

# Green design can economize, build creature comforts

By Bob Zientara, Staff Writer  
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Contributed photo

Because of "green design," including geothermal heat, air conditioning and ventilation the Story County human services building will generate an estimated 33.5 million pounds less atmospheric and gas pollutants over the next 50 years, designers predict.

In architect Dirk Westercamp's Ames office at Woodruff Design, a huge, black-and-white photo adorns one wall.

A line of Depression-era skyscraper workers sits on an I-beam some 50 stories or so above the ground.

Pink Floyd plays on an office sound system, kept at a level that permits work and conversation. Tinted glass mutes the August sun.

This environment is an example of a larger concept Westercamp and two other guest speakers talked about during a July seminar before members of the Ames Economic Development Commission.

Representatives of the private sector, city and county government discussed about the concept of green and sustainable building design that pays for itself more quickly than in the past. According to Westercamp, there's an emerging movement in his field that can measure and quantify the process of "greening up" a building: Leadership, Energy & Environmental Design.

Promulgated by the U.S. Green Building Council ([www.usgbc.org](http://www.usgbc.org)), LEED "is a metric to measure the 'greenness' of a facility," Westercamp said.

Points are awarded in six key areas including site planning, water and energy management, materials, indoor air quality and innovation/design.

"Our construction side is bidding on an Iowa State University job that ... uses LEED ranking as a goal ... and you will see waves of them in the next two years or so in Iowa," Westercamp said.

There are 14 LEED-certified buildings in Iowa right now, and many "in process," he said.

In a way, LEED is the architectural/construction equivalent of the internationally-recognized

ISO 9001 quality standards, he said.

Climbing the LEED ladder

Builders and owners can use LEED's six major areas to apply for certification, which Westercamp said "is the first rung in the ladder.

"After that you go for silver, gold and platinum (LEED) ratings," he said. "Once you're in, USGBC has a phenomenal online database to track the points. It's a good way to measure the greenness of a building.

"My goal for the Ames Economic Development Commission was to educate people. Everyone realizes we use too much energy. To quantify ways (that energy is wasted or can be conserved) is the next step."

Prisoners in a Prius?

At the EDC quarterly meeting July 18, Westercamp joined Story County Supervisor James Strohmman and Ames Energy Services coordinator Steve Wilson. Each discussed green design and the quickening pace at which the buildings pay for themselves, on the public and private levels.

Wilson said he'd like to create a city "division of sustainability," a means to sell sustainable culture to newcomers and prospective residents, and to promote incentives for energy conservation.

Strohmman said green design is an increasingly popular topic among the 3,000 counties that belong to the National Association of Counties. At or near the top of any county's list of priorities is the cost saving to be derived from pursuing green design, he said. Geothermal heating, cooling and ventilation systems are powering county buildings, and older buildings can be converted to use geothermal, he said.

The county human services building, near Kellogg Avenue and Lincoln Way will, over 50 years, generate 33.5 million pounds less atmospheric and gas pollutants because of its geothermal system, Strohmman said.

But there are limitations to how green the county can go.

"You can't toss a prisoner into a Prius," he said. "You can't put a snowplow on one either."

Thinking large

In the private sector, as well as in government, size matters, Westercamp said.

"I don't want to belittle ... someone getting upset about a dripping faucet," he said. "But compared to reclaiming a million gallons of water from a Fortune 500 corporate campus, the choice is to take the big slice of the pie."

The wait for payback isn't necessarily that long, either.

There are LEED-rated buildings that can demonstrate 40-percent-lower energy costs than a comparable facility designed to (American Society of Heating, Refrigerating and Air Conditioning Engineers) 90.1 (standards)," Westercamp said.

Savings approach \$100,000 a year in these examples, he added.

"One facility has a published payback periods of 2.4 years on daylight control, 2.2 years on energy recovery, 2.6 years on chiller plant upgrades, etc.," he said.

Some municipal and county governments (in California, for example) have begun to mandate that new buildings adhere to LEED standards, he added.

"I'd like to see Story County say that for every point of LEED you earn, there is a certain amount of tax abatement," he said.

"LEED also rewards you for choosing brownfields, being close to public transit, encouraging alternative vehicles, using renewable materials, as well as the more obvious energy efficiencies."

Making 'better' places

LEED also addresses some "creature comfort" aspects, Westercamp said, such as attracting environmentally-conscious employees, boosting productivity, even getting out of the hospital earlier or doing better on tests.

"The neatest concrete evidence that I saw is the number of claims processed by an insurance company (in California)," he said. "They saw more claims being processed per hour when they went LEED with their building.

In a study done in a school, students scored better on a test given in a LEED building than they did on the same test at another school.

"Think of yourself reading a book, in a building with six bland surfaces, or while sitting on a park bench on a quiet day in ideal weather," Westercamp said.

The usual result, he said, is that a reader will retain more in a friendly environment.

"Humans are fragile," Westercamp said. "We like nice spaces."