

# Recycling History

Adapting older campus buildings for academic and student housing needs makes environmental and economic sense.

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**C**OLLEGES AND UNIVERSITIES nationwide are scrambling for building space and for capital dollars. Many desperately need room to grow but have shelved plans for constructing new facilities, due to shrinking endowments or grant monies. As a result, two significant trends are converging to ease the strain: One is conversion of use — taking advantage of existing structures for unintended occupancies — and the other is the renovation of older, often historic campus facilities.

The movements are leading to an unintended and highly beneficial effect: boosting the sustainability of the college campuses where they take place.

## Utilize Idle Space

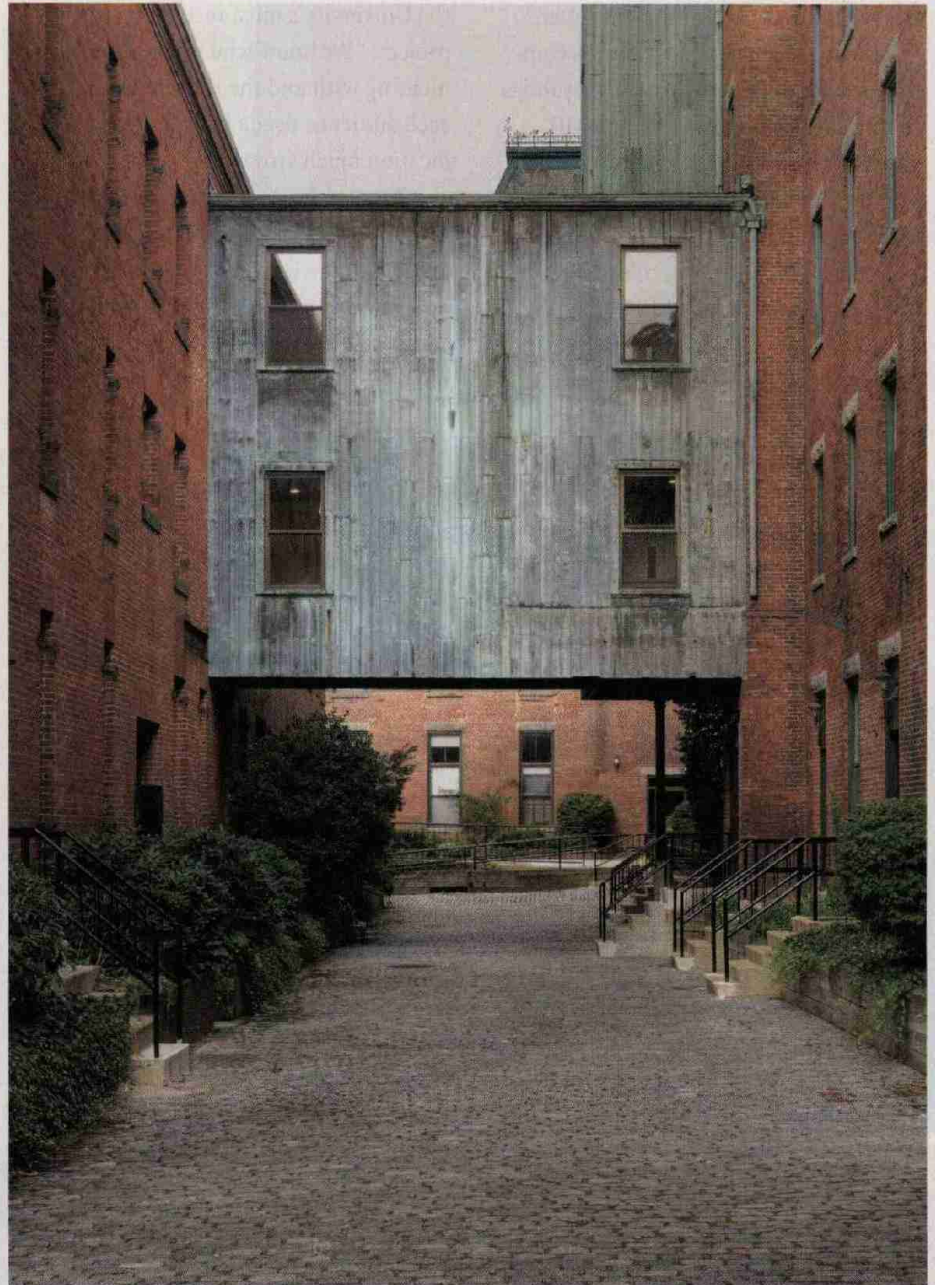
First, conversions tend to utilize space more efficiently. Academic offices sit empty an estimated 70 percent of the time, according to workplace consulting firm DEGW, encouraging a number of schools to reduce the number of faculty offices or create flexible

