

From: Mark Clevey <mclevey123@gmail.com>
Sent: Thursday, December 01, 2022 9:52 AM
To: Taylor, Christopher (Mayor) <CTaylor@a2gov.org>; Stults, Missy <MStults@a2gov.org>; Planning <Planning@a2gov.org>
Cc: Roth, Julie <JRoth@a2gov.org>
Subject: Front Yard Solar

Dear Mayor Taylor, Shannan Gibe-Randall, Dr. Missy Stultz and, Julie Roth:

Please note my strong endorsement of Planning Commission changes to allow solar installations in front yards. As you may recall, I brought this issue before the Planning Commission years ago when the ordinance against such installations was first enacted. At the time, a Pattengill neighbor (John Godfrey) protested against a neighbor's plans for a front yard solar installation and, in response, the Planning Commission passed an *anti-front yard solar* ordinance. As the Vice Chair of the Energy Commission and a member of Pattengill Neighborhood, I strongly objected and recommended that the Planning Commission enact a pro-solar ordinance with aesthetic and environmental conditions for front-yard installations. Unfortunately, the commission adopted an anti front yard solar ordinance instead.

Fast forward, the Pattengill Neighborhood Association has now embarked on a Solarize Pattengill initiative with Julie Roth, Solarize Ann Arbor.

I believe that solar can be *aesthetically and environmentally integrated* into urban settings (see attachment). Moreover, research shows that energy efficient and solar homes have greater real estate valuations. Lastly, solar installations resonate with A2Zero goals and plans. *Accordingly, I again strongly recommend that the Planning Commission rescind its current anti-front yard solar ordinance and replace it with a new ordinance for front-yard solar installations that includes aesthetic and environmental guidance* (see attached).

Thank you,

Mark Clevey
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Mark H. Clevey (he/him/his), MPA (Retired)

- [Veteran, US Air Force \(1967-1972\)](#)
- [Lifetime Member and Vice President, Great Lakes Renewable Energy Asso.;](#)
- [Former Chair & Vice Chairperson, Ann Arbor Energy Commission;](#)
- [Former Vice Chairperson, Washtenaw County Environmental Council;](#)
- [Co-Founder, Michigan Interfaith Power and Light, LLC; and,](#)
- [Recipient, Ann Arbor, A2Zero Lifetime Achievement Award \(2021\).](#)

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It's not about the last play. It's about the next!

Mark H. Clevey

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December 1 2022

Fundamentals of Environmental Aesthetics' and Solar Energy

As Ken Butti and John Perlin's excellent book, *A Golden Thread: 2500 Years of Solar Architecture and Technology*, illustrates that solar design and architecture, and related building integration, have roots dating back to Roman Times, the American Southwest and before. With advancements in materials and manufacturing technology the economics of lead-free, low-embedded carbon solar energy has improved to a point of cost-effectiveness with traditional fossil fuels.

Communities seeking to become more climate-action friendly, however, face new barriers about how best to integrate solar technologies into their neighborhoods, common spaces and buildings and green spaces. Within this context, the following are suggestions for how to both *aesthetically and environmentally blend* solar systems into a community.

Historical Buildings and Solar Energy - With documented applications dating back to the Roman Empire and before¹ solar energy is a *historically valid and* proven technology that harnesses energy from the sun's light to create localized energy to produce work (i.e., heating, cooling and electricity). Solar energy has long been integrated into American's buildings. 18th Century Elizabethan homes and structures regularly included solariums and greenhouses. Solar Hot Water – Wood Stove Hybrids were used extensively in cities to heat domestic hot water. In modern times, it is *solar photovoltaics (PV)* that has the greatest potential as a viable, environmentally friendly, unlimited, and economically sound source of energy for the world. Indeed, as Thomas Edison famously noted, "*I'd put my money on the sun and solar power*"

Building Integrated Solar Design - Building-integrated solar design integrates solar PV panels with traditional building materials and designs so that the array becomes part of the existing or new structure. Good solar PV planners/designers work hard to improve the aesthetic appeal of a building by integrating solar panels into the existing shape, fenestration, and slope sections of the roof (particularly south facing). Solar can also be used as window awnings to provide summer shading and reduce cooling cost and glare. Because solar panels lower the operating costs of a building and can further protect the structure from weather and solar irradiation, they can also increase the value and longevity of the property. Finally, solar can be added to carports to blend with electric car charging stations.

