

The Adaptive Reuse of Historic Industrial Buildings:
Regulation Barriers, Best Practices and Case Studies

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“What we need is continuity . . . historic preservation is not sentimentality but a psychological necessity. We must learn to cherish history and to preserve worthy old buildings . . . we must learn how to preserve them, not as pathetic museum pieces, but by giving them new uses.”

Ada Louise Huxtable

Lessons In Healing the City's Scars

Introduction

A growing number of cities are pioneering holistic and policy strategies to abate and rehabilitate their vacant or underutilized historic industrial buildings.¹ Most conversions are taking place in the Northeast due to the large number of industrial buildings located there, but it is a common trend around the country. A few cities have gone even further by making the adaptive reuse of vacant industrial buildings an integral part of their infill development and affordable housing strategies under the rubric of “smart growth.”² The opportunity to reuse obsolete facilities in the urban core supports sustainability and smart growth initiatives designed to focus redevelopment in inner cities in an effort to decrease urban sprawl. As an alternative to our ever-increasing throw-away society, adaptive reuse offers a sustainable building site with existing infrastructure and materials.

Historic buildings help define the character of our communities by providing a tangible link with the past. Today, historic districts around the country are experiencing unprecedented revitalization as cities use their cultural monuments as anchors for redevelopment. Sometimes, efforts to preserve and revitalize historic buildings run up against financial obstacles, restrictive zoning and codes, contamination, and structural problems that create challenges in reusing these unique structures. Fortunately, there are several planning tools and financial incentives available to make the adaptive reuse of industrial buildings more economically feasible. Industrial buildings will always have added costs associated with their reuse, but if anticipated early on, can be successfully dealt with through some careful planning and creativity.³

What is Adaptive Reuse?

Adaptive reuse is the act of finding a new use for a building. It is often described as a “process by which structurally sound older buildings are developed for economically viable new uses.”⁴ The recycling of buildings has long been an important and effective historic preservation tool. It initially developed as a method of protecting historically significant buildings from demolition.⁵ The Urban Land Institute defines rehabilitation as “a variety of repairs or alterations to an existing building that allow it to serve contemporary uses while preserving features of the past.”⁶ Adaptive reuse is then a component of rehabilitation. Adaptive reuse is often called adaptive use referring the redundancy of the term ‘reuse.’

¹ Joseph M. Schilling, “The Revitalization of Vacant Properties: Where Broken Windows Meet Smart Growth” (2002) International City/County Management Association, 4.

² Joseph M. Schilling, “The Revitalization of Vacant Properties: Where Broken Windows Meet Smart Growth” (2002) International City/County Management Association, 4.

³ Bonsall, n.p.

⁴ Austin, 49.

⁵ New River, n.p.

⁶ Bookout, 315.

Industrial buildings are especially well suited to adaptive reuse due to their large, open spaces. Many industrial buildings are significant primarily for their architecture, as vernacular relics from the industrial age, and may be less so for their association with prominent people and events. Some industrial buildings, on the other hand, were designed by prominent early twentieth-century architects, such as Albert Kahn. As this transition took place, the red brick factories with load-bearing walls gave way to steel frame construction at the end of the nineteenth century. By the early twentieth century, the skeleton became prominent on the exterior, reinforced concrete was the material of choice, and the windows became much larger. The decline of heavy industry during the early and mid-twentieth century has left a legacy of abandoned, idled, and underutilized dormant sites across the American landscape.

Many developers who do adaptive-reuse projects claim residential developments are a matter of necessity (The overhead of updating these buildings is costly to the point of being prohibitive, they say. Taking into account the specifics of the new fire code, the common need for environmental remediation, and the physical neglect suffered by most mills over time, the quickest, easiest, and most profitable way to deal with the cost is to develop mills into residential units than can be sold.⁷

Adaptive reuse should be the preferred strategy for an industrial when no other industrial option is available. And should always be favored over demolition and redevelopment. There are countless reuse options available for industrial buildings. Some of the more popular conversions are of industrial building to museums, art studios, live-work units, offices, residential units, schools, retail, and increasingly more are combining several uses together. Indeed, it has been a growing trend in the United States for the last forty years.

Adaptive reuse came into mainstream architectural parlance during the 1960s and 1970s due to the growing concern for the environment. According to a study by the Advisory Council on Historic Preservation, *Adaptive Use: A Survey of the Construction Costs*, there was growing concern of the environment during this time period and fuel and material costs were extremely high.⁸ The prohibitive costs and associated difficulties securing buildings permits resulted in adaptive reuse becoming a viable alternative to new construction and the land clearance of urban renewal. At this time, the preservation movement also was gaining ground and gaining national attention with grassroots efforts to save SoHo and Penn Station in New York City, in the early 1960s. In 1961, in *The Death and Life of Great American Cities*, Jane Jacobs wrote the following praise for ordinary historic buildings:

Cities need old buildings so badly it is probably impossible for vigorous streets and districts to grow without them. By old buildings I mean not museum-piece old buildings, not old buildings in an excellent and expensive state of rehabilitation—although these make fine ingredients—but also a good lot of plain, ordinary, low-value old buildings,

⁷ Aber, n.p.

⁸ Advisory Council on Historic Preservation, *Adaptive Use: A Survey of the Construction Costs*, Washington, D.C., vol. 4, no. 4, June 1976. Cited in Fitch, 169.

including some rundown old buildings.⁹

Thus, there was a growing advocacy base for the preservation of vernacular buildings, long overlooked for the museum pieces and famous sites made famous by American history. Ghirardelli Square in San Francisco is considered the first successful adaptive reuse of an industrial complex. The chocolate factory relocated in the early 1960s and the Roth family purchased the block in 1962 in response to fears that the block would be demolished. In 1964, after an extensive renovation, the factory is brought to life as a 176,000 square-foot retail center with a brick-terraced courtyard and restaurants. The buildings are listed in the National Register in 1982. Efforts to reuse the warehouses flanking Faneuil Hall and Quincy Market in Boston as a 'festival marketplace' materialized in 1976 after years of planning. New York City exerted funds to revitalize South Street Seaport into a destination for shopping, eating, and cultural activities. Finally, Struever Bros. Eccles & Rouse, redeveloped Baltimore's Inner Harbor with the adaptive reuse of several industrial buildings and new construction.

Importance of the Adaptive Reuse of Industrial Buildings

Preserving these industrial icons is an important part of maintaining the historic industrial character of a community. Changes in industrial practices have changed so dramatically in the last century that different regions have been prominent at different times and presently few regions dominate anymore as industry has shifted globally. Between 1880 and 1920, for example, the textile industry relocated from New England to the southeast.¹⁰ This rapid shift was followed by southern dominance for almost a century, but globalization and inexpensive labor in other regions of the world has resulted in the decline of the U.S. textile industry and other industries. In the last half of the twentieth century, factories started to close in large numbers as corporations moved their manufacturing to developing countries with cheaper labor in Mexico or Asia. Other factories were affected by the dawning of a "post-industrial age" where "electronic circuitry silently replac[es] the hiss and clank of moving parts."¹¹ As a result of these circumstances, among others, there truly is a large stock of derelict industrial buildings in the western world. At first, northern factories moved south and for the last few decades many southern plants are closing and relocating. In 2001, 62 mills closed in North Carolina, many in small towns.¹² Such closures have had devastating effects upon the local economies of many such towns.¹³ Empty mill and factory buildings now can be found across our landscape. The late-nineteenth and early-twentieth century construction dates of the southern industrial buildings, and the earlier construction dates of many northern versions means that the remaining buildings are architecturally significant and often less structurally sound.

Industrial complexes and buildings are impressive architecturally, both in their size and muted decorations. They were built with practicality in mind - production, efficiency, and sometimes safety of employees. The majority of early American

⁹ Jane Jacobs, *The Death and Life of Great American Cities* (New York and Toronto: Random House, 1961), 187.

¹⁰ Bergsman, 66.

¹¹ Niesewand, 9.

¹² Bergsman, 69.

¹³ Bergsman, 69.

industrial buildings from the eighteenth and nineteenth centuries are remnants of anonymous and vernacular architecture serving a functional purpose rather than a theoretical one. The factories designed by Frank Lloyd Wright, Walter Gropius, and Albert Kahn may indeed be exceptions, but the nineteenth century factories designed and built by craftsmen are the ones most in need of protection and new life. As a result of their lack of famous associations and their functional design, many industrial buildings were historically ignored, unlike country homes, palaces, and castles which early preservationists valued for their associations with famous people. The neglect of industrial buildings by some in the preservation community confirms that they have long been, and still are, considered by many to be a nuisance and an eyesore. They are often overlooked due to their blighted surroundings, polluted landscape, and 'ordinary' architecture. Such a belief ignores the rich architectural detailing, character-defining features, and unique public spaces often created in industrial complexes.

When factory architecture is saved, it is the result of a belief of its potential to be transformed or for its rich architectural fabric. The anonymous lives of the thousands of workers who were subjected to harsh working conditions in the factory are seldom recognized. Therefore, asking the question 'what has this building been?' in addition to 'what could this building become?' will result in a conversion that does not hide the building's past.¹⁴ Rehabilitating old urban industrial neighborhoods or structures is an issue at the forefront of contemporary urban development in the United States. The sites are called brownfields (as opposed to greenfields) because there's potential or actual chemical contamination that needs to be dealt with before converting these buildings into an alternative residential or commercial use. A successful adaptive reuse project can bring redevelopment, heritage tourism, and new life into a community.

Regulatory Barriers & Others Limitations

The Social Costs of Vacant Properties

It is widely accepted that abandoned properties attract vandals, homeless, arsonists, and drug dealers, and as a result drive down property values, taxes, and services, and discourage investment in a community.¹⁵ Vacant and abandoned properties impose numerous social costs upon the local jurisdictions within which they are located. In addition to reducing property values and property tax revenue and attracting crime, they "strain the resources of local police, fire, building, and health departments."¹⁶ The drainage of municipality services is detrimental since the vacant properties are providing little or no tax revenue in return.¹⁷

The Pennsylvania Horticultural Society, in a study of vacant and abandoned properties both nationally and within the City of Philadelphia, summarizes the reasons for vacant

¹⁴ Bunnell, foreword.

