

# Old Buildings, Creative Solutions

No single strategy exists when it comes to buildings with historic character.

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When it comes to buildings with landmark status or just general historic character, architects, owners, and developers are faced with a variety of choices about what's best for the property and the bottom line. Often there is not a simple choice.

“The decisions behind preservation, restoration, and adaptive reuse always depend on context and situation. Is the building landmarked, or is it in a landmark district? Will the market or the neighborhood continue to support the building's original use, or does its purpose need to evolve?” asked John Cetra, FAIA, founding principal, CetraRuddy Architecture, New York ([cetraruddy.com](http://cetraruddy.com)).

“In cities like New York where there's constant change and evolution, adaptive reuse has long been, and will continue to be, an important tool. In Manhattan's Morningside Heights neighborhood, we're renovating five buildings from the former St. Luke's Hospital—several of which are landmarked—and adapting them into a rental



Murphy, Burnham & Buttrick Architects were involved in work at New York's St. Patrick Cathedral, conserving what was there but not doing a strict restoration. Crockets that had been removed years earlier were not replaced, for example. Photo: © John Baer/Building Images Photography, courtesy MBB

apartment development called 30 Morningside. As a hospital, they're no longer practical, but big windows, tall ceilings, and unique interior layouts mean that the original design now works very well for a new use as residences,” he said.

“Then again, sometimes it works best to combine restoration and adaptive reuse with new construction, so you can unlock the maximum value from both. For a commercial development we're designing in New York City's Chelsea neighborhood, renovating existing structures and connecting them to a new office tower brought an additional 110,000 sq. ft. of rentable space to the project,” he added.

“When you're dealing with a historic building, even if it's not landmarked, our first approach would be, ‘What can we keep here? What can we maintain?’ Then step off from there, and I think in some cases people are forced to do that because of a landmarks commission or because of some kind of status of the building, but I think it's, in some ways, it's also a practical thing. I mean, some of these buildings, you couldn't build them today, and to tear down a beautiful façade that's made out of 2 feet of masonry just in some cases makes no sense at all,” said Jeffrey Murphy, FAIA, LEED AP, partner, Murphy, Burnham & Buttrick (MBB) Architects, New York ([mbbarch.com](http://mbbarch.com)).



St. Patrick's bronze doors on Fifth Avenue are thrown open as a welcoming gesture. Sliding glass doors let passersby know the cathedral is open while retaining heat and air conditioning. Photo: ©Elizabeth Felicella/Esto, courtesy MBB



Glass was also used in the Lady Chapel in St. Patrick's to minimize noise. The enclosure looks like it's not actually there, according to architect Jeffrey Murphy. A more traditional solution with wood would have substantially changed the look and feel of the space. Photo: ©Elizabeth Felicella/Esto, courtesy MBB

In the case of the Park Avenue Synagogue in New York City, MBB took a landmarked neoclassical mansion that used to be the Trevor Day School and gave it a high-quality exterior renovation that maintained the existing historic fabric. The interior was reconceived according to the client's intended use. "In rethinking how our clients are going to use the building, we are not always quick to automatically preserve a historic interior," he said.

MBB's work at St. Patrick's Cathedral, New York, was conserving as opposed to restoring, Muprhy explained. "We basically took what was there, fixed it, cleaned it, repaired it, and brought it back to the way it is, as



Built in 1907, Ludlow Mill 10, Ludlow, MA, remained derelict for nearly a decade prior to its rehabilitation and adaptation. The Architectural Team's work included a complete restoration of the structure and facade, as well as adapting the building's 108,000 sq. ft. to 75 modern apartments for seniors. Photo: Gregg Shuppe, courtesy The Architectural Team

opposed to if it were a strict restoration," he said. He explained that in the 1940s a good deal of stone was pulled off the building because it was falling down. For example, decorative crockets that lined the entries off of Fifth Avenue were falling off and were replaced with a less ornate entry to the building. "In our recent work, we did not put the crockets back. We took what was there, and we conserved it. We cleaned it, fixed it, and patched it," Murphy said.

"While being true to preserving the historic fabric of the cathedral, a handful of things that we did were actually quite modern," Murphy added. Monsignor Ritchie, the rector at St. Patrick's, started throwing open the big, bronze doors on Fifth Avenue as a welcoming gesture, he explained.

