champion of energy efficiency. Nearly 50 years ago he coined the term "negawatt," still the best description of energy saved, not used.

"What can I do to join the negawatt revolution and save energy," you might ask?

- Go to SSAFE.org; watch the YouTube presentation on buildings; read the building-related articles.
- Reach out to SSAFE Greening Team leaders and ask to be put on their email list.
- Attend SSAFE Greening our Campuses meetings, every 3rd Thursday at 11:00 a.m. on Zoom.
- Advocate at your campus for a 3rd party building audit.
- Make sure to participate in a community-wide "charrette," facilitated by the audit team, to provide your local knowledge, invaluable building-related input to investigators.

As I look back at that first solar project, I'm reminded of humankind's first attempts at flight. There's a lot we got wrong, but the big thing we got right was to do it. It was motivating to realize that architects were uniquely positioned to make a difference, that new ways of living were possible working with natural energy systems. My career was refocused in a new direction.

Today the architectural profession is fully awake to the climate crisis. This year its most prestigious award was given to a French firm which promotes the concept of "build nothing," limiting their practice to retrofits. We are committed to taking actions that will avoid the worst outcomes predicted by science and allow a more viable future for all life.

Kendal Elders in Action

OUT OF THE LANDFILL, INTO THE GARDEN

By Nancy Miles, Kendal at Hanover

Wasted food is the single largest category of material deposited in landfills. Estimated to be 20% of total landfill waste, food waste accounts for a larger amount than either plastic or paper. Once in the landfill, these food items pose a particular hazard to our planet's future in that the slow decomposition of this organic matter produces large amounts of nitrous oxide and methane, a greenhouse gas that's at least 25 times more potent than carbon dioxide in warming the atmosphere.

Landfills produce the planet's third largest amount of methane (17%), after petroleum products (30%) and large-scale animal production (27%). Thus, the more food waste that can be kept out of landfills, the better, to curb the effects of global warming.

Prior to 2009, Kendal at Hanover's kitchen food wastes were included with other trash and taken to a landfill for disposal. However, the administration wanted a more environmentally sustainable method to dispose of its food waste.

The food-service kitchen designer (Ricca Newmark) that Kendal was working with as part of a larger renovation project suggested the pulping system to dispose of food wastes.

After viewing the system at Dartmouth College, Kendal decided to install a similar system here in 2009. The system was purchased from SOMAT—see https://somatcompany.com for more information.

Since 2009, Kendal at Hanover has diverted almost all of its kitchen food waste —an estimated 90%—from the trash stream using a system that pulverizes the food waste and extracts much of the moisture, thereby greatly reducing the volume.

Here's how it works. Kitchen staff scrape food prep waste, as well as extra food from the buffet line that cannot be used, into the pulping system. The staff also scrape uneaten food and leftovers from the buffet line into a metal trough. The trough can be flushed with water as needed to carry all the wastes to the large pulper, which chops the food into tiny pieces.

Compostable waste enters the pulping tank via a trough where it mixes with water and is ground into a slurry.

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OUT OF THE LANDFILL, INTO THE GARDEN (cont'd)

The pulped food/water mix flows through a pipe to a Hydra-Extractor. This machine removes most of the water and leaves a fairly dry mix, which goes through a chute directly into lidded, wheeled 35-gallon bins by the loading dock.

Slurry is fed to the Somat pulper where de-watered and semi-dry pulp is fed into a haul-away container.

A compost farmer picks up 3 to 4 bins of the pulped kitchen waste each week. Back at his farm, he has the heavy equipment to unload, aerate, turn, mix in the needed "brown" materials, and sift the final product. He processes the food waste into a marketable compost that he sells to farmers and gardeners to enrich their soil, thus reducing the need for fertilizers and herbicides—another environmental benefit.

Through this partnership program, about 40,000 lbs. (20 tons) of food waste per year is successfully composted. In the 12 years since its installation, this system has kept roughly 240 tons of methane-producing food waste out of the landfill—an impressive amount.

The total costs of the system are difficult to determine since the installation was part of a larger renovation project. The initial investment in equipment can be hefty, and there are ongoing costs to maintain the pulping system. The farmer's fee to collect the bins is about $2,000/year, but that has to be balanced against a savings of about $3,300/year due to reduced hauling/ disposal costs.