¹⁵ Steve Chambers, "New Law Helps Group Buy, Restore Vacant Properties," *Star Ledger* (New Jersey - what city?) (January 25, 2004): n.p.

¹⁶ Joseph Schilling, "Vacant Properties: Revitalization Strategies" (2002a), 1.

¹⁷ Smart Growth America. "Social Costs of Vacant Properties." Draft (February 2004) (www.vacantproperties.org), 1.

properties-induced blight, which can aptly be applied to vacant historic industrial buildings:

The problems created by abandoned lots and structures cannot be contained within property boundaries or city limits or stopped at county lines; they spillover to affect surrounding communities. As abandonment increases in a neighborhood, property values decline and owners become less willing, and perhaps less able, to maintain their real estate. In turn, more and more properties fall into disrepair and eventual abandonment. It is this self-perpetuating dynamic that makes the word “blight,” with its association of disease and contagion, an apt metaphor for neighborhood distress. In the worst cases, the downward spiral of deterioration and abandonment continues until entire blocks and neighborhoods are rendered virtually uninhabited.¹⁸

For the most part, when a property is occupied it will be adequately maintained in order to accommodate its use as a business or dwelling. Yet, for some reason, many owners have no interest in the upkeep of their properties. Some are speculative developers sitting on their properties waiting for the real estate market in that area to pick up, while others are industrial companies forced to close their plant or warehouse as the economy has changed.

Neighborhood decay and blight happens at a rapid rate in those communities plagued with abandoned buildings and vacant properties. A few abandoned buildings can quickly spread throughout a transitional neighborhood. Local residents start to feel unsafe and property developers and business owners become reluctant to invest in these neighborhoods. Many residents eventually leave while those who remain become accustomed to blight as the neighborhood norm. This vicious cycle continues with each new pocket of vacant lots and abandoned buildings.¹⁹ This idea of one boarded-up building often leading to greater abandonment has been termed the “Broken Window Theory” by public policy experts George L. Kelling and James Q. Wilson. Kelling and Wilson have observed, “... social psychologists and police officers tend to agree that if a window in a building is broken and is left unrepaired, all the rest of the windows will soon be broken.”²⁰ Therefore, a neglected property allowed to remain in such a condition is a signal to the community that no one cares.

Stabilization

The stabilization of vacant properties is an important part of the revitalization cycle and infill development process. Why is it important to stabilize vacant properties? The cleaning up of debris and graffiti can have a positive effect on the blight caused by vacant properties. In addition, it is important to prepare these sites for rehabilitation or redevelopment. It is especially critical to stabilize buildings which

¹⁸ The Pennsylvania Horticultural Society, “Urban Vacant Land: Issues and Recommendations” (1995), 18.

¹⁹ Joseph Schilling, “The Revitalization of Vacant Properties: Where Broken Windows Meet Smart Growth,” (2002b) International City/County Management Association, 21-22 (available at www.icma.org/vacantproperties), 4.

²⁰ James Q. Wilson and George L. Kelling, “Making Neighborhoods Safe,” *Atlantic Monthly* (February 1989).

might be rehabilitated, so that all deterioration is halted. The overall consensus is that local governments and nonprofits should contain the vacant properties problem before it gets worse; however, the local governments and the communities need an array of new strategies and tactics (such as receivership) that address the sporadic, spot blight that plagues the region's worst neighborhoods.

The use of inter-departmental working groups, which typically consist of an integrated team that includes members from a number of key departments, are an essential ingredient for effective local vacant properties programs. For example, the City of Las Vegas' integrated service teams (IST) includes police officers and inspectors.

It is apparent that local governments must have the ability to take a variety of actions in order to tailor the remedy to the facts of a particular property. More importantly, local governments need to build consensus with the community about their vacant property programs and the specific applications of these legal remedies. Certain properties demand more aggressive actions, while other properties may only need a simple notice to the owner or some financial assistance. Partnerships with CDCs, realtors, buildings, and the probate systems would further alleviate some of the more complex vacant properties.

Slum Abatement and Blight Enforcement Response team: The City of Tucson, Arizona, has created a Slum Abatement and Blight Enforcement Response team. The SABER team has helped break down inter-departmental barriers. The program tries to address social behavior issues that result when blighted properties become serious problems. Tucson is a fast-growing Sunbelt city consisting almost entirely of single-story structures with the exception of some commercial and apartment buildings. The sprawling city has many neighborhoods with varied uses, including residential, commercial, and industrial. Slum-like conditions are not centralized in any one area of the city, but instead are dispersed throughout. SABER is a multi-agency project lending assistance to individuals and neighborhoods to resolve issues, including substandard housing conditions, overgrown vegetation, rodent problems, vandalism, safety concerns, and abandonment. The city and the seven involved departments utilize the following planning tools to improve their neighborhoods: uniform building codes, administrative codes, housing codes, and vacant and abandoned building codes. The city is still reviewing the ordinance to refine it - to see how it could be even better and cover more ground. In addition, they are also seeing how this model for code enforcement could be applied to other issues and areas of local government. Although it does not have a notable number of historic industrial buildings, Tucson's SABER program could be applied in older communities with abandoned industrial sites, especially when they are dispersed throughout a city or region.

Registration and Property Maintenance Ordinances: More research needs to be carried out on how to tackle already-secure buildings which have been boarded up for years. The City of San Diego has used successfully is to require property owners to register their properties and produce a rehabilitation plan. The owners are assessed a fee each time there is a complaint or nuisance call about the property. These registration ordinances provide a disincentive for keeping buildings boarded, however, it is still illegal for most local governments to demolish properties that are structurally sound. In San Diego, the property owners are required to submit a rehabilitation plan, but only about six owners have actually done this. There is no enforcement of the

rehabilitation plan, since there is no staff to monitor the properties. While this model is not perfect, its flaws could be improved upon in similar ordinances elsewhere. By imposing limits on boarded and secured structures, such an ordinance could greatly improve the visual, security, and property value problems associated with spot blight and general abandonment.

Rehabilitation and Infill Development

Infill Incentive Districts: Arizona passed a law two years ago that allows cities to pass plans for infill incentive districts. Options that the law authorized include various incentives for those areas, such as new zoning procedures, expedited processing, etc. The City of Phoenix adopted an infill development ordinance and housing incentive program. The city's Infill Housing Program encourages infill development through a housing program, established by an ordinance in 1995. In order to be classified as an Infill Incentive District, an area must meet three of the following six criteria: Vacant and dilapidated buildings; vacant or underutilized land or contaminated sites; nuisance activities; absence of development activity; high crime rates; and population decline. Among the incentives offered by the city are the waiving of a number of development-related fees; city participation in the cost of off-site improvements; focused blight control efforts adjacent to infill development sites; expedited zoning procedures; and different standards for development. The assistance of a city staff "Infill Development Team" that has the explicit mission of shepherding infill projects through the city planning and development process is also offered to those in the districts. While the majority of new units have been single-family homes, the creation of such a program has the potential to promote and encourage the rehabilitation of contaminated and/or vacant industrial buildings.

In Arizona, cities can issue a notice of interest in acquiring properties and if they cannot, they go to the City Council and request authority to condemn and demolish. It is not an easy process to acquire properties, even in redevelopment areas. Once the city gets ownership of the property, it issues a Request for Proposals (RFP) to select a buyer. The city will typically sell a property to a potential developer at a reduced cost. Phoenix began selling properties to nonprofits and shared plans and designs with nonprofits for free.

Vacant Properties Revitalization Cycle

A wide variety of communities have vacant properties due to poverty, sprawl, race relations, economic hardship, and loss of jobs. The impacts of vacant properties, not limited to disorder, nuisances, decreased property values and taxes, can be negative even in the healthiest of neighborhoods. While it is necessary to focus on the property and what should happen to it, it is equally important to address why the property fell into disrepair or was abandoned. The Vacant Properties Revitalization Cycle is a strategic framework for revitalization. The cycle consists of the following five stages: 1.) Prevention and Assessment, 2.) Stabilization, 3.) Rehabilitation Resources, 4.) Property Transfer or Demolition, and 5.) Long-Term Revitalization Strategies. The cycle can serve as a self-assessment tool for local vacant property programs as a gauge of how to best allocate resources.

The first stage of the cycle involves the following actions: *Prevention*: Work with property owners, housing inspection, pro-active code enforcement, etc.; and *Assessment*: Know your territory and understand particular local conditions affecting abandonment. The first stage emphasizes the importance of developing a property information system, often called “early warning systems.” In “The Revitalization of Vacant Properties: Where Broken Windows Meet Smart Growth,” Joseph Schilling details the next four stages of the Revitalization Cycle as follows:

- **Stage Two: Stabilization.** For most cities, the immediate goal is to stabilize the site or neighborhood. Cities generally use a wide array of abatement powers and code enforcement strategies to get the owners to clean up and secure these properties. A major objective is to attract private reinvestment back to these blighted neighborhoods by using city resources to stabilize a few target sites.

Abatement: The first responsibility is to abate those unsafe and unhealthy conditions that create public nuisances on the property and for the surrounding neighborhood.

Investigation and owner’s profile: A critical step during the preliminary investigation is to find out why the property owner let the property deteriorate. Does he or she have the interest and the commitment to make the necessary repairs to bring the property back up to code? Does he or she also have the financial or physical ability to complete the rehabilitation? Is the owner only interested in real estate speculation?

Neighborhood inventories: Vacant properties tend not to exist in isolation. Local governments should routinely inventory vacant properties throughout the city to assess possible patterns within neighborhoods and among property owners. 22 Such inventories also can provide a list for possible investors.

- **Stage Three: Rehabilitation resources.** After stabilizing the site, cities often provide property owners with a wide variety of resources to encourage them to rehabilitate eligible vacant properties:

Financial resources: CDBG funds, rehabilitation loans, tax credits, tax abatements, waiver of municipal liens.

Technical assistance: permit streamlining, flexible rehabilitation codes, referrals to private sector consultants and contractors, coordination with nonprofits and other local agencies.

