

historic renovation is within reach

CREATING SUSTAINABLE, COST-EFFECTIVE, HEALTHY SPACES

by Chad Edwards



the challenge

Most preservationists get really nervous when property owners or architects start talking about sustainability. We certainly can't blame them. Decades of insensitive renovations have destroyed historic buildings, which have in turn, furthered the decay of our collective cultural assets. Century-old, single pane windows get ripped out. Exposed, triple-wythe brick walls get covered with insulation and drywall. Unique, period-based historical details get covered or removed under the auspices of 'modernizing' or for 'efficiency' reasons.

Property owners and architects also get nervous when considering the renovation of a truly historic property. Again, we can't blame them. There are stringent requirements that come with purchasing and renovating a building on the Historic Register or in a Historic District. These requirements center around preserving the historic and cultural integrity of the building and sense of place without concern for rising costs, modern space allocations, or access to skilled craftsmen. While the most sustainable building is one that already exists, those regulations are not concerned with higher levels of sustainability, health and wellness, or elite energy efficiency/net zero energy goals.

However, it is possible to have it all. A historic building can be renovated, preserved, and achieve LEED, WELL, and Net Zero Energy Certifications, all while being cost effective. It takes proper planning and a committed team of owners, architects, engineers, subconsultants, and contractors. There are strategies to consider when pursuing this challenging, but rewarding, path.



planning

Deep goal setting needs to happen at the beginning of the process. This may sound elementary, but this planning should go beyond the typical space and location needs of the project. Holding a design-based programming workshop and subsequent eco-charrette will help the team dig deep into the necessities and desires of the project. This is where sustainability, health and wellness, and energy efficiency/Net Zero Energy goals are mapped out. Is enhanced air quality important? If renewable energy is a target, then what is an appropriate Energy Use Intensity goal? What should the stretch goal be? Are geowells within the budget, and if so, what is a reasonable Return on Investment to expect in this region? These and other questions should be answered as part of a metrics-based goal setting exercise.

At this stage, it is invaluable to have a contractor or CM as part of the discussion. They typically have a finger on the pulse of the local market and associated high-level costs. Once a budget range is established for the wants and needs, then properties can be evaluated against that pro forma.

costs

Costs are paramount. First and foremost, the project needs to be penciled out, and this is where some creativity can come into play. Many historic buildings are in villages or neighborhoods with special designations or areas of interest. It is important to remember that you are breathing new life into the greater community. You are advancing the community and protecting its history. Look for local governments and economic development directors who are willing to work with you on specialized or tailored terms, such as tax incentives, fast track permitting, or variances that apply to what you are trying to accomplish. One major advantage these properties have is potential access to Historic Tax Credits.

historic tax credits

While it is true that historic properties on the registrar or in a historic district come with a slew of regulations, they also come with the possibility of financial incentives through tax credits. There are two opportunities to pursue. The Federal Tax Credit is available for any historic renovation that qualifies within the Federal Historic Guidelines. This subsidy contributes a 20% tax benefit for qualified expenditures including design and construction costs. If the rules are followed, this financial advantage is open to anyone. The other opportunity is pursuing the State Tax Credit. This program is competitive within each state based on the money available. There are various metrics of interest including, but not limited to, the significance of the building, the number of people employed by the facility, and whether it is in a neighborhood or municipality that has been underserved by Tax Credits



Pepper Construction's new headquarters is located in the heart of Lockland, a community with potential and character worth preserving





Pepper Construction’s Solar Canopy and EV prime parking spaces.

in the past. If successfully identified in the annual competition, a project will receive an additional 25% tax benefit. As such, these projects couple the State and Federal for a robust 45% financial advantage that helps offset the more expensive construction needs of an historic renovation. These benefits can also be applied to the new interventions in renovation, including any sustainability features embedded or inherent to the design. Those attributes can also leverage other funding opportunities.