office-sharing arrangements. These thoughtful office concepts not only open up space for academic or housing needs, but they also help address objections from



affected professors. Moreover, office conversions enhance campus sustainability plans: Opting for renovating existing

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**NEW FACES FOR OLD SPACES.** As an example of what might be accomplished on a college campus, the transformation of historic mill buildings throughout New England has included the 14-acre Baker Chocolate Factory in Dorchester, MA (seen here and on pgs. 46-47), listed on the National Register of Historic Places and the first chocolate factory in America. In phases and over the course of 25 years, the eight mill buildings have been preserved, restored, and transformed into residences and artist work/live lofts.

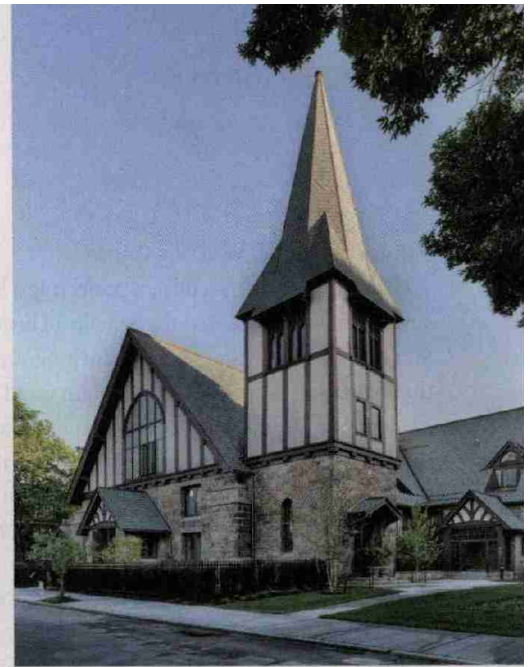
buildings in lieu of constructing new buildings reduce an institution's carbon footprint; further new program uses tend to utilize square footage more efficiently. Plus, the projects obviate considerable amounts of construction energy and resources.

This cost savings is also a primary benefit of the second trend: Restoring and renovating older campus architecture. Adapting historic structures as classrooms or housing is cost-effective and green, says Michigan State University Extension land-policy educator Dr. Mary Ann Heidemann. As is often stated, "The greenest building is the one that has already been built."

In fact, environmentally conscious campus leaders are recognizing the attractive triple bottom line in their oldest buildings: Preserving sizeable embodied energy in the existing structures, reaping

gains from recurring embodied energy savings that grow dramatically for buildings over 50 years old, and eliminating the use of many energy-intensive new materials — aluminum, plastics, and steel, for example. Traditional building materials, such as brick, plaster, and concrete, have among the lowest levels of embodied energy, according to Donovan Rypkema, principal of PlaceEconomics.

Throwing away old buildings also has its share of associated costs. Construction debris constitutes approximately one-third of our waste stream, says the Environmental Protection Agency (EPA), estimating that 27 percent of U.S. buildings will be replaced between 2000 and 2030 — a significant strain on the environment. Add to this the demolition and carting costs, which are considerable for facilities of any size.



**RE-DO AND IT'S AS GOOD AS NEW.** St. Aidan's Church in Brookline, MA, was preserved and adapted as the centerpiece for new buildings containing a total of 50 residences. The church, originally built in 1911 and the site of President John F. Kennedy's baptism, was adapted into nine units. Colleges and universities, too, can find new and creative uses for existing facilities on their campuses or in surrounding communities. Reusing existing structures is both cost-effective and exceedingly green.