Community Development Corporations (CDCs): Several cities have formed special development corporations that provide neighborhoods in need with a wide array of housing and community services. CDCs are ideal partners for cities to enlist in their campaigns against vacant properties. In some cases, the CDCs can take on the responsibility of property management or even purchase vacant properties.

- **Stage Four: Property transfer or demolition.** With certain problem properties and complex cases, a city may pursue demolition or force the transfer of the vacant property. Local governments have somewhat limited legal authority to demolish or involuntarily transfer private property. Consequently, cities must strictly adhere to the requisite legal procedures. Cities generally view demolition and property transfer as last resorts and would prefer to work with the existing owner to perform the necessary repairs and rehabilitation. However, in some cases (such as where the property is structurally unsound or the city cannot find a competent property owner or manager), demolition or transfer may become the only viable option to stop further neighborhood blight.

- **Stage Five: Long-term revitalization policies and prevention programs.** Beyond the abatement and rehabilitation of individual vacant properties, cities should integrate vacant properties initiatives with relevant community-wide revitalization efforts (e.g., affordable housing at the local and regional levels, jobs and economic development, safe and healthy neighborhoods) and long-term land-use and growth management planning (infill development, smart growth, mixed use, and community design). Instead of working one vacant property at a time, cities could achieve greater neighborhood stability through these traditional planning strategies. Vacant property prevention programs present the best hope of permanently addressing the problem of vacant properties. Unfortunately, few cities have sufficient resources to design and implement such programs in a meaningful way. Prevention can take many different shapes. A few cities have used community groups to inventory potential vacant properties or have applied geographic information

system (GIS) technology to track critical properties that could become vacant soon.²¹

The Cycle illustrates the essential steps for creating a holistic approach/program to revitalizing vacant properties and the process that individual properties and neighborhoods experience on their path from decay to revitalization. Local government entities can use the Cycle as a diagnostic tool to evaluate vacant property programs. The model starts with prevention and proceeds through long-range planning and infill development. In Practice, many cities spend most of their energies and resources stuck in the stabilization stage. The recommendations from the Vacant Properties Roundtable, however, prove that rehabilitation and infill development should be the focus.

Brownfields Abatement/Remediation

Across the nation, contamination from decades of industrial activity has left many historic industrial buildings with hazardous materials in their soil or in the buildings. Due to their industrial use prior to the passage of hazardous substances regulations, many historic factories and warehouses are contaminated.²² This contamination can pose public health risks, if left unabated, and can leave a community blighted if the industrial sites are left abandoned. This problem is prevalent in urban areas where many properties, in locations prime for redevelopment, are vacant due to their status as brownfields. Thus, the presence of contamination can present significant barriers to the adaptive reuse of historic industrial buildings both in terms of added costs and time. The added challenge of meeting remediation standards while also meeting the Secretary of the Interior's Standards for Rehabilitation, if attempting to qualify for tax credit certification, or local review, if the building is listed as an individual landmark or part of a locally listed historic district, can make such a project difficult. What happens, for example, when a contaminated object is considered an integral, character-defining feature in conjunction with the Secretary's Standards. Increased research into the role of historic preservation in brownfields reuse and remediation is long overdue.²³ According to the Environmental Protection Agency, brownfields sites are "abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination."

The location of contaminants and hazardous materials in historic industrial buildings can be predicted to some degree, although they should be assessed on a case-by-case basis. The interiors of most historic industrial buildings will contain asbestos, lead-based paint, and other heavy metals. Asbestos typically can be found in insulation around pipes, ducts, wires, floor tiles, plaster, and other objects, while lead is found in old pipes, glass, paint, and other surfaces. Asbestos, known for its fire-resistance, was installed between the 1920s and 1970s.²⁴ Lead, on the other hand, known for its durability and resistance to changes in humidity, is found in plumbing systems

²¹ Joseph Schilling, "The Revitalization of Vacant Properties: Where Broken Windows Meet Smart Growth," (2002b) International City/County Management Association, 21-22 (available at www.icma.org/vacantproperties), 4.

²² Paulus, 1.

²³ Paulus, 1.

²⁴ Paulus, 3.

installed before 1930.²⁵ Old machinery can cause a problem if it needs to be removed. Dumping of contaminants most likely took place some distance from the industrial buildings and often at the same location.²⁶

New remediation techniques can alleviate such problems, including methods which are sensitive to historic fabric. Contaminated architectural features and objects can be encapsulated so that they can be preserved *in situ*. Alternatives include the removal of contaminated items or their enclosure within new construction. Encapsulation and enclosure are the least expensive and least detrimental to the integrity of the building.²⁷ In addition, remediation specialists with equity backing, who use their financial strength to secure sites at reasonable prices, can offer former and future owners of contaminated sites some. Established strategies to bring brownfield sites back into productive use, include (1) Major environmental cleanup and decontamination; (2) Legal work to limit liability; and (3) Replanning and assembling workable sites for new uses.²⁸ An environmental assessment should be performed to identify and determine the nature and extent of any hazardous building materials or environmental contaminants. This process can be a costly and time-consuming effort, but there are methods to help make this more efficient and effective. Reduce liability by thoroughly researching past uses. Federal law requires that past and present owners of a contaminated site may be liable for its cleanup. Concern over the liabilities associated with toxic and hazardous materials is especially relevant for conversions of historic industrial buildings.

Noncompliance with the Comprehensive Emergency Response Compensation and Liability Act of 1980, often called “Superfund,” can cause legal problems. Amendments to Superfund and the Reauthorization Act of 1986 (SARA) have increased the amount of federal funds available for cleanup. The Federal EPA Brownfields Office and regional offices are a valuable source of information on brownfields sites and sources of funding, such as grants and loans to aid in the cleanup process. Most federal and state brownfields programs offer market-based incentives and limitations on liability to spur brownfields redevelopment.²⁹ In certain situations there may be local assistance to help with cleanup costs.

Case Study: EPA Brownfields Program Funding Opportunities

The EPA’s Brownfields Program, started in 1995, empowers states, communities and other stakeholders to prevent, assess, safety remediate, and reuse brownfields. The program offers financial and technical assistance for revitalization, assessment, and cleanup. A Revolving Loan Fund has capitalized approximately 60 loans to facilitate cleanup.³⁰ In addition, cleanup grants provide funding, up to \$200,000 per site, for a grant recipient to carry out cleanup activities at brownfield sites.³¹ These funds may

²⁵ Paulus, 3.

²⁶ Paulus, 2.

²⁷ Paulus, 3.

²⁸ Lambda Alpha International, “Baltimore 2000: A Year Later, Part 2 - Urban Development Review,” <http://www.lai.org/go/library/publications/Baltimore2.html> (accessed April 30, 2005).

²⁹ Mabbett, n.p.

³⁰ U.S. Environmental Protection Agency, “Brownfields Cleanup Grants,” http://www.epa.gov/brownfields/cleanup_grants.htm (accessed May 8, 2005).

³¹ U.S. Environmental Protection Agency, “Brownfields Cleanup Grants,” http://www.epa.gov/brownfields/cleanup_grants.htm (accessed May 8, 2005).

be used to address sites contaminated by petroleum and hazardous substances, pollutants, or contaminants. Cleanup grants require a match equaling 20 percent of the amount of the funding, which may be in the form of a contribution of money, labor, material, or services. A cleanup grant applicant may request a waiver of the 20 percent cost share requirement based on hardship. An applicant must own the site for which it is requesting funding at time of application or demonstrate the ability to acquire title. The performance period for these grants is two years.

In August 1997, the federal government established a Brownfields Tax Incentive Program, under the Taxpayer Relief Act. This program allows costs for environmental cleanups on properties, meeting certain land use and contamination qualifications, to be claimed as fully deductible business expenses in the year in which the costs were incurred or paid. Currently, expenditures are eligible only through December 31, 2005, but this date might be extended.

Case Study: Massachusetts Brownfields Act

In 1998 the Massachusetts Governor and legislature signed a law creating financial incentives and liability relief for parties undertaking brownfields cleanup projects. Known as the Brownfields Act, this law provides state agencies with \$50 million to administer programs targeted towards the cleanup and reuse of contaminated property. The Act provides liability relief and financial incentives to attract new uses to these properties, while ensuring that the state's environmental standards are met. The Governor's Office for Brownfields Revitalization (OBR), established in June 1999, offers assistance, in the form of newly created tools and programs, to help in the redevelopment of brownfields.

Examples of statewide programs created as a result of the Brownfields Act include the Brownfield Redevelopment Access to Capital (BRAC) Fund, which supports private sector loans to subsidize liability insurance for redevelopment projects; the Brownfields Redevelopment Fund (BRF), which provides extensive loans and grants, ranging from \$50,000 to \$2 million, to both the public and private sectors to fund site assessment and cleanup at eligible sites; and the Brownfields Tax Credit Program, which provides a 25 to 50 percent tax credit for cleanups performed in designated Economic Development Areas.³² The Act also funds liability protection and outreach efforts.

Zoning Codes

Zoning codes often act as regulatory barriers to the adaptive reuse of historic industrial buildings. The power for a local jurisdiction to zone is derived from state enabling legislation, the primary goal of which is to promote healthy, safety, morals, or the general welfare. Zoning achieves these goals by separating uses into districts on a zoning map. Accompanying text typically accompanies the map and dictates minimum standards for each district, such as use, height, setbacks, parking requirements, bulk, lot sizes, density, and various other characteristics. The separation of uses was a real health issue when industry was still common in urbanized areas. Indeed, it was a relevant issue in the 1920s when the state enabling acts were

³² Mabbett, n.p.

created and in 1926 when the U.S. Supreme Court upheld the constitutionality of zoning as a crucial part of the police power in the case *Village of Euclid, Ohio, v. Ambler Realty Company*. Prior to the widespread use of zoning, many industrial companies constructed their factories and mills near existing residential areas or provided housing so that workers would live near work. Today, little noxious industry is located in or near residential districts and there is less of a pressing need to restrict incompatible uses. In many jurisdictions, local pressure to keep zoning codes, which can be exclusionary, is based upon the code's ability to protect property values. The underlying zoning of many jurisdictions, however, still does not allow residential or commercial uses in industrial buildings. Most zoning codes disallow mixed uses. In fact, it could take a major study to determine if a new use is compatible with existing zoning. Many zoning codes have been amended numerous times and are difficult to interpret. A variance is thus often required in order to change the use of an industrial building. There are costs and lengthy time periods associated with this administrative process. In addition, public review is typically triggered by an application for a variance, and this could introduce an added layer of meetings.