Ecological Blending - As a direct-from-nature (and point-of-origin) power source, solar panels blend well with the environment and with habitat-friendly designs such as trees, gardens, fountains, ponds and birdfeeders. Finally, solar panels can blend well with environment and habitat-friendly construction, such as artwork, vegetation including shade trees, butterfly gardens and storm water management areas. It is important, however, that such landscaping use native plants. Toward that end, Darrel Morrison, the elder statesman of the ecological landscaping movement, offers the following Four Principles of Design for a changing world:

¹ See: Ken Butti and John Perlin, *A Golden Thread: 2500 Years of Solar Architecture and Technology* (Palo Alto California: Cheshire Books) 1980.

First, it must be ecologically or environmentally sound, meaning that it has a level of natural diversity that will provide resilience against climate change. The species in the landscape must be adapted to the site and region, and hence not require a lot of support like watering or applying poisons to the earth. It also means we don't introduce nonnative invasives that will diminish diversity.

Second, a landscape must also be experientially rich, beyond the visual dimension. That means considering the nonvisual aspects: the feel of the wind, the aroma of prairie dropseed grass that permeates the air. And the other forms of life, too: the bees and butterflies that move through it.

Third, a design must, likewise, be of the place — averting the fate conjured in a favorite quote. When you have standardized landscapes with the same plants, all irrigated and on artificial support, “there is no there there” (borrowing from Gertrude Stein). A native landscape gives you a clue of where you are. You should know if you are in Des Moines or Connecticut.

Last, a landscape must be dynamic, changing over time. We spend all kinds of effort to keep our landscapes looking the same, mowed and clipped and unchanged. You are missing out by doing that, missing out on the change from one growing season to another, and over time.²

Solar Energy and the Urban Forest - Solar energy and trees share a common need for sunshine. While shadowing from trees can block solar access, the urban forest provides many environmental, economic and social benefits to the community, including reduced storm water runoff, improved water and air quality, moderated summer temperatures, reducing noise, lowered utility costs, improved quality of life, and a beautified city. Good solar design works in harmony and blends with urban forestry – and landscapes on the north side of all solar installations. Tree removal occurs only when there are no other viable alternatives. Good solar design includes features such as: (a) actively tilting solar panels so as to maximize their output; (b) mounting solar panels at grade versus potentially shaded roofs; (c) canopy or ground-mounting of solar panels if roofs are shaded; and (d) using open site areas (e.g., Community Solar projects) rather than removing shade trees of value.

The following are additional resources for those interested in a researching more about solar integration with the environment: (a) Ken Butti and John Perlin, *A Golden Thread: 2500 Years of Solar Architecture and Technology*; (b) National Renewable Energy Institute (NREL), *Implementing Solar PV Projects on Historic Buildings and in Historic Districts*³; (c) Mr. Darrel Morrison, *Beauty of the Wild: A Life Designing Landscapes Inspired by Nature*, published by the Library of American Landscape History, (d) Edith A. Roberts and Elsa Rehmann, *American Plants for American Gardens (1929)*; (e) Margaret Roach, *A Way to Garden*; and, (f) American Institute of Architects, Huron Valley Chapter⁴, has resources and information on blended and integrated solar design.

About Mark Clevey

- Veteran, US *Air Force* (1967-1972);
- Energy Efficient, Solar Home in Ann Arbor and Harbor Springs;
- Lifetime Member and Vice President, Great Lakes Renewable Energy Asso.;
- Former Chair & Vice Chairperson, Ann Arbor Energy Commission;
- Former Vice Chairperson, Washtenaw County Environmental Council;
- Co-Founder, Michigan Interfaith Power and Light, LLC; and,
- Recipient, Ann Arbor, A2Zero Lifetime Achievement Award (2021).

² See: <https://www.nytimes.com/2021/08/11/realestate/your-garden-may-be-pretty-but-is-it-ecologically-sound.html>

³ See: <http://www.nrel.gov/docs/fy11osti/51297.pdf>

⁴ See: <http://www.aiahv.org/>.