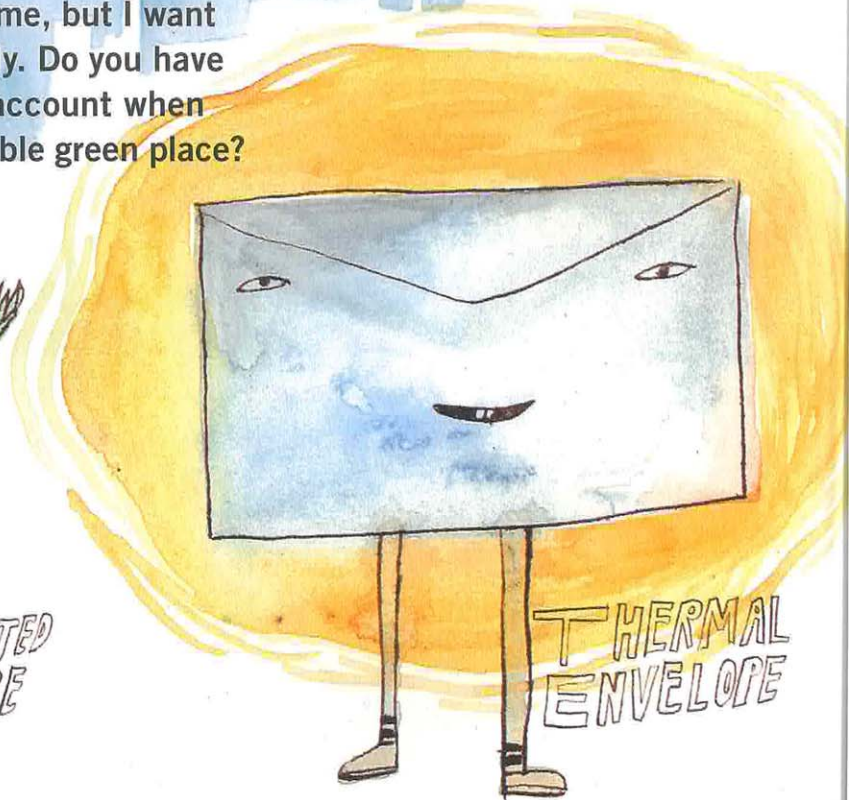


Dear Dwell,  
I'm buying an abandoned factory in downtown Detroit that I want to renovate into my new home, but I want to ensure that the space is eco-friendly. Do you have any suggestions on what to take into account when converting an industrial space to a livable green place?

—Mike Ploughy, Detroit, Michigan



**"If you renovate an existing commercial building in an urban area, close to transit, you're already there,"** says San Francisco architect David Baker. "Everything else you do is icing on the cake."

Since its founding in 1982, David Baker + Partners, Architects, has designed more than 6,000 housing units, from homeless shelters to custom houses to live/work lofts to SRO hotels. The firm's staff of 19 work in the Clocktower, a Baker-designed live/work development that gave new life to a former lithograph warehouse in San Francisco's once-scruffy South of Market district.

"We make sustainability one element in design, alongside our goals of community, urban social justice, and affordability," Baker says. The firm's website further explains: "Our work acts as an advocate for improved urban planning, where looking good only counts if it does good, too."

Baker emphasizes that "green requires a comprehensive, not a piecemeal, approach." Whether tackling renovations or new construction, he recommends using a green building checklist like those provided by

the California nonprofit Build It Green ([www.builditgreen.org](http://www.builditgreen.org)). "They're excellent for getting you to cover all the bases," he says.

With renovation as well as new construction, the strategies for environmentally responsible design are the same: cut waste, cut fossil-fuel consumption, weigh the environmental pros and cons of each product, and steer clear of materials that compromise human health. But when offering advice about greening adaptive-reuse projects, Baker keeps hitting upon two words: "It depends"—on scale, location, the building's condition, and a dozen other variables. With those caveats in mind, here are his top-ten strategies for green adaptive reuse.

**1 Save as much as possible of the existing building.** "It's easier to save more if you're comfortable with a collage of old and new," Baker says. Exposed ducts and trusses, concrete floors, and steel staircases "are common now but were radical when we first started." He recalls Realtors balking at the raw feel of some of his early projects. ("When's the ceiling going in?" one asked.)

**2 Work with the existing structural system.** "It's usually more efficient and it saves money to work with what's there instead of imposing a new structural system on the existing building," Baker notes. But, he also cautions, "It's much more complex to renovate than to build new, and in some cases a structure is not worth saving."

**3 Improve the thermal envelope.** Look for opportunities to insulate the roof and perimeter walls and upgrade to energy-efficient windows. But "sometimes you don't want to take the old windows out because you like them. In some of our projects we've added new windows inside the old ones."

**4 Introduce natural lighting and ventilation.** Older buildings that were designed to house things rather than people may lack features we expect from conventional homes, like daylight and fresh air. "Sometimes the windows don't open. You need operable windows for ventilation. In large buildings, we'll often put in a courtyard for natural light and ventilation."





**5** Deconstruct rather than demolish. "You can do deconstruction yourself, but it's a major operation," Baker cautions. "Many demolition companies are very into deconstruction and for a relatively low cost will take apart and recycle a building. It takes longer than demolition, but it's really amazing how much can be recycled."

**6** Use salvaged and recycled-content materials. Using salvaged materials such as lumber, flooring, and doors needn't always entail reusing what was in your own building. "There may be more appropriate salvaged materials available at local salvage yards." Also consider recycled-content materials, like high-volume fly-ash concrete and recycled glass tiles.

**7** Choose new materials with sustainable attributes. With adaptive reuse, the considerations are "the same as in new construction or conventional residential renovation," Baker says. Choose durable materials, wood certified by the Forest Stewardship Council (FSC), and products like bamboo

and linoleum that are made from rapidly renewable or abundant resources.

**8** Look before you leap. Beware of toxic legacies such as asbestos in floor tiles and lead-based paint. Such hazards can be expensive to deal with, especially if they're dispersed throughout a large building, so evaluate potential problems before buying the building.

**9** Don't introduce new pollutants. Help protect indoor air quality by specifying interior finishes with zero or very low levels of volatile organic compounds (VOCs) and urea formaldehyde.

**10** Use the roof. Many commercial buildings have unshaded, low-slope roofs ideal for photovoltaic systems, solar hot water collectors, and green, or vegetated, roofs. "Typically we can do some solar," he says. "There's tremendous interest in green roofs, and the visibility aspect is great" for raising awareness about environmental problems and solutions. ■