Solutions to circumvent the regulatory barriers associated with zoning codes, include the creation of mixed use zones, special preservation districts, form-based codes, or zoning review procedures for reuse.

Best Practices: Form-Based Codes

A form-based code (FBC) is an alternative zoning mechanism, which focuses on form, rather than use, and pays particular attention to how a building envelope addresses the street. The recent use of codes to guide development began with the development of codes for neotraditional communities in the late 1980s and early 1990s. The New Urbanist designers of Seaside, Florida, for example, created a code to guide development of the subdivision. In the past few years, attention has been placed on the use of form-based codes as a revitalization tool to guide infill development in existing urban areas and inner suburbs. A municipality can incorporate a form-based code into their regulatory framework in three ways - to modify the existing code to include criteria from the FBC, to replace the existing zoning with a FBC, or to adopt the FBC as an overlay to the existing zoning. There are few examples of form-based codes in areas with existing historic industrial buildings, but the code could incentivize the rehabilitation of buildings by offering density bonuses for historic preservation or making it a mandatory part of the FBC, depending upon the regulatory framework of the specific state. Removing the elements of traditional zoning which separate uses, require setbacks and parking standards eliminates the need for developers to procure special use permits and waivers and would alter the lengthy and costly pre-development administrative process. Replacing existing zoning with a form-based code is one way of achieving a clearer and more flexible administrative and development process.

Best Practices: Transfer of Development Rights

In urban areas, especially with development pressure, historic buildings can be threatened by economic forces. Property rights proponents advocate the demolition of historic structures if it allows a property to be redeveloped to its "highest and best use." A "Transfer of Development Rights" (TDR) program can help make the

development process more financially equitable. A TDR program allows owners of buildings in zoning districts where more intense development is permitted to sell that development potential to owners of other sites. Used in combination with a local historic preservation ordinance, such a program aims to encourage development while also protect their ordinance from litigation. Of course, a TDR program does not prevent all takings claims, and a local jurisdiction should be prepared to defend their program and historic preservation ordinance. The City of Denver has a transfer of development rights program for specific zoning districts in its downtown, where an owner can transfer the unused portion of allowable floor area ratio to another site in the same zone. Buildings located in the Lower Downtown (LoDo) area, which consists of numerous historic warehouse and industrial buildings, are eligible for the TDR program due to their placement in the Lower Downtown B-7 zone.

Building Codes

Complying with building codes is probably one of the most challenging aspects of an adaptive reuse project. Standard building codes, intended primarily for new construction, have few exceptions for existing buildings and thus act as a disincentive for rehabilitation.³³ Codes consist of building codes, which regulate design and construction of buildings, while maintenance and use codes regulate the use of an operating building. In most cases, historic buildings were constructed prior to the enactment of a building code and thus are probably not in full compliance. A code, for example, most likely requires more space for fire-proof stairwells and egresses than exists. Compliance with Americans with Disabilities Act (ADA) requirements has greater flexibility for existing structure, but it still requires longer lead times and costly alterations to a historic structure, which often are not compatible with its historic character. Often the minimum buildings standards in a code are restrictive to adaptive reuse, while at times a code goes so far as to impede rehab. Such strict codes actually go so far as to force a developer to demolish an existing building, so that a building can be constructed from scratch.³⁴ In some cases, variances or waivers might be an option to get out of certain building code requirements. It is important to engage in conversations with local authorities early on in the project.

Recently the Building Officials and Code Administrators (BOCA) and the International Conference of Building Officials (ICBO) included amendments to their model codes, the basis for many states' building codes, to allow for alternative code solutions on historic preservation projects. The inclusion of this language acts as a variance for historic preservation projects and replaces the formal filing process. "Smart codes," however, are a more flexible and predictable alternative to conventional building codes. "Smart codes" is the term used to describe building and construction codes that encourage the alteration and reuse of existing buildings.³⁵ They replace both building and maintenance and use codes with a code geared toward existing and historic buildings. They allow a state to reduce regulatory complexity and can encourage the redevelopment of existing buildings. Local governments also have the power to adopt more flexible code requirements. Recent studies have found that adopting a rehabilitation code can cut costs for historic rehabilitation by up to 50

³³ Arigoni, 25.

³⁴ Paulus, 4.

³⁵ Building Technologies Inc., 3.

percent.³⁶

Case Study: California Historical Building Code

The California Historical Building Code (CHBC), formerly the State Historical Building Code, is to protect California's architectural heritage by recognizing the unique construction problems inherent to historic buildings. Passed in 1976, it is the first of its kind in the country. The CHBC is an alternative code with building regulations and standards tailored specifically to the rehabilitation, preservation, restoration, relocation or change of occupancy of designated historic buildings. The CHBC aims to preserve original architectural elements and encourage cost-effective rehabilitation while also providing building safety. The CHBC achieves these goals by giving owners flexibility in finding economical methods

The performance-oriented CHBC gives property owners flexibility to find economical methods to restore and retain integrity the building's historic features. To be eligible for the alternate code, a building must be listed in the National Register of Historic Places or contribute to a National Register Historic District, or be locally designated. All new work is expected to meet the Secretary of the Interior's Standards for the Rehabilitation of Historic Properties. If any new construction is part of the adaptive reuse design, it must conform to the state's regular code.

Case Study: New Jersey State Rehabilitation Code

The most significant recent reform in the regulation of work in existing buildings happened in New Jersey with the adoption of the New Jersey Uniform Construction Code—Rehabilitation Subcode on January 5, 1998, by the Department of Community Affairs (DCA). New Jersey became the first state with a comprehensive code with the goal of assisting the rehabilitation of existing buildings. The subcode aims to encourage the redevelopment of existing buildings into housing.³⁷ A chapter, dedicated to historic buildings, outlines greater flexibility for historic structures so that they can more easily meet the Secretary of the Interior's Standards for Rehabilitation. The subcode is based upon the notion that historic buildings do not need to imitate new construction in every detail in order to be safe and accessible.³⁸ A significant aspect of the subcode, relevant to adaptive reuse, is the language on changes in use. Under the old code, any change of use required full code compliance for the entire structure, the subcode evaluates the actual increase or decrease in hazard of the new use to create requirements. In addition, the subcode broadens the definition of historic building and thus allows more historic buildings to qualify for the subcode, by including buildings eligible, both identified and not yet identified, for the National Register in addition to those already listed individually or as part of a historic district.

Due to its balanced and predictable requirements, New Jersey's subcode significantly reduces the cost and administrative obstacles associated with rehabbing the state's older buildings. During the code's first year, rehabilitation work in New Jersey's five

³⁶ Leinberger, 11.

³⁷ "New Jersey Rehab Subcode," National Trust for Historic Preservation Solutions Database, October 2, 1998, <http://forum.nationaltrust.org> (accessed May 4, 2005).

³⁸ Leinberger, 11.

largest cities increased by 60 percent – with the vast majority of projects in Newark. Surely influenced by the success of New Jersey’s subcode, the state of Maryland and city of Wilmington have created similar alternative codes.

Case Study: City of Los Angeles Adaptive Reuse Ordinance

In 1999, the City of Los Angeles adopted landmark legislation to encourage the conversion of the downtown's mostly historic office buildings into lofts, apartments, and hotels. The legislation applies to non-residential buildings, including industrial buildings. The ARO is applicable to the reuse of historically designated buildings, both local and national landmarks. Attention is also paid to existing industrial uses. The ordinance notes that uses surroundings a propose adaptive reuse site will not be detrimental to the safety and welfare of future residents and that a reuse project will not displace existing industrial uses.

The Adaptive Reuse Ordinance's mission was revitalize downtown’s cultural resources to attract residents and visitors who would bring vitality to the urban core, while addressing the City's housing crisis. The Adaptive Reuse Ordinance works by significantly reducing the time required to obtain a building permit. Changing an industrial or a commercial building to a new residential use would normally require compliance with numerous rules and regulations. The ordinance works by cutting through this red tape. The advantage has been significant, enabling the City to leverage an extraordinary amount of private sector investment with a minimum of public subsidy. The provisions streamline the application process and provide significantly more flexibility in meeting building code and zoning requirements. Many non-compliant site conditions (including building height, parking, floor area and setbacks) are permitted without requiring a variance. Residential density requirements are also waived.

A great deal of the housing boom associated with downtown Los Angeles is the result of the progressive Adaptive Reuse Ordinance (ARO) passed in 1999 and revised in 2002. Roughly half of the 2,850 new residential units finished between 1999 and 2004 are conversions encouraged by the ordinance.³⁹ Encouraged by the success in downtown, the City expanded the Adaptive Reuse Ordinance to cover the historic suburbs of Hollywood, Chinatown, Lincoln Heights, and Wilshire Center business districts. New adaptive reuse projects in these areas are already in the works. Effective on December 1, 2003, the ordinance was expanded citywide, providing a streamlined process for revitalizing neighborhoods and providing much needed housing throughout the City of Los Angeles.

One of the first projects under the ARO was the conversion of three manufacturing buildings into Santee Court. At the beginning of the twentieth century, Michael J. Connell developed the first garment manufacturing buildings in an area that became and is still known as downtown’s Fashion District. Designed by architects Arthur Angel and Carl Leonard, the three buildings, adapted into 165 loft-style apartments, 20 percent of which are affordable, were constructed between 1911 and 1912. All three buildings are locally designated as historic monuments. MJW Investments’ conversion of the buildings in Santee Court, the first phase of downtown’s largest adaptive reuse

³⁹ Berton, 27.

project, includes a rooftop garden, a basketball court, and a swimming pool. The buildings are connected by a landscaped, pedestrian promenade (complete with outdoor tables and chairs) that was originally a service alley. The promenade is anchored by Rite Aid, and also features a Subway eatery, and other retail tenants will include a market and a food court.