Given the high initial costs of the system plus the ongoing maintenance costs, the payback time for this system is a very long one. However, the environmental benefit is enormous! Kendal at Hanover has come down on the right side of that equation and made a significant contribution to the earth.

Kendal Composting Projects

Kendal at Hanover recently added 3 35-gallon composting bins just for residents. The same farmer who services their kitchen bins also picks up weekly for residents. The additional charge is currently paid by the Residents' Council.

Kendal at Oberlin composts salad bar prep and leftovers from plates in the kitchen. A commercial composting service picks up and replaces their 12 90-gallon bins weekly. Residents are free to dump their own composting in the bins as well. Composting comes out of the Facility Services budget.

The Admiral at the Lake offers resident composting using an innovative organization, Urban Canopy, committed to a more sustainable food system, from production to distribution to waste. Three 35-gallon bins in a resident garage area are funded by the Residents' Council.

Kendal at Longwood has started a composting pilot project. A resident purchased 2 easy-to-use, compost tumblers (one 43-gallon, one 83-gallon), which are now available for use by 2 "neighborhoods" (about 50 people), with plans to add a third. The Residents' Association paid for the tumblers. There is a sign-up sheet for residents and instructions on the bin, and finished compost is distributed accordingly. Interest is growing!

Kendal at Collington is fortunate to have a Master Composter among its residents! He has assembled 4 bins at their Hilltop Gardens, with a capacity of about 640 gallons, and oversees the entire composting process. There are also 3 5-gallon buckets in the recycling rooms of the resident apartments, which staff take to the Hilltop Gardens. (NOTE: Program on hold until April 1st.)

Photo source: Adobe Stock Photos.

Kendal at Ithaca currently composts both resident and kitchen food waste, including meat and seafood, through a local company that produces composted soil for sale. And what luck--it's free! In addition, the managers of Facilities and Grounds are meeting with a Master Composter from Cornell Cooperative Extension to learn how to prepare yard waste for compost and how to manage the compost pile. Since the pile will probably be located near the community garden and used by residents, the Master Composter was invited to speak as part of their speaker series. The Facilities and Grounds departments will be funding the yard waste composting project.

Are you composting at your campus? Are there commercial composting services available in your area? What ideas do you have to get a composting program started? Send them to info@SSAFE.org.

WHY BEES IN THE CITY MATTER

By Al Renslow, The Admiral at the Lake

It all began with the Garden Club. Our very active resident garden group helps maintain 7 different garden areas at our building—4 roof gardens and 3 ground level gardens. Most units have balconies where many residents grow herbs, flowers, and some vegetables. It was not surprising, then, that the Garden Club saw and enthusiastically embraced the need to bolster pollination by supporting honey bee colonies, which have declined precipitously in the last 20 years.

Apis mellifera is the honey bee species thriving on The Admiral rooftop. Photo source: Adobe Stock Photos.

According to a USDA survey, the total number of managed honey bee colonies has declined by almost half since 1940. Many factors have contributed to this long-term slide, chief among them a sharp drop in the number of small farms. Where farm wives had formerly sold honey and honey products, many now turned to off-farm jobs.

But climate change has also contributed to the decline. Habitat loss due to drought and floods has left honey bees without the ecosystems needed to sustain them. Greater temperature extremes are also taking a toll. Warming temperatures are causing plants to bloom earlier—an average of a half-day earlier each year. This can disrupt the normal timing of pollination, resulting in plants that remain unpollinated and honey bees that are unable to feed. Nutritionally deficient honey bees then become more vulnerable to disease and infestation, such as by Varroa mites. But extreme cold is also a threat, and in the Midwest where The Admiral is located, 2020 was especially brutal, with nearly 60% of hives not surviving the winter.

The consequent stress on colonies leads to increased susceptibility to such threats to honey bee health as parasites and pests, pathogens, poor nutrition, and pesticides. All these tend to overlap and interact with one another against the backdrop of a changing climate.

Can anything be done? We desperately need these pollinators. Honey bees are critical to food production. About 1 mouthful in 3 in our diet directly or indirectly benefits from honey bee pollination. At least $15 billion in agricultural productivity is due to pollination by managed honey bee colonies.