The obvious downside was a significant loss of heat or air conditioning. The solution was mechanized, sliding-glass doors pocketed into the walls. "Every morning when it's 8 degrees out, they can open the bronze doors, press a button and close these glass doors, and everybody who walks by can see that the cathedral is open. They actually just go around to the vestibule



Located at 30 Morningside Drive in Manhattan, the residential conversion of the five Beaux-Arts structures formerly occupied by Mount Sinai St. Luke's Hospital will retain the historic fabric of the existing structures in compliance with the historic landmark regulations, while also meeting all building code requirements. Photo: Courtesy CetraRuddy

doors and go in. That was a modern addition, a mission-related thing made the cathedral as welcoming as possible," Murphy said.

A similar solution was applied in the back of the church in a space called the Lady chapel, which is right behind the altar and that had a high arch that was approximately 35 ft. wide and 55 ft. high. "It's a very lovely chapel, but it was really just always loud. People walking around the church would be laughing and talking, and it wasn't a very intimate worship space," Murphy recounted.

After considering more traditional approaches, MBB designed an all-glass, 55 ft.-high glass partition that filled the entire space. "We also designed a glass beam that supports these three 9,000-pound glass panels. The enclosure looks like it's not actually there. If we had

done something like that more traditional with wood, you would have noticed a real a change in the church. Because we were able to use this modern language, it's actually, in our view, a better and more respectful response. In some cases technology solves a lot of problems that historic buildings have," Murphy said.

### What's Historic?

"Historic character is a loose term, but determination of historic significance is typically made based on the guidelines of the National Park Service," Lada Kocherovsky, Assoc. AIA, principal, Page & Turnbull, San Francisco (page-turnbull.com).

"In California, the California Environmental Quality Act (CEQA) mandates that impacts to the environment are analyzed and mitigated, which includes assessing development impacts to the potential historic resources. In California this applies to buildings more than 50 years old, or important historic landscapes. The redevelopment of existing structures typically begins with an analysis of their historic merit. This is where our firm starts its work," Kocherovsky said.

"About 80% of Page & Turnbull's architectural portfolio is technically categorized as rehabilitation and adaptive reuse, because developers and property owners wish to use the existing, potentially historically significant buildings for current applications," she said. "So we re-

habilitate buildings, inserting new uses, more often than we perform strict restoration of buildings. 'Restoration' is a process of returning a historically significant building back to its original splendor, with deteriorated or missing components needing to be restored, replaced, or carefully recreated. 'Preservation,' on the other hand indicates a building or structure that has retained its integrity but requires some effort to protect the existing characteristics, elements, and details and prevent their deterioration," Kocherovsky said.

### Landmark Complexities

Dealing with historic properties often adds complexity to a project. "Landmark projects always add another layer of review, which adds time and cost. In general, though, we find that a landmarks review process doesn't hinder adaptive reuse," said John Cetra.

"Instead, it becomes a planning tool, creating a framework for a sensitive renovation that suits modern needs and the developer's goals. Plus, for many historic restoration projects, sensitive design is inspired by the landmarks process but occurs with or without the review. At 30 Morningside, the project includes preservation and restoration work on landmarked buildings as well as additions on non-landmarked buildings to create a cohesive new development. The new additions did not need to go through landmarks review, but their design is inspired by the original buildings and their context. Above all, it's important for any renovation or preservation project to respond to the surrounding context, and for any adaptive reuse project to do the same while bringing the highest possible value for its new purpose," he said.

Cetra continued, "Building codes can seem like an obstacle, too, but they're often an opportunity to address multiple challenges at once. For example, although roof decks have become important amenity spaces in residential developments, rooftops on many existing buildings aren't designed for a live load capacity that complies with current code. Accommodating those uses often means significant structural reinforcement. It's the same story with building systems (mechanicals, AC, elevator machine rooms, exhaust fans) that are moving up from basements to the rooftop as they become larger and more sophisticated, and as resiliency concerns impact design."