Design

Incorporating new uses within a historic framework can be complex.⁴⁰ The low ceiling heights of many mills and factories, constructed in the late nineteenth century, make them functionally obsolete for industrial and several new uses today. In addition, the placement of columns every eight to ten feet in many buildings can cause a design challenge. Concrete slab floors can be difficult to reconfigure. Old wiring and plumbing will likely need to be removed. Features, such as the roof and windows, can often be repaired rather than replaced. The windows of many mill buildings, however, were altered in the 1950s when windows were bricked in and air conditioning installed in an effort to control separation and shrinkage of textile thread due to humidity and dryness.⁴¹ The addition of extra stories to the exterior can often be problematic if the project is undergoing design review. Solutions include building an addition that is not visible from the ground, although this depends upon the building's roof type. Some large complexes can be difficult to adapt since it might have too much space and too many structural problems. In some rare instances, the adaptive reuse of an older industrial building may not be feasible due to unworkable structural problems or other factors. In addition, there can be concern over how to determine circulation and accessibility.⁴²

The occasions where the adaptive reuse of an industrial building is avoided are rare; instead, there are many design opportunities associated with such projects. Factories, and especially mill buildings, are highly adaptable. Their short spans, masonry construction, ornate detailing, and large windows results in naturally lit interiors with unique features. Overall, the vernacular craftsmanship of historic industrial buildings is of a higher quality than most current construction. Due to the large machinery in the buildings, the floors were designed to withhold loads of 100 to 200 pounds per square foot.⁴³ Many wall and floor surfaces are already left exposed, which can save costs if that is part of the design aesthetic.⁴⁴ Foregoing the excavation and construction of a new foundation, can save money and prevent that risk.⁴⁵

In any adaptive reuse project, there is a great need for a detailed analysis to determine the building's opportunities and constraints for finding a viable new use. The building's adaptive capacity can be determined by conducting a thorough analysis of the buildings and its structure.⁴⁶ A historic preservation engineer or architect could conduct such an investigation. In addition, it is important to undertake studies to develop appropriate architectural solution or design alternatives for difficult design

⁴⁰ Austin, 82.

⁴¹ Bergsman, 80.

⁴² Bergsman, 80.

⁴³ Austin, 111.

⁴⁴ Paulus, 4.

⁴⁵ Paulus, 4.

⁴⁶ Austin, 49.

challenges.⁴⁷ If an addition is being added to the historic resource, it should be distinguishable from the original building. There are conflicting theories over whether the addition should be contextual and be harmonious with the old in scale, proportion, materials, or if the addition should be of its day and representative of current trends in architectural design.

Best Practices: Design Guidelines and Handbooks

Design guidelines provide a set of criteria to guide any proposed changes to landmarks or historic districts in a jurisdiction. The goal of design guidelines is to protect the visual qualities of the historic district or neighborhood and preserve its historic character. The guidelines do not forbid changes; instead, they present owners with alternatives and suggestions for various types of rehabilitation. Typically, guidelines call for the retention of distinguishing features, serve as a guide for new construction in a historic district, encourage repair and reversibility of new materials, as well as protect additions with significance on their own. Most often, a local preservation commission administers and reviews design guidelines. The existence of guidelines allows the local jurisdiction to simplify the review process and ensure the developers know in advance the requirements of the guidelines. By following the standard's set forth in the guidelines, the projects are more likely to gain faster approval.

Case Study: Lower Downtown Historic District Design Guidelines, Denver, CO

The Lower Downtown portion of Denver, located at the confluence of Cherry Creek and the South Platte River, emerged as the manufacturing and warehouse center of the city in the 1870s when the railroads caused a building boom in the city. Following World War II, with changes in manufacturing, the decline of the railroads, and the construction of federal highways through the city, the Lower Downtown (LoDo) area stopped booming. In the 1970s, during the oil boom, several buildings were renovated into office use but few preservation efforts started until the late 1970s and early 1980s. To spur redevelopment of the Lower Downtown area, the city changed its zoning from I-1 (industrial) to B-7 (mixed use). Two minor alterations made the incentives package very enticing by the 1980s. In 1982, the B-7 provided a density bonus for the preservation of historic buildings. In 1988, the city again modified the B-7 district and created the Lower Downtown Historic District and Lower Downtown Design and Demolition Review Board. The historic district encompasses a 29-block area of turn-of-the-century brick warehouses and industrial buildings.

The resulting design guidelines address the buildings types found in the LoDo district, which include shopfronts, factory/warehouse, and commercial. The general consensus in public meetings and interviews was that Lower Downtown's historic buildings and traditional character must be preserved. The majority believes that new buildings should not be allowed to overwhelm or change the existing historic character of the District.⁴⁸ As the LoDo area continues to change by adaptive reuse and infill development, the guidelines call out design features evocative of the district's architectural character for new buildings on once-vacant parking lots and underutilized sites. A coalition consisting of the City of Denver, Lower Downtown

⁴⁷ Austin, 82.

⁴⁸ LoDo Denver, *Lower Downtown Neighborhood Plan*, August 28, 2000, HP-5, http://www.lodo.org/neighborhood_plan_pg2.htm, accessed May 9, 2005).

Development, inc., Historic Denver hired the design firm Goody Clancy to prepare the design guidelines as well as a new vision for LoDo. The ultimate goal of the guidelines is to preserve LoDo's unique historic character while also guiding development in the flourishing arts districts and strong housing market.

Best Practices: Green Adaptive Reuse

There is a great opportunity to extend the sustainable practice of adaptive reuse by preserving energy and resources through green design. Currently, sustainable design is most widely publicized for its applications to new construction. It is, however, an important strategy for adaptive reuse. Increasingly, practitioners are combining sustainable design with adaptive reuse of historic buildings creating the field of green adaptive reuse. This combination makes sense since the premise of adaptive reuse is more sustainable than greenfield development since the infrastructure and materials are already in place.

In 2001, the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program introduced a pilot to create guidelines for documenting sustainable design practices for existing buildings. The rating system is point based and upon review a building submitted certification is given one of four ratings: general, silver, gold, or platinum. If attempting to gain LEED certification, it is imperative to hire a consultant to guide the design team and supervise the recordation necessary as part of the extensive LEED application process. In addition, decide if LEED certification will be a goal of the sustainable adaptive reuse at the beginning of the project because backtracking through records and translating them into the lengthy documentation necessary for certification can be a daunting task.⁴⁹ In addition, it is important to see if the local jurisdiction has a sustainable development agency or policy. Many cities, including Chicago, Portland, Seattle, and Austin, have policies supportive of sustainable design.

Further research and advocacy is needed to develop guidelines to meet LEED certification and mitigate any contaminants while respecting the architectural integrity of the historic resource. Combined guidelines for the green adaptive reuse of historic industrial buildings would greatly streamline this process.

Case Study: Jean Vollum Natural Capital Center, Portland, OR

Portland, Oregon's Jean Vollum Natural Capital Center is a notable example of green adaptive reuse. The project is "reflective of the renewed emphasis in the U.S. toward energy and resource conservation."⁵⁰ The \$12.5 million renovation of an historic warehouse into a mixed-use office and retail building opened in September 2001 in the city's booming Pearl District. The area north of downtown Portland, which has undergone a remarkable transformation in recent years, once stood as a deteriorating district of rail yards and warehouses. Built in 1895, the two-story warehouse appealed to Ecotrust, the owner and redeveloper of the site, due to its location in the Pearl District, its proximity to bike trails and transit, and the 70,000 square feet of space in an existing, historic building. Ecotrust is a local nonprofit organization with a mission to build a conservation economy from Alaska to Northern

⁴⁹ Flynn, 42.

⁵⁰ Flynn, 39.

California based on the coast's rain forest, so it comes as no surprise that they would want to build sustainably.

Ecotrust hired Holst Architecture as the designer and Green Building Services, an environmental design consultant, to complete the LEED certification process. During the project's renovation in 2000-01, the LEED certification program was not yet an industry standard, so Ecotrust applied for the certification retroactively. They had decided at the beginning that the building would follow sustainable design practices, so they easily qualified, but it was difficult applying at the end of the construction process due to administration and cost.⁵¹ In January 2002, the Vollum Center became the first building in the west to be certified with a LEED gold rating.

Sustainable practices included water and energy conservation, recycling of materials, and foremost the reuse of an existing structure. The historic, brick-and-timber warehouse was not in great condition; in fact, in portions it was suffering from settling, dry rot, and was in great need of seismic reinforcement. Due to the existing conditions and Holst's design of an exposed interior, the seismic and structural challenges proved to be most expensive part of the project totaling about \$2 million.⁵² Fortunately, Ecotrust remained dedicated to the building.

Holst focused the sustainable design portion of the adaptive reuse project on four areas: social equity, water, light, and air. A large atrium and other public spaces are open to the public. Photocell sensors adjust interior lighting and light from the skylit atrium and skylights provides daylight to the interior. The construction team recycled a very high 98 percent of debris and, thus, far outdid the 75 percent required to get maximum points from LEED. The reuse included the construction of a 10,000 square-foot addition, containing a 3,000 square-foot roof terrace with an open-air deck and a 7,000 square-foot eco roof built from salvaged timber. The stormwater runoff reduction system consists of the eco roof and bioswales, which are plant-filled drainage ditches. The native, drought-resistant plants filter runoff from the building and parking lot and reclaims 95 percent of the runoff.⁵³ The completed center has 17 retail, office, and nonprofit tenants, all with a social equity and environmental focus. Ecotrust has its offices there also and conducts weekly tours of the building.

Ecotrust did not pursue historic tax credits and instead altered the west façade with new fenestration. If better guidelines were in place combining LEED requirements and the Secretary of the Interior's Standards for Rehabilitation, they might have taken advantage of the tax credits.

Historic Preservation

The National Register of Historic Places, administered by the National Park Service, is the official Federal list of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture. A property is only listed in the National Register with owner consent for an individual listing and at least 50 percent support for a historic district. In addition to the prestige and associated property value increases, listing in the National Register provides limited

⁵¹ Flynn, 42.

⁵² Flynn, 44.

⁵³ Flynn, 46.

protection from the adverse effects of federally funded, licensed, or assisted projects and allows the owners of income-producing properties to apply for state and federal rehabilitation tax credits.

