

Green Library

In a recent Letter-to-the-Editor (9/4/23) Barry van Gemert, a Board Trustee of Delmont Public Library, mentioned that the new home of that Library, since 2019, runs efficiently on its designed-in solar collectors. It is "green" in many other ways as well. The comprehensiveness of its green design is unique to any Library (in our area at least); yet, it is not some wild-eyed dream. Greening of architecture has been a commercial reality since well before the 1970s, and one great basic example is green windows. They address the overarching issue of human-induced climate change. While polemics go on against the reality of climate change, incontrovertible science and technical know-how put to practice and profit are, at best, ignored.

Thermally insulating glass units are well established commercially. They are because of their value as energy savers, as measured often by cost to operate a heating unit. They are made with spaced but sealed-together pieces of glass, with the separating space filled by either insulating dry air or argon gas. These both improve thermal insulation of the window, argon more so than air, and the insulating configuration is widely used for both residential homes and high-rise office buildings.

Also well-known are tinted windows and windows made with a reflective coating in either the visible or infrared regions of the electromagnetic spectrum, or both, to either attenuate summertime solar overloading within the building, and thus air conditioning load, or to further promote wintertime thermal heating efficiency. Green windows are what your home contractor buys almost always, whether you realize it or not. They are always double-pane insulating glass units, and often include the complex, not easily discerned, infrared reflective coating within the air or argon-filled space.

I can give you a familiar case that is the basis of the reflecting technology. The mirrors in the Palace of Versailles' Hall of Mirrors, of late 17th century vintage, are opaqued with a reflective mercury coating. The mirrors in your home are usually coated with silver metal. The use of silver for mirroring dates to the 19th century. The mirroring or highly reflecting effect actually occurs across the invisible infrared as well as the visible spectral range. So silver is a great starting point for greening otherwise not very reflective naked glass. It has been used extensively.

To know the chemistry, physics, and engineering of this and similar green technologies in detail, one needs to go to highly specialized professional resources such as the journal "Thin Solid Films" and the on-line Chemical Abstracts Service curated by the American Chemical Society. I won't send you to either. More importantly, to get the importance of "green" as a necessary way of life--and do not doubt that it is--besides being an already commercial fact of life, you can read about the whole subject in broader context with books such as these:

1. James Lawrence Powell's "Night Comes to the Cretaceous" (1998);
2. Elizabeth Kolbert's "The Sixth Extinction" (2014);
3. E.O. Wilson's "Half Earth: Our Planet's Fight for Life" (2016).

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These three books are excellent starters for becoming truly informed, as my corporate colleague Barry van Gemert encouraged.

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