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WHY BEES IN THE CITY MATTER (cont'd)

The Garden Club residents decided "yes," something can be done. We wanted to try to expand the bee population in our urban area, but we needed to see if honey bees could survive at our location near Lake Michigan. We recognized that the presence of these vital pollinators was essential if our porch and window planters and our gardens were to flourish. After much research, we contracted with The Best Bees Company (https://bestbees.com), a nonprofit organization headquartered in Boston. They deliver the honey bees, install and maintain the hives, help harvest the honey (which we get to keep), and perform research that will hopefully help save the bees.

We learned a lot from this collaboration—not only about honey bees and plants but also about honey. We discovered that urban honey was better than processed retail honey in taste and quality. The many different nectar and pollen sources in the city account for a more favorable product than commercial honey, often labeled orange blossom, clover, etc., derived from mono-crop agriculture.

The Admiral did not harvest most of the honey the first year, saving it for the colony. However, we did get 26 4-oz bottles, which the Garden Club sold at their plant sale—immediately! This spring and early summer we hope to truly harvest honey from our hive.

So far, our honey bees are doing well, and our plants are doing well. Even if it is only to a minimal degree right now, the honey bees have helped the gardens in Lincoln Park, the Lakefront, and The Admiral to flourish. The Garden Club can be proud of that!

Honey bees from the rooftop hive at The Admiral on The Lake.

Checking the rooftop hive for honey production.

For more information, contact Al Renslow at alkaren@mac.com.

OBERLIN LIGHTS THE WAY WITH LEDs AND SOLAR

By Ted Wolner, Kendal at Oberlin

A few years ago, Kendal at Oberlin (KaO) chose to move more quickly to reach carbon neutrality and cut emissions dramatically. Our simple, practical plan: replace the 90 aging sodium lights on the perimeter drive and walkway with 75 energy-efficient LED light poles and lighting posts by 2023. To provide renewable power, KaO in August mounted 60 solar panels on a new garage and carport, each with 2 EV charging stations. These panels will generate enough electricity to light both buildings, power the charging stations, and illuminate all 75 light poles and posts. Since the system is connected to the city grid, any surplus supports the town.

Solar panels on carports at KaO.

Not only is the electricity clean, but the poles themselves produce more even light over a larger area with less glare, all of which benefits older eyes. And as the poles automatically adjust to varying night conditions (clear vs. cloudy skies), they reduce costs further. The engineers calculate that the project will save almost 700,000 kWh of electricity and more than a million pounds of CO2 over a 25-year period. Finally, the new lights will greatly reduce light pollution (a serious environmental problem), significantly improve star-gazing, better the habitat for animals and plants that thrive at night, and promote a safer campus. These benefits are due to using technical specifications from the International Dark-Sky Association for poles and posts.

Given the Kendal system's typically strapped facilities budgets, how could KaO afford such dramatic improvements? They did it by steering a sum of $300,000 over several years into the capital budget, and through grants to cover rising inflation. An application to Oberlin College's "Green Edge Fund" yielded $7,500 to support a pilot project. Another application garnered $43,000 from Oberlin Municipal Power and Light to pay for the first 25 LED poles.

Conceptual graphic of LED light poles at KaO.

cont'd p.10

OBERLIN LIGHTS THE WAY WITH LEDs AND SOLAR (cont'd)

An added benefit of this program is the opportunity to inform and engage the broader community. The relationships that residents and staff at KaO have with churches, businesses, and civic organizations make this project an ideal educational vehicle. It will become one of the features on the city's Environmental Dashboard, viewable on any computer or smartphone. KaO can also connect with high school and college students via existing courses to help evaluate the project and further demonstrate the project's health, environmental, and energy-savings benefits. Finally, KaO intends to make presentations to community groups about how the lighting and other campus environmental projects reduce carbon emissions and save money. For multiple parties, on multiple levels, this project is a win (LEDs)—win (solar)—win (Dark-Sky)—win (community engagement)!

Kendal Corporation Strengthens its Climate Commitment

"In alignment with our Quaker-inspired values, we believe human beings are stewards of the earth and should protect and preserve it for future generations. As environmental threats to the planet become more visible and increase in depth and breadth, the pursuit of sustainable initiatives has evolved into a moral and imperative action for the organization. Kendal's commitment to combating climate change recognizes the collective effort of many individuals and organizations. When we all take small steps to change the here and the now, we can ultimately design a better world for our children and grandchildren."