Designation as a local landmark or as a contributing building in a local historic district provides greater protection than federal designation. Local preservation ordinances protect historic resources through a preservation commission or review board, which supervises and grants permission to build additions, new buildings, or major alterations to a building's exterior. Inclusion in a local district does not restrict routine maintenance. Many local ordinances often grant owners a set period of time with a freeze on property tax assessment.

In many instances, properties listed in the National Register are automatically included in the corresponding state register. State listing can also result in eligibility for rehabilitation tax credits and a freeze of property tax assessment after a substantial rehabilitation. Many states also have environmental review processes for historic resources listed in or eligible for the State Register undergoing a state-funded or licensed project.

The design review associated with many local preservation ordinances is viewed by many as a regulatory barrier to redevelopment. In addition, to qualify for the state and federal rehabilitation tax credits, a project must comply with the Secretary of the Interior's Standards for Rehabilitation. Instead of viewing these requirements as hindrances, developers should view historic preservation as a process to ensure that the historic character of the building or complex is preserved for future generations. Indeed, it is the tax credit review process which allows the federal government to ensure that the historical integrity of significant buildings is not lost as a result of rehabilitation. Extensive guidance is offered by both local, state, and federal offices to guide preservation and tax credit projects through the process. Hiring a preservation architect or preservation consultant can also significantly reduce problems and complications.

The Secretary of the Interior's Standards for Rehabilitation are ten basic principles created to help preserve the distinctive character of a historic building and its site, while allowing for reasonable change to meet new needs. Rehabilitation projects must meet the following Standards to qualify as "certified rehabilitations" eligible for the 20 percent rehabilitation tax credit. The Standards apply to both the exterior and the interior of historic buildings and include related landscape features as well as additions and new construction. It should be noted that the Standards are interpreted with economic and technical feasibility issues considered on a case-by-case basis. The Standards are as follows:

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.⁵⁴

A meeting should be scheduled before formal application is made to the city for a building permit or development review. Early project review often results in the resolution of design issues which can save valuable time once the project is submitted to the city. Finally, if the project's design will not qualify for the tax credits, it is important to note that the resource will retain its listing in the National Register of Historic Places unless the building is drastically altered, so that it no longer retains its significance or integrity. A locally listed building, however, requires design review no matter what. An investigation into historical significance of a building is critical and allows the team to know what the character-defining features are in order to comply with design review.

Many developers believe that the regulations associated with historic preservation

⁵⁴ National Park Service, Heritage Preservation Services, "The Secretary of the Interior's Standards for Rehabilitation," <http://www.cr.nps.gov/hps/tps/tax/rehabstandards.htm> (accessed May 8, 2005).

make working with a historic building more difficult.⁵⁵ Yet the process does not have to be a barrier. Design approval and tax credit certification do add extra costs to a project, but the result is a marketable historic resource with authentic materials that more often than not add value to the final product. Indeed, many developers, investors, and owners believe that the resulting product is far superior to new construction and thus worth the wait and risk for added expenses.⁵⁶

Best Practices: Inventories

Inventories can be powerful preservation tool for vacant or underutilized industrial buildings. They can reveal potential developments to for-profit and nonprofit developers. A development boom can often threaten industrial buildings if there is pressure for large new buildings, such as condominium projects, hotels, or convention centers. In response to increased development pressure, a city or nonprofit organization can ameliorate the threat by conducting a comprehensive citywide industrial inventory to bring attention to the decreasing number of industrial buildings and opportunities for reuse. Such an inventory could also highlight industrial properties which have already been adaptively reused.

In 2001, Gerald Ingalls, director of Public Policy at the University of North Carolina at Charlotte, conducted an inventory of mills in the Charlotte metropolitan area. Research showed that 118 mills were constructed between 1880 and 1930 and that only 16 had been demolished since then.⁵⁷ Ingalls found that many continued to have an industrial use. Due to their location in the revitalizing north end of Charlotte, several buildings have been redeveloped into a variety of projects, including office, commercial, retail, and housing uses.

The Rhode Island Historical Preservation and Heritage Commission, the state's agency for historic preservation and heritage programs, co-sponsored a survey of Providence's industrial sites, with the Providence Preservation Society.

Case Study: Providence Mill Revitalization Initiative

In 2000, demolition threats to Eagle Square, a prominent nineteenth-century mill complex in Providence, spurred advocacy groups to urge for the protection of the city's industrial resources. City officials responded by establishing a mill preservation program meant to diminish the threat to old mill buildings. A new landmark designation—the Industrial and Commercial Buildings District (ICBD)—protected historic industrial buildings built before 1960. It was the first such non-contiguous thematic local historic district in the country, and afforded the mills a new set of protections.

All buildings listed in the ICBD are granted an automatic live/work zoning variance and are eligible for a tax abatement program, which stabilizes property taxes for 10 years after the redevelopment of a mill property. Developers also could pursue the 20 percent federal rehabilitation tax credit in combination with Rhode Island's 30 percent state historic preservation tax credit. Numerous mill buildings have been adapted into

⁵⁵ Bookout, 317.

⁵⁶ Bookout, 318.

⁵⁷ Bergsman, 67.

mixed-use projects as a result of the economic incentives and protective measures.⁵⁸

Most of the conversions have been into market-rate or upscale housing, which produces sizable property-tax revenue for the city. It does, however, mean that the small businesses, craftspeople, and artisans being forced out of the mills will be driven away from the city in search of cheap rents. Can the incentives be altered to redirect the development pressure or mandate a certain percentage of affordable work space and residential space in each new project?

Administration & Community Support

The success of many adaptive reuse projects can result in revitalization of a block or neighborhood. This is often more noticeable for reuse projects in distressed districts. In such instances, the industrial buildings could have been a source of blight and the reuse is welcomed by the general public. At a certain point, however, the success of a revitalizing area causes displacement, whether it be of artists or small industries using the industrial buildings or of residents living in nearby houses, and this is viewed unfavorably by many. Other concerns the public might have in response to the adaptive reuse of a historic industrial building include congestion and parking, as well as contamination. It is important to notify the public about the project early on its planning stages to get public buy-in and assess the neighborhood's support. This can be achieved by holding public meetings and charrettes. Another way to engage the public is to invite key members from the community, perhaps from neighborhood associations and local businesses, to serve on a task force to help guide the adaptive reuse of a particularly important building within a community.

Case Study: Pullman Factory Task Force, Chicago, IL

In June 1999, Governor George H. Ryan and Mayor Richard M. Daley announced the creation of a task force to lead the community process for the stabilization of the Pullman railroad car factory damaged by arson in 1998. Pullman, an early planned industrial town located near Chicago, was constructed in the 1880s on the Illinois Central Railroad as the home of the Pullman railroad car factory and surrounding residences. The Pullman Factory Task Force included Pullman residents, historic preservationists, economic development specialists, and civic and government leaders.⁵⁹ Their goals were to produce an interim report on the stabilization of the former factory, find a future use for the building, and secure funding sources. Governor Ryan subsequently granted \$10 million in Illinois FIRST funds to continue the stabilization work on the factory and clock tower.

Economics/Finance

According to the Advisory Council report, adaptive reuse is not always cheaper than new construction, but it typically falls within the same range making it a feasible and

⁵⁸ "Providence Mill Revitalization Initiative," National Trust for Historic Preservation Solutions Database, September 28, 2003, <http://forum.nationaltrust.org>, accessed May 4, 2005).

⁵⁹ "Governor Ryan and Mayor Daley Announce the formation of Pullman Factory Task Force," press release, June 25, 1999, <http://www.illinois.gov/PressReleases/ShowPressRelease.cfm?SubjectID=1&RecNum=307> (accessed May 9, 2005).

more sustainable alternative.⁶⁰ If the building is located in a distressed area then the building and land might be very inexpensive, but it may be difficult to secure lending and there might be little market demand for the completed project. Obviously the more common exception is when a project costs far more than new construction, such as when unexpected costs arise. In fact, many developers recommend budgeting a large contingency expense for both architectural and construction costs in case there are any unforeseen structural or contamination problems.⁶¹ Many lenders require at least 10 to 15 percent of the total construction costs as a contingency fund for unintended expenses.⁶²

In some real estate markets, industrial buildings are not in great demand; as a result, they present a tremendous opportunity for redevelopment. In such a setting, abandoned industrial buildings can be purchased at prices substantially below replacement cost. The low acquisition costs, combined with available incentives and credits, can result in lease prices competitive with traditional office or industrial space or sales or rental prices the same or lower than residential market rates. While deteriorated industrial buildings are available at a lower acquisition cost in some markets, in most cases they are priced for their development potential. Typically, construction costs are less for adaptive reuse, but the process is very labor intensive and takes longer than new construction.⁶³

Even when an adaptive reuse project costs more than new construction, there is an added value since the building could serve as a catalyst for revitalization efforts and the creation of new jobs, preserves a historic resource, which is a public good, and promotes sustainable development practices. In *Historic Preservation: Curatorial Management of the Built World*, James Marston Fitch points out that the adaptive reuse of historic buildings “is more economic” not only in terms of the “conservation of the energy represented by the built environment,” but also for the “relative costs of old and new built space.”⁶⁴ Without any structural problems, a conversion can cost the same as comparable new development.⁶⁵ There is a significantly higher quality of building materials and ornamentation associated with historic industrial buildings, however, that is not found in current new construction.

In the past, many developers avoided historic preservation and adaptive reuse projects for fears of cost overruns, lack of qualified labor, and concern over unexpected problems associated with historic buildings.⁶⁶ The growing number of examples and heightened concern for smart growth planning and sustainability have made adaptive reuse a more accepted tool - both financially and socially. Currently, adaptive reuse is particularly appealing due to low mortgage interest rates, the increased demand for housing in urban areas, and the trendiness of living in industrial spaces.

Financial incentives make it easier to redevelop industrial buildings, especially large complexes, many of which have sat vacant for several decades. It is important to

⁶⁰ Advisory Council on Historic Preservation, *Adaptive Use: A Survey of the Construction Costs*, Washington, D.C., vol. 4, no. 4, June 1976. Cited in Fitch, 183.