"Every project has challenges," Kocherovsky agreed. "The standards applicable to historic buildings as defined by the Department of the Interior are the same regardless of whether they are listed on a register of historic places or simply considered to be eligible. Local and municipal agencies may apply stricter standards in some cases, such as in San Francisco, which has a much more intense approval process than those of other localities or the state."



For the San Francisco Mining Exchange Building, Page and Turnbull used original terra cotta detailing to make casts for new terra cotta pieces, and made multiple in-person visits to ensure the replicas were sculpted and fired properly in the correct color. Photo courtesy Page and Turnbull.

“Design teams often have to be creative and balance historic aspects against one another. For the Walt Disney Family Museum, San Francisco ([waltdisney.org](http://waltdisney.org)), for example, our design called for installation of fire sprinklers in lieu of fire-resistive construction. This allowed us to retain the original wooden window frames of the historic barracks building. Otherwise we would have had to introduce fireproof materials into the fenestration assemblies, compromising their original character,” Kocherovsky related.

Likewise, fire safety was a concern in the Murphy, Burnham & Buttrick (MBB) Architects work at St. Patrick’s and also at Trinity Church on Wall Street, Jeffrey Murphy explained. The attic above the nave at St. Patrick’s is basically a tinderbox. The New York Fire Department flatly said it would be too dangerous to send firemen up there, he said.

“We realized that a sprinkler system wasn’t a great solution because if you load up that plaster ceiling with water, it would basically just collapse the entire ceiling onto the floor of the church. Instead, we installed a mist system, something that’s used in ship applications where you can’t use a lot of water. It uses about a tenth of the water of a sprinkler system, but it’s very effective in extinguishing a fire. It wouldn’t saturate that ceiling and make all of the plaster come raining down on the floor of the cathedral,” Murphy said.

While non-profit organizations, since they are generally tax-exempt, have little incentive to earn historic tax credits, the local landmark commission still can have a big influence on a project. In the cases such as Trinity Church and St. Patrick’s, “we do a lot of work that requires working with New York’s Landmarks Preservation Commission to come up with solutions that are acceptable to the local community, to the commission, and the client,” Murphy said.

Far from complaining, Murphy commented, “New York’s Landmarks Preservation Commission is a sophisticated agency with a level of expertise that is well respected. They are really the watchdogs, and they make sure that what’s being done to the outside of historic buildings is appropriate and makes sense from a preservation standpoint.”

“Interestingly, they will entertain certain interventions that enable institutions and owners to use a building in the way that it needs to be used in current times. It’s all how you show deference to the historic fabric but still achieve your goals from a design standpoint,” he said.

“One of the most difficult things to do is strict preservation,” said Robert Verrier, FAIA, NCARB, The Architectural Team, Chelsea, MA ([architecturalteam.com](http://architecturalteam.com)). “Historic monuments, ornate buildings, churches, and theaters are incredibly hard to do. These buildings have cast plaster, cast iron, and materials we no longer use



Originally constructed in the 1840s, Counting House Lofts 71 is the adaptive reuse of a historic industrial warehouse in Lowell, MA. The 170+-year-old building suffered considerable subsurface deterioration, requiring the removal of large portions of the structure to reconstruct and stabilize the foundation. Photo: © Andy Ryan, courtesy The Architectural Team

much anymore. It’s almost impossible to find artisans who know how work with these materials now.”

Funding often is another problem with these types of buildings. “If you don’t get federal or state funding, you have to go out and get donations. If you’re doing fundraising it could take three to five years. By that time, the buildings are more deteriorated than when you started, so that you need more money, and there are more problems,” he said.

Present-day building codes are sometimes at odds with preservation efforts, noted Scott Maenpaa, project architect, The Architectural Team. He cited an instance where both the state and federal historic offices wanted to keep a double staircase intact. However, a building code official pointed out the stair treads were deeply worn and were a trip hazard. “We had to take off the treads and sand some of them down and replace them. Others were too worn, we actually had to look for a matching piece of timber that was approved and could be reinstalled for those areas,” he said.

One of the big problems—cleaning—sounds simple but it isn’t, Verrier said. “When you’re cleaning decorative material, you have to be very careful about materials you use, as well as the pressure if you’re using water pressure. You can destroy something by cleaning it the wrong way. That’s a very, very, important issue in historic buildings, because you have frescoes, plaster, woodwork, cast iron, brick, terra cotta, glazed terra cotta, wood, and on and on. If they’re not cleaned properly, you can lose your tax credits, or you can also destroy the thing that you’re cleaning.”

