

Sixteen Ancient Technologies Reborn

Could obsolete greentech concepts work in today's market?

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January 12, 2009

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Not everything is new in greentech. A number of companies are based around technologies and concepts coined years and even centuries ago. They failed or became obsolete for a variety of reasons: cost, better alternatives, a lack of interest, inconvenience. Some are also modernizing the underlying concept.

Will they work now? Who knows, but you've got to agree: The list is surprisingly long.

1. Mashed Earth: Native Americans in the Mississippi area, among others, built burial mounds and walls with compressed earth. The building technique pretty much went out of favor as soon as someone figured out how to apply heat to fire adobe or brick. But



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now, [Integrity Block](#) is bringing it back. The company has found a way to build construction-grade blocks out of dirt. The process consumes less energy than making them out of concrete. Added bonus: the blocks actually cost less than existing cement bricks, says Jim Petit at Navitas Capital, which has invested in the company.

2. Solar-Thermal Water Heaters: Back in the 1920s, residents of Miami, Berkeley, Los Angeles and a host of other sunbelt cities relied on solar hot water heaters. Then the gas companies came in and they went away. Conspiracy theorists like to point to this as an example of corporate evil-doing, but reality is much simpler. Gas was cheap and people liked having hot water on rainy days too. With the gas and electric infrastructure in place, solar heaters can now be used to supplement existing water heaters. It's a growing industry in China. The collectors are also more attractive than in the old days, when they'd put a tank on your roof. [Mondial Energy](#) in Toronto is one of the big proponents.

3. Solar Lighting: Solar lighting is earth's favorite light source since the Big Bang. [Sunlight Direct](#) has a system (which evolved from a Sandia project) that collects sunlight in a rooftop dish and the pipes it through a building with fiber optic cables. UC Davis has something much simpler: it is tinkering with controllers that will dim and brighten electric lights with the availability of sunlight.

4. The Opposed Piston/Opposed Cylinder Engine: [Achatas Power](#) and [EcoMotors](#) are working on car engines that contain a double-length cylinder with a piston at each end. (There are no cylinder heads in between.) A single-engine module consists of four pistons and two cylinders. The pistons and cylinders are horizontal too, so car and engine manufacturers can stack them. The

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unusual configuration results in several advantages. Mileage can be boosted by 40 percent to 50 percent, when a two-module engine is compared with a standard diesel. The engine also can be made 30 percent lighter. Because the engine modules are horizontal, cars can be more aerodynamic.

We can all be glad it didn't work the first time around. Junkers & Co. (see photo two above), which designed planes in Germany in the '30s, had an opposed cylinder/opposed piston design on some engines from 1934 through 1939. The concept never fully took off, however, because it wasn't easy to mass manufacture.

5. Swirly Water: Another greentech opportunity missed by the Third Reich. An Austrian forestry expert named Viktor Schauberg championed ideas about natural water flow in the first few decades of the 20th century. The main one was that you could purify water by swirling it through a vortex. Schauberg got the idea from watching fish, and he concocted devices called the Trout Turbine and the Vortex Generator. Hitler met with Schauberg, but his scientific handlers pooh-poohed him. Schauberg was ultimately derided as a kook. That's him and one of his diagrams.

[Watrec](#), a startup in Malmo, Sweden, has devised purifiers based around a vortex. [Parc](#) has one too. [Vortex Hydro Energy](#) in Michigan is trying something similar, but using water vortexes for energy.

6. Dung: Technically, it's never gone out of style, but dung's popularity as a fuel source tends to ebb once a nation gets past the subsistence level. [Microgy](#), a division of Environmental Power, is erecting thermophilic digesters that decompose manure and extract the methane, which then gets shipped down a pipeline (see photo three above). [BioEnergy Solutions](#) has a trial going with PG&E. Image one above displays some of the equipment – digesters, dung separators, for accomplishing the task. Call it deconstructed dung.

7. Ambient Cooling: Again, never out of style, but clearly phased out in favor of mechanical HVAC systems. Modular homebuilders are incorporating ambient whenever possible, like systems from [Michelle Kaufman Designs](#). If you want to know why some of modern eco homes seem to have a vague Asian sensibility about them, it's probably because temples and official buildings medieval China and Japan took full advantage of ambient air. Datacenter builders are also trying to take advantage of chilly outside air – Microsoft's Irish data center takes advantage of ambient air.

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1/13/09 5:56 PM

A nice article with alot of info not found elsewhere. Keep up the good fight!

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You might want to change number 7 to read ambient cooling instead of cooing...unless the subtle chatter of birds has something to do with lowering the temperature.

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