⁶¹ Bilsky, 25.

⁶² Bookout, 327.

⁶³ Austin, viii.

⁶⁴ Fitch, 169.

⁶⁵ Duell, 24.

⁶⁶ Lawrence E. Reiner, *How to Recycle Old Buildings* (New York: McGraw-Hill), 9.

generate a mix of financing. Since adaptive reuse projects often acts as catalysts for future redevelopment—encouraging both financial and social investment—there is an incentive for local jurisdictions to subsidize such projects. There is a strong need for public subsidization. There are two types of public subsidy—direct subsidization which includes public monies in form of grants and indirect subsidization, such as preferred tax treatment. Gap financing, bridging the gap between what the private sector was support with public subsidies and monies, frequently makes the difference between a successful adaptive reuse project and the building remaining vacant. Local tools used to bridge the gap include payments in lieu of taxes (PILOTS), tax increment financing (TIF), revolving funds, and other creative financing approaches.

Tax Exemptions, permitted under state law but typically administered on local level, are granted for projects in areas where local jurisdictions want to guide future development and growth. While traditionally tax exemptions have been granted wholly to new construction, they remain a viable tool by which to encourage adaptive reuse. Tax incremental financing is a useful and powerful tool, which local governments can employ to offer developers incentives. The provision of capital improvements, such as street lights, street furniture, sidewalks, landscaping, parks, and other improvements, by a local jurisdiction is an important incentive to encourage adaptive reuse.

In addition, it is important to engage the private sector through tax credits, both through the federal rehabilitation tax credits, state tax credits, and the Low-Income Housing Tax Credits.

Best Practices: Federal and State Rehabilitation Tax Credits

Historic preservation tax credits play a significant role in making the redevelopment of historic industrial buildings feasible. Since redevelopment can cost more than new development, federal and state tax credits close the gap.⁶⁷ As a tool, tax credits are praised for their economic impact. They promote reinvestment in existing areas rather than greenfield sites and protect historic resources. While the design requirements necessary to qualify for historic tax credits are viewed by some as a regulatory barrier, tax credits provide key financial incentives which make rehabilitation projects viable. Importantly, federal and state tax credits allow developers to raise equity by leveraging the tax credits to convince lenders to provide conventional financing.⁶⁸

Tax credits, while they do not cover the cost of rehabilitation, provide much-needed financial incentives for historic preservation. Historic Preservation Tax Incentives are available for income-producing buildings that are National Historic Landmarks, listed in the National Register of Historic Places, or contribute to a National Register historic district and certain local historic districts. Buildings eligible for the National Register may apply for listing as part of the tax credit process. The project must meet the U.S. Department of Interior Standards for Rehabilitation. In addition to commercial and multifamily housing, industrial buildings qualify for the tax credits. Historic tax credits allow for a credit of 20 percent of the total cost and expenses of rehabilitation provided the costs exceed 50 percent of the total basis in the property. Acceptable

⁶⁷ Bergsman, 67.

⁶⁸ Gose, 38.

hard costs include rehabilitation expenses and qualified soft costs are architectural and engineering fees, site survey fees, and legal expenses. In general, every dollar of tax credit reduces the amount of tax owed by one dollar. Every dollar of tax deduction reduces the amount of tax owed by a fraction of a dollar equal to the taxpayer's tax rate. Building owners must hold the structure for five years following the completion of the rehabilitation or pay back the credit.

Federal tax credit incentives to encourage the preservation of historic buildings were first authorized by the Tax Reform Act of 1976. The first federal credits, reauthorized and improved by the Economic Recovery Tax Act of 1981, offered a rehabilitation tax credit of up to twenty-five percent depending on the building's age and its eligibility for listing in the National Register of Historic Places.⁶⁹ The 1986 Tax Reform Act decreased the maximum credit from twenty-five to twenty percent, limited the credit a taxpayer could use each year to \$7,000, and established a maximum income limit for users of the credits. Federal rehabilitation tax credits are, however, an important revitalization tool and a valuable financial incentive for adaptive reuse projects. In spite of the increased restrictions, tax credits have proven to be effective tools for making the prospect of rehabbing a historic building more financially attractive to developers and owners. The purpose of tax credits is to "induce owners to preserve and rehabilitate older properties rather than raze them. An incidental but important outcome is the stimulation of investment that would not otherwise occur because of the physical configuration of buildings and sites that are functionally obsolescent."⁷⁰

Best Practices: State Historical Tax Credits

State historic preservation tax credits are very similar to the federal program, although often they do not have the restrictions of the property being income producing. In addition, the state credit can total up to 25 percent of the rehabilitation costs. Generally a bank buys the credits at the beginning of a large project but is not able to use them until certification is granted and the project is completed. Some states require that the credits be sold to a corporation while others allow individual property owners to claim them against their own tax liability.

In 2002, 24 states had state tax credit programs in existence and several other states were drafting programs.⁷¹ With state budgets in difficult times in recent years, there have been threats to the funding of several state tax credit programs (MD for example). The removal of a state tax credit program would have a significantly detrimental effect on rehabilitation and adaptive reuse projects.⁷²

Case Study: Maryland State Tax Credit Program

Maryland is an example of an early state tax credit program, first introduced in 1975. The Maryland Heritage Preservation Tax Credit Program, administered by the Maryland Historic Trust, provides eligible owners with an income tax credit equal to 25 percent

⁶⁹ The National Register of Historic Places is administered by the National Park Service, in conjunction with the relevant State Historic Preservation Officer, which for Maryland is the Maryland Historical Trust.

⁷⁰ Arthur C. Nelson and Janice Talley, "Revitalizing Minority Commercial Areas Through Commercial Historic District Designation," *Journal of Urban Affairs* 13.2 (1991): 222.

⁷¹ Gose, 38.

⁷² Gose, 40.

of the qualified costs expended on the rehabilitation.⁷³ To be eligible, the building must be listed in the National Register of Historic Places as either an individual landmark or as part of an historic district, be a local landmark or a contributing building in a local historic district, or be a contributing building located in a certified heritage area. The restoration must conform to the Secretary of the Interior's Standards for Rehabilitation and must be certified by the Maryland Historical Trust. Maryland also has a local property tax abatement option that allows for a 10-year freeze. A tax abatement decreases or delays the taxes due on a given property over a fixed period of time by either reducing the percentage of taxes due or applying a lower tax rate than normal.⁷⁴

Many cities also have local preservation tax credits or loans available for rehabilitation efforts of listed buildings. The Baltimore City Property Tax Credit Program, for example, is a valuable tool for revitalization efforts. The program keeps assessed tax of renovated or rehabilitated property at the same level as it was before start of renovation for the following ten years. The credit is for 100 percent of the City tax assessment increase if the rehabilitation of property is certified by the Commission for Historical and Architectural Preservation (CHAP). The rehabilitation cost must exceed twenty-five percent of the pre-rehabilitation cash value of the building. The credit can be used for both income-producing and owner-occupied buildings listed in the National Register and/or designated locally as landmarks or contributing buildings in an historic district. In addition, the City, through the Commission for Historical and Architectural subsidizes some investment opportunities through low interest loans and grants.

Best Practices: Low-Income Housing Tax Credits

The Low-Income Housing Tax Credit rewards property owners for providing low-income rental housing to the community. While not explicitly a preservation incentive, the credit applies to rehabilitation, as well as new construction, and thus can be used in conjunction with the federal and state rehabilitation tax credit programs. The additional tax savings gained by combining multiple tax credit programs can make an affordable housing project feasible. The credit is 4 percent per year for 10 years for each unit involving the 20 percent rehabilitation tax credit, federal subsidies, or tax-exempt bonds, and 9 percent for projects with no other government guarantees or subsidizations, except for Section 8 assistance. Both forms of the credit last for 10 years. At least 40 percent of the units must be for tenants with incomes below 60 percent of the median family income, or 20 percent of the units must be rented to tenants who earn 50 percent or less of the median family income. The LIHTC is only available for the percentage of units conforming to the income restrictions. The tax credit enables low-income housing sponsors and developers to raise project equity through the sale of tax benefits to investors. Most credits are sold to corporate or individual investors through public or private syndication.

Case Study: Rhode Island Mill, Eden, NC

⁷³ Maryland's tax credit program was started in 1975 and it originally allowed taxpayers to deduct 100 percent of the rehabilitation amount from their state income tax returns over a five-year period. There was no minimum expenditure and no limit to the amount of the amortization basis.

⁷⁴ Morris, 4.

The Rhode Island Mill, historically the main employer in Eden, North Carolina, closed in 2001. The mill made blankets for 50 years and then for the last 50 years of its industrial life served as a warehouse. As a result, it was structurally sound and had only seen minor alterations. Raleigh-based Gould & Associates viewed the 102,000 square-foot building as a structure worth saving. The asbestos and lead paint, found throughout the building, did not scare them away. Amenities, such as the mill's location overlooking the Smith River, made it an attractive property. Gould & Associates did, however, face the prospect of the lack of demand for market-rate multifamily housing in Eden, so providing affordable housing served a real need in the community.

With various tax credits, the project became viable.⁷⁵ Ultimately, the project was funded by federal historic preservation tax credits, North Carolina historic preservation tax credits, Low-Income Housing Tax Credits, and North Carolina affordable housing credits. This totaled 80 percent equity investment from the credits. The mill was adapted into 64 affordable units and all were rented within one year. A 4,500 square foot commercial space was later converted to a preschool. The city of Eden played an active role in the project—rezoning the land and granting a special use permit to convert the mill into a multifamily residential use. Ultimately, the project had a positive effect upon the neighborhood and the town. A \$1,250,000 grant enabled the town to rehab the surrounding neighborhood and build upon the revitalization started by the Rhode Island Mill Apartments project.

Best Practices: HUD's 221(d) Market Rate Program

Through the 221(d) Market Rate program the Federal Housing Administration (FHA) insures mortgages for the new construction or substantial rehabilitation of multifamily rental properties. Nonprofit and cooperative sponsors use Section 221(d)(3); for-profit sponsors use Section 221(d)(4). The purposes of Section 221(d)(3) and Section 221(d)(4) are basically the same. Both programs assist private industry in the construction or rehabilitation of multifamily rental and cooperative housing for low- to moderate-income and displaced families by making capital more readily available and by reducing the risk of default for lenders.