One thing we do on almost every project is sandblast the interior because there’s years and years of lead paint. We need to get that off, because we need to make these buildings lead safe,” Maenpaa added.

“There’s certain PSI we have to hit. We can’t raise the grain; we can’t fuzz out the wood. If we raise the grain

too much, the preservation office can come in and say, 'Well, no, you damaged that wood too much. You're not going to get these tax credits.' So we're always walking that fine line between what we need to do, compared to what needs to be done for the preservation tax credits," he said.

## Incentives and Rewards

Given the added complexity and difficulties, there are nevertheless substantial benefits and rewards in dealing with historic properties.

"More and more, the development community is recognizing how much hidden value can be unlocked in historic properties. From a developer's perspective, former commercial or industrial buildings often have the bones for great residential conversions. Maintaining those buildings' historical character—through strict preservation or renovation with contextual and sensitive additions—can increase market appeal by preserving and utilizing desirable features and finishes. Plus, working with an existing structure allows the freedom to leverage elements one might not be able to include in a new building in the same location. In the residential conversion of a historic former telephone-exchange building in New York City, Walker Tower, we used the original setbacks to create large, accessible terraces on upper-floor spaces. All of a sudden, many units had sweeping outdoor views of the New York City skyline, which added tremendous value for the developer," said CetraRuddy's John Cetra.

Tax credits are an important factor in working with historic buildings. "Financial incentives and tax programs are crucial. While changes to historic tax credits (HTCs) may impact some investment decisions, these programs are so important in many markets that we think they'll continue to play a significant role," Cetra said.

"Federal historic tax credits (HTC) have had a significant impact on incentivizing reuse and preservation of historic sites. Tax credit rehabilitation projects boost local economies and bring communities together. Under the recently passed tax overhaul, a major tax-incentive program remains, and continues to provide 20% income tax credits for buildings eligible to be listed in the National Register of Historic Places, and rehabilitated in compliance with the Secretary of the Interior's Standards. Sadly, the 10% HTC for buildings considered non-historic (but constructed prior to 1936) is gone. Also, the remaining 20% HTC has been made more challenging to qualify for: there is less room for flexibility and negotiation, and the process is more complicated," said Lada Kocherovsky of Page & Turnbull.

## Mistakes and pitfalls

Mistakes and pitfalls naturally accompany historic work. John Cetra offered the following advice: "One challenge with historical projects is that until you really inspect and learn about the building, you won't know exactly what you're dealing with. Are all the columns really located exactly where the plans and drawings say they are? If it's a large loft building with limited interior light and airflow, how much structural work is required to insert an atrium or light well? Putting in the time and work up front to get to know the building will save so much time and effort down the road. The biggest mistake is not doing your homework."

"A potential pitfall for structures of historic significance is the failure to accurately recreate lost architectural details and elements. Doing so properly takes thorough research into the original methods of construction. One often sees quick-and-easy approaches taken such as the use of foam or plastic to recreate plaster or terra cotta, which is inadvisable. Not only do these materials not resemble each other, but the foam and plastic solutions often deteriorate quickly, or otherwise create more problems than they solve. Application of appropriate materials will be more historically sensitive, visually appealing, and long lasting," Lada Kocherovsky said.

Mistakes can lead to the loss of tax credits, Verrier warned. He related the tale of one developer who didn't like a free-standing chimney on the property he was developing and bulldozed it against advice. He lost the tax credits he was counting on.

"I think people underestimate what it takes to deal with these kinds of buildings, Jeffrey Murphy said. "Sometimes it's a challenge to balance interventions with preserving the historic fabric. There can be a point at which you make the wrong decision about taking out historic fabric. On the flip side, maybe there are some things that are not of such value that you work around when, at the end of the day, it probably would have been better just to take something out and start all over. I think one of the pitfalls is knowing when to maintain existing fabric and when not to, and being very smart about that," he continued.

*Historic buildings require a good deal of knowledge and thought. Recognizing challenges, variables, and opportunities upfront is the first step toward any project.*