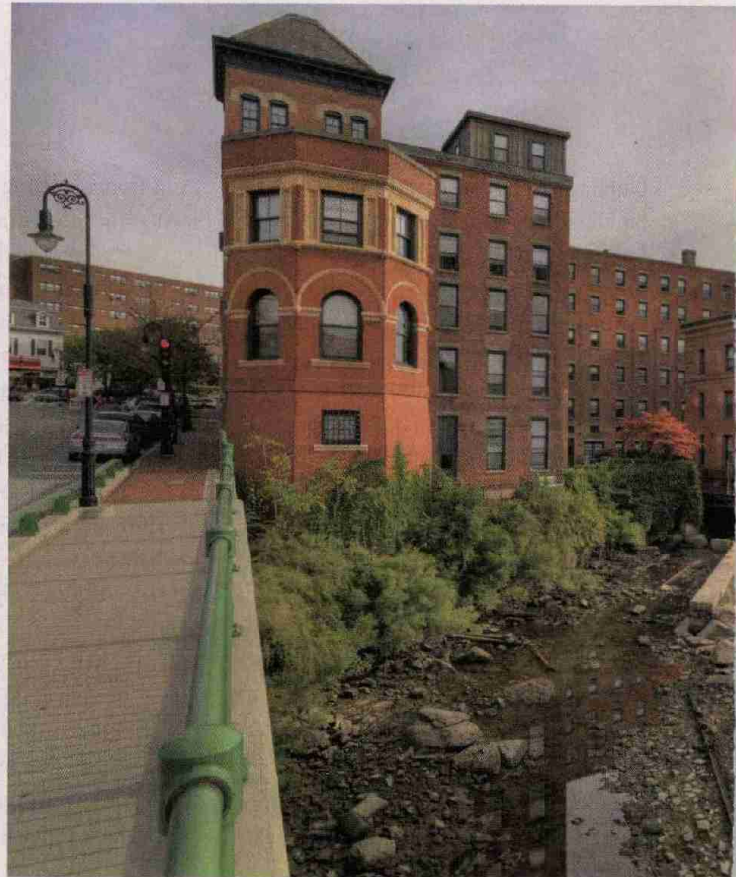
## RECYCLING HISTORY

### Support Sustainability Goals

It's no surprise that colleges projecting a leadership profile in sustainability have touted the benefits of historic adaptive reuse. Stanford University's green land use program has highlighted the adaptation of several historic Main Quad buildings for new academic programs, with upgrades for seismic strengthening and increased interior workplace densities. One architectural gem, the Old Union, has been repurposed as a Student Center, and Peterson Labs, an historic stucco and sandstone structure, now houses multiple engineering programs.

Preserving historic buildings in this way also serve to integrate campuses into the surrounding community, according to Bernard Herman, a professor of Art History at the University of Delaware, which has paid for hundreds of millions in renovations by annually allocating two percent of the school's estimated \$1B property replacement. Its Elliott Hall, a dwelling constructed before the American Revolution, was adapted for the dean of the College of Arts and Science.

"The University of Delaware recognizes that it is the primary cultural institution in Newark and accepts a responsibility to the community," Herman has said. "It consistently sets examples in



preservation of the town's historic character."

In another well-publicized case, Boston's Emerson College actually relocated its campus to take advantage of the economic and community benefits of historic buildings. About 30 years ago, the school purchased the Cutler Majestic Theatre, a 1903 Beaux-Arts opera

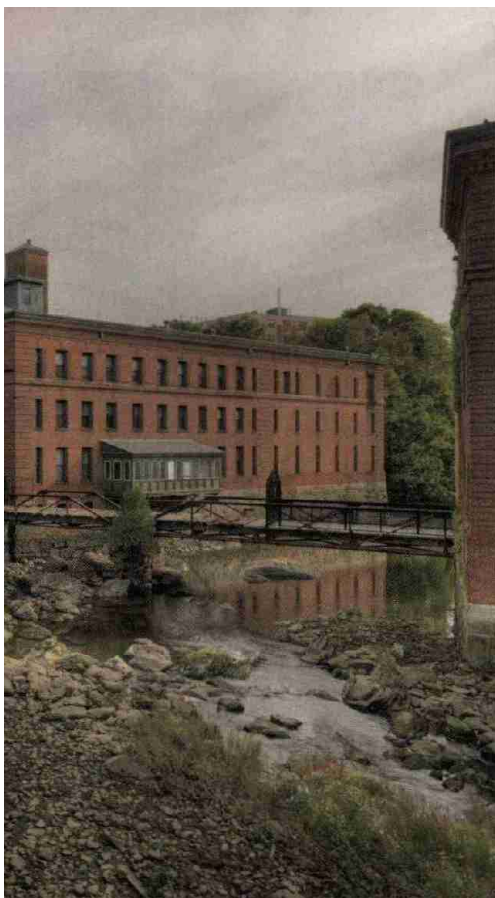
house threatened with demolition. College leaders forged a partnership with the city of Boston, the Boston Redevelopment Authority, and state and neighborhood groups to create special zoning for Boston's historic Theatre District, which spurred preservation and sensitive mixed-use development.