The project sponsor must make early contact with the HUD State/Field Office Multifamily Housing staff to determine if there is a clear market demand in the area of the proposed housing, if the project will be sound economically, and if project financing is secure. Prospective project sponsors are responsible for finding a HUD-approved lender to make a loan and submit an application for mortgage insurance commitment to the HUD State/Area Office. Only for-profit, nonprofit, and limited partnership sponsors of eligible affordable rental projects may apply for FHA mortgage insurance under this program.

Case Study: Fulton Cotton Mill Lofts, Cabbagetown, GA

The Fulton Cotton Mill Lofts, located about one mile east of downtown Atlanta in Cabbagetown, is a large-scale adaptive reuse of a cotton mill into a mix of market-rate and affordable units. The mill operated from 1881 to 1968 in a 12.8-acre site

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adjacent to its worker housing in the company-owned village known as Cabbagetown. The mill abandoned the site in 1977 and thus a great deal of deterioration was discovered when the adaptive reuse project started in the mid 1990s and so only 70 percent of the buildings were retained. The site's nine industrial buildings and associated village are listed in the National Register of Historic Places. The Fulton Cotton Mill Associates formed in 1996 to redevelop the site. Aderhold Properties, Inc., a developer well-practiced in the adaptive reuse of historic industrial buildings, undertook the project in two phases. The first phase was completed in 1998 and the second in 2000. The oldest building, constructed in 1881, could not be rehabilitated and ended up in a ruinous state. Aderhold decided to retain the walls as a sculptural form to enclose the outdoor swimming pool.

Aderhold did have difficulties securing funding since no commercial banks would fund the reuse. Aderhold was, however, astute enough to apply for the HUD 221 (d) 4 and this source of funding allowed the project to move forward. Of the two phases - the first phase was funded by HUD, city, local government interest groups, and the private sector. The first phase produced 206 housing units, 86 of which are affordable due to the use of Low Income Housing Tax Credits. The second phase of 298 market-rate units, completed in 2000, qualified for more conventional funding since it built upon the success of the first phase. With 504 units, the Fulton Cotton Mill Lofts are the largest loft apartment complex in the country.⁷⁶ In addition to serving as the new offices for Aderhold Properties, the conversion spurred new developed and job opportunities in Cabbagetown and increased the supply of ⁷⁷affordable housing in a close-in, gentrifying area of Atlanta.⁷⁸

Best Practices: Historic Preservation Revolving Funds

A revolving fund, a popular and successful historic preservation tool, can aid in the revitalization of residential communities. A revolving fund is a pool of monies used by a non-profit organization or a governmental agency to buy and sell or help others to buy and restore or renovate historic properties. The monies could also aid in the homeowner in the rehabilitation of the building. Any proceeds from sales, loan repayments, or donations are used to replenish the revolving fund pool. There are several revolving fund techniques and which one to use should be selected in order to best meet the needs of the particular historic community.

Case Study: Providence Preservation Society Revolving Fund

The Providence Preservation Society's Revolving Fund, for example, restores endangered properties in the city's National Register-listed neighborhoods for sale to low- and moderate-income buyers and provides low-interest rehabilitation loans to low-income homeowners. The Society also has innovatively used federal funds to aid in their revitalization efforts and to close financing gap between rehabilitation costs and what the market will bear - namely, Community Development Block Grants from HUD in conjunction with funding from the Rhode Island State Historic Preservation

⁷⁶ "Fulton Cotton Mill Lofts, Cabbagetown, Georgia," National Trust for Historic Preservation Solutions Database, October 19, 2000, <http://forum.nationaltrust.org> (accessed May 4, 2005).

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⁷⁸ "Fulton Cotton Mill Lofts, Cabbagetown, Georgia," National Trust for Historic Preservation Solutions Database, October 19, 2000, <http://forum.nationaltrust.org> (accessed May 4, 2005).

Office and private donations, as well as HOME and HOPE funds due to their HUD-designation as a Certified Housing Development Organization.

The Monohasset Mill Project, LLC, an adaptive reuse of a historic mill complex into subsidized and market-rate live/work condominiums, has established a working relationship with the Providence Preservation Society Revolving Fund to assist in maintaining the vision of this project. The primary role of the Revolving Fund has been to secure and administer the HOME Funds necessary for the subsidized component of this project. The PPSRF will also have a permanent role in supervising any future resale or transfer of the subsidized units and to help ensure compliance to the resale restrictions. The Revolving Fund is also involved in rehabilitation design oversight, State Historic Tax Credit compliance, and the fiscal responsibility of the construction and operating budget of the project.

Best Practices: Real Estate Investment Trusts

A real estate investment trust (REITs) is similar to a mutual fund in that it allows investors to pool funds for participation in real estate ownership or financing. REITs are required by law to distribute 90 percent of its annual income to shareholders or to reinvest the capital to improve its portfolio. Investors contribute capital to the trust and in return receive a return on their capital through payment of dividends and an increase in equity as the company grows.

Case Study: Madison Park REIT

Madison Park REIT is a real estate development company whose capital structure is in the form of a real estate investment trust. Madison Park REIT specializes in adaptive reuse of historic industrial buildings into live/work lofts and mixed-use projects. Most of Madison Park's projects are industrial buildings surrounded by residential and commercial properties, rather than industrial districts. As a result, local jurisdictions and residents are supportive of the non-conforming property's new use. Most of the REIT's properties are eligible for listing in the National Register of Historic Landmarks and they work to have the buildings listed, since the company actively pursues the federal rehabilitation tax credit as a source of equity as part of their financing. Madison Park's approach generates greater returns on investor capital than traditional residential development since they save significantly on construction costs due to the spare aesthetics of their live/work units. In addition, live/work units incur fewer maintenance expenses than traditional apartments, which in turn results in greater cash-flow to Madison Park REIT, and in turn, our investors.

Unique Adaptive Reuse Projects

The following three case studies show the breadth of recent adaptive reuse efforts. All three are focused on promoting the arts or heritage as their core mission, and industrial buildings have helped them achieve their goals. In addition, all three case studies have had a profound impact on their surrounding communities.

Case Study: Artspace Projects, Inc., Minneapolis-St. Paul, MN

Artspace Projects, Inc., is the nation's leading nonprofit real estate developer for the

arts. Created in 1979 as an advocacy group for the space needs of working artists priced out of Minneapolis' Warehouse District, Artspace has been converting buildings into live/work space for artists since 1997. The mission of Artspace Projects is to create, foster and preserve affordable space for artists and arts organizations. Finding affordable live/work space can be a difficult task for artists. They often gravitate to industrial districts, where the well-lit open spaces serve their needs well. The presence of artists in a historic industrial neighborhood often acts as a catalyst for redevelopment. By creating affordable live/work spaces, Artspace is supporting the professional growth and self-sufficiency of artists while also enhancing the cultural and economic life of the surrounding neighborhood. In addition to its role as developer, Artspace achieves its mission through asset management activities, consulting services, and community-building activities that serve artists and arts organizations.

Artspace specifically targets underutilized or vacant historic buildings, many of which formerly served an industrial function.⁷⁹ In its first seven years, the organization created space for over 160 artists.⁸⁰ Artspace owns the buildings and rents them to lease-hold artists' co-operatives. The use of federal and state rehabilitation tax credits is crucial to the financing of Artspace projects. In addition, the organization receives funding from a long list of foundations, corporations, and private individuals, including the Minnesota State Art Board and the National Endowment for the Arts.

In the late 1980s, after searching for a more proactive role in the creation of studios after seeing so many artists displaced, the organization ceased its referral-only service and entered into the role of developer at the request of St. Paul city officials. To create the Northern Warehouse Artists' Cooperative, located in downtown St. Paul's Lowertown neighborhood, Artspace adapted a six-story brick warehouse dating from the early 1900s into 52 live/work units. The Northern units, which range in size from 1,000 to 2,000 square feet, feature high ceilings, exposed brick walls and beams, large windows, and modern kitchens and bathrooms. The cooperative rented out immediately and the building's occupancy rate has never dropped below 100 percent.⁸¹ Listed in the National Register of Historic Places, the 149,000 square-foot project includes two floors of commercial and nonprofit tenants. The Northern, which only cost \$5 million to redevelop, has had a noticeable impact on Lowertown. When it opened in 1990, fewer than 100 people lived in the area while now its population tops 5,000.⁸² Due to the project's success, St. Paul invited Artspace to develop two more live/work buildings in the city, the Frogtown Family Lofts near the State Capitol and the Tilsner Building, a warehouse next door to the Northern.

In the mid-1990s, Artspace Projects looked outside of its region for the challenge of bringing affordable live/work units to artists in other communities. Its first out-of-state project consisted of the conversion of a former Pontiac dealership in Pittsburg into 37 affordable live/work spaces. The organization has completed projects, or

⁷⁹ "Artspace Projects," National Trust for Historic Preservation Solutions Database, <http://forum.nationaltrust.org> (accessed May 4, 2005).

⁸⁰ "Artspace Projects," National Trust for Historic Preservation Solutions Database, <http://forum.nationaltrust.org> (accessed May 4, 2005).

⁸¹ Artspace Projects, Inc., "Project Portfolio," <http://www.artspaceusa.org/about/more.htm> (accessed May 9, 2005).

⁸² Artspace Projects, Inc., "Project Portfolio," <http://www.artspaceusa.org/about/more.htm> (accessed May 9, 2005).

currently has projects underway in the following cities: Duluth, MN; Reno, NV; Pittsburgh, PA; Galveston, TX; Portland, OR; Prince George's County, MD; Chicago, IL; San Francisco, CA; and Seattle, WA. The projects completed, or in development, represent approximately \$60 million worth of property owned (or co-owned) and managed by Artspace.⁸³ They contain more than 500 units of live/work, studio, office, exhibition, and performance space that serve the needs of more than 3,000 artists and arts organizations.⁸⁴ In the last few years, Artspace has further expanded its mission to incorporate the planning and development of performing arts centers, museums, other arts facilities, and entire arts districts