sustainability financial benefits

Some municipalities offer special financial benefits for sustainable attributes. For instance, some cities have extended property tax reductions for LEED Certified buildings. Others have zoning variances for enhanced stormwater controls. For example, there may be an opportunity to purchase a smaller lot for parking while increasing bioretention cells, thereby alleviating sewer system needs. Also, the Federal Government’s recently passed IRA also offers extended benefits. The 179D Tax Credit is no longer only available to for-profit organizations. Non-profits can also access this benefit for a savings of up to \$5 per square foot for energy efficiency measures focused on the thermal envelope, lighting, and HVAC systems. Furthermore, the IRA credit increased from a 22% to a 30% credit for solar, geowells, and battery storage. It is important to map out the project’s overall goals and budget to take advantage of cross-category incentives when undertaking a challenging sustainable renovation of a historic property.



the research

Over a decade ago, the Ohio Historic Preservation Office (OHPO) and Duke Energy provided grant dollars to the Over the Rhine Foundation to hire a select group of consultants to answer the question, "Is it possible to obtain Historic Tax Credits and LEED Certification?" The OTR Foundation, Gray and Pape, emersion DESIGN and others worked with two University of Cincinnati teams and historic property owners for over a year to develop strategies and tactics to answer the question affirmatively. The team's guidelines cracked the code on sustainable solutions for historic windows, thermal envelope, and natural ventilation. The resulting document served as a guide for the OHPO, architects, and property owners throughout the state. Eventually, these approaches were highlighted on the website of the National Park Service, the regulators of Federal Historic Tax Credits. Now everyone has access to that award-winning research.

the proof

As mentioned above, it is possible to cost effectively renovate a historically significant building to be highly sustainable and healthy for its occupants. Pepper Construction wanted to showcase their preservation craftsmanship as well as their commitment to regenerative solutions. The company knew its new Cincinnati headquarters could be a positive influence in the community while serving as a national example of maintaining historical integrity while becoming highly sustainable. It is with this vision that Pepper Construction found Stearns and Fosters' former Headquarters building in Lockland, Ohio.

The purchase of this derelict building that had been abandoned for two decades presented a major risk: the pro forma could not work unless the project received Historic Tax Credits. This meant that failure was not an option. As such, Pepper Construction sought subject matter experts leading in sustainable renovations and historic preservation and found emersion DESIGN, the co-authors of the Green Guide to Historic Renovations.

Executives were excited, and a little nervous, about showcasing what could be done – not just to their building, but for the environment and surrounding communities. Holding on to the strong belief that cultural assets do not need to be condemned and torn down, Pepper invested in people, their space, and the historical integrity of Lockland.

The result is a Net Zero Energy, LEED Gold, WELL Silver Certified historic renovation of the 110-year-old building on the edge of Lockland's business district. The 400 solar panels and 16 geowells provide renewable energy and efficiencies that drastically lower their environmental impact and operational expenses. The renovation cost of the 23,000 sf, 3-story building was offset, in part, by obtaining both State and Federal Historic Tax Credits.

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By defining Pepper Construction's goals early, the team was able to set ambitious, but achievable, milestones. It also set a framework for talking with other stakeholders, including Village officials and the State Preservation Office to negotiate incentives and compliance. As the owner and contractor, Pepper could keep a pulse on costs while negotiations occurred regarding the demanding historic requirements and sustainability/healthy outcomes. However, the project was not without its challenges. Since the building sat derelict for 20 years, the roof was well beyond its useful life causing leaks into the interior. Consequently, large sections of floor structure had rotted away and were missing. The interior and exterior brick needed major rehabilitation, and many of the windows were destroyed or missing. Fortunately, with extensive care and repointing, 100% of the detailed brick work was restored. Almost half of the windows were salvaged. Local plaster craftsmen restored the ceilings and walls. Some modern interventions did take place. A new elevator/stair tower was built to modern codes, and acoustical drywall was installed to help with sound deadening on select soffits and ceiling locations.

conclusion

Many preservationists across the U.S. believe that renovating culturally significant buildings into high-performing and healthy assets comes at the loss of historic integrity. This myth is being debunked by highly sustainable, healthy, and historically accurate renovations. Historic renovations can be cost effective by enlisting subject matter experts, through proper goal setting and planning, and by leveraging the many incentive programs available.

To learn more, contact emersion's team of experts!



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Chad, is president and CEO of emersion DESIGN, the world's first architecture and engineering firm to have a LEED Platinum office. He strives to lead from a heart of service and making sure his work advances the clients' mission for the common good.