Seeing the success of its transformation, Emerson began a phased move of its entire campus, preserving and adapting historic buildings for dorms, classrooms, a library, and offices. A visit to the area today confirms the success of this college's vision, creating a bustling, lively arts and education nexus.

### Adaptive Reuse of Unusual Spaces

Many recent college adaptive reuse projects are unlocking value in buildings never previously considered as assets — decommissioned power plants and horse stables, for example, or


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old mills on the periphery of campus. The economics are good, especially when historic rehabilitation tax credits are considered. Federal Historic Preservation Tax Incentives are designed to encourage private-sector work, and in 2009 there were 1,044 applications approved, leveraging an estimated \$4.7B in project investment. Federal tax incentives also helped underwrite almost 14,000 housing units that year also, making them ideal for colleges needing new residential space.

Another fiscal advantage to the projects, as shown by many of the case studies cited here: Overcoming years and often decades of deferred maintenance. The University of Delaware, for example, made dramatic improvements in the campus living and learning environment while also completing its backlog of deferred maintenance

problems totaling more than \$220M, according to the University president at the time, David P. Roselle. Only 18 percent of the total price tag was covered by state funds.

Clearly, the economics work for reusing and converting historic buildings. Coupled with the eco-friendly nature of adaptive reuse and conversions, colleges are provided with a blueprint for successful growth — often within the walls of their existing campus buildings. 

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**SOMETHING OLD, SOMETHING NEW**

# A Good Start for Adapting Older Buildings

While every historic building presents unique opportunities and challenges for sensible reuse, a few key issues should be considered in the project planning phase. Among the most valuable:

**1. MAP OUT YOUR PLAN.** If adaptive reuse is an option, thorough planning — including an inventory and a physical needs assessment — will ensure that you get the optimal space in the optimal location. Respecting the architectural character within the overall design of the campus and capitalizing on potential synergies, such as leveraging efficiencies and future flexibility, are also important. As with new construction, any reuse requires integrating physical planning with curriculum development and academic goals of the institution.

**2. SURVEY USABLE SPACE.** Colleges and university buildings — particularly older ones — are notorious for having quiet, little-known spaces. Some are legacies from the past, like the basement that housed the printing press for the school paper, or long-forgotten smoking lounges. Others are simply unused. Tally up this square footage and make a plan for simple renovations that can put it back in service.

**3. INSULATE OLD WALLS.** Making spaces that were designed to house something other than staff usually requires renovations that will address occupant comfort. The biggest gains at the lowest costs often come from adding insulation to roofs and walls. Insulation can help reduce the load for existing equipment and the required size or capacity of new equipment.



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**4. SHARE SPACE AND LIGHT.** When converting classroom space into offices, keep the walls low and look for functions within the institution that don't demand private offices. Modular equipment can help you turn a classroom into a high-performance space where work is done by a small team. Such space is also flexible and can be easily converted back next time enrollment increases.

**5. CONSIDER CORPORATE-TESTED SPACE SOLUTIONS.** Shared space, "hotelling," and "co-working" have been tested and proven effective for many corporate and university environments. Explore applying these trends for faculty members who have limited office hours or, because of advances in technology, can telecommute from home or even from a space across campus.

**6. PRESERVE CHARACTER AND DETAIL.** This may not be the year to expect an angel alumnus to invest in a new building, so use the opportunity to connect with the school's past. Develop strategies to enhance and preserve older architectural details while modernizing the spaces inside. If you start the project intending to preserve the campus' historic beauty, you're unlikely to do otherwise.