EARTH DAY - April 22nd

Earth Day is the best day...
...to talk about climate issues
...to start a conversation about SSAFE
...to invite people to join SSAFE

What are your plans for Earth Day?

SSAFE Needs *YOU!*

"Many hands make light work"

We need your wisdom and skills!

Advocacy: Represent your Kendal at monthly meetings; follow up on action alerts; write letters; make calls.

Education: Review a book or film; write a SSAFE newsletter article; reach out to speakers and more!

Behind the Scenes: Update membership records; generate reports; edit the SSAFE website; liaise with other CCRCs.

Tell us your skills, passion, and time allowance. We will customize a volunteer package for YOU! Email info@ssafe.org.

Puzzle for the Planet

HOW MUCH DO YOU KNOW ABOUT EARTH DAY?

1) The first Earth Day was held in what year? _____

2) Senator Gaylord Nelson of California founded the first Earth Day after an oil spill. True or False?

3) Which of the following happened at the first Earth Day?

a. A national teach-in on environmental issues took place
b. President Carter asked the nation to turn down their thermostats
c. The first Environmental Handbook was published
d. NASA sent astronauts to various events to speak

4) Which of the following resulted from the founding of Earth Day?

a. Clean Air Act
b. Clean Water Act
c. Endangered Species Act
d. a and b
e. All of the above

5) Which of the following is false?

a. Earth Day went global in 1990
b. 190 countries now celebrate Earth Day
c. Earth Day always falls on the 4th Saturday of April
d. About 1 billion people celebrate Earth Day each year
e. Earth Day is celebrated with concerts, rallies, acts of service, outdoor activities

6) The theme of Earth Day 2022 is "Save our Planet." True or False?

For more information on Earth Day, go to https://www.earthday.org/

Answers: 1) 1970; 2) True; 3) a; 4) e; 5) c, it always falls on April 22nd; 6) False, it's "Invest in our Planet."

How did you do?

5-6 correct: Congratulations, you must be a SSAFE climate advocate!
3-4 correct: Well done. Hear more at SSAFE General Meetings, first Thursdays at 11:00 am EST.
1-2 correct: Good try. Go to SSAFE.org and sign up to be a SSAFE member.

Wrapping Up

Share this Newsletter

Word of mouth: Say "Go to SSAFE.org/newsletter to get a copy!"

Email: Forward the SSAFE Newsletter email announcement or SSAFE.org/newsletter to your friends and family!

Print: You can print your own copy. Go to SSAFE.org/newsletter and look for the print icon.

Order Online: Go to SSAFE.org/newsletter and click the order link to purchase printed newsletters from 9 Cent Color Copies.

Bulletin Board: Print a copy and place it on or near your community bulletin board.

Library: Put a copy in a 3-ring binder and give it to your librarian.

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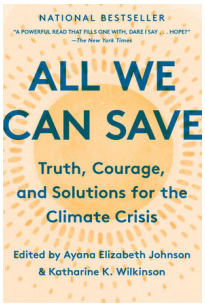
And it's easy. Just send a check—made out to SSAFE—to the Treasurer:

Scot Drysdale
32 Penn Road, Apt. 419
Hanover, NH 03755

SSAFE uses these funds to support efforts such as guiding senior living campuses to net-zero emissions, climate advocacy, and climate education. Senior Stewards Acting for the Environment (SSAFE) is a 501(c)(3) nonprofit corporation. EIN: 87-1229514.

SSAFE Book Club



All Kendal residents are invited to meet on the last Wednesday of each month on Zoom to discuss the quarterly book selection.

The discussion of our next book, *All We Can Save*, begins on April 27th at 12 noon (ET).

Learn more at SSAFE.org/book-club

Not a Kendal resident? Start your own club, see our book suggestions on SSAFE.org.

SSAFE Newsletter

This newsletter is a publication of SSAFE, a non-profit organization comprised of residents from Kendal senior living communities. SSAFE has no official affiliation with the Kendal Corporation.

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Submissions & Comments

We want your feedback! We're always looking for good stories to provide inspiration to other senior living community residents. Send us your articles, ideas, questions or comments!

We'd love to hear from you —drop us an email at info@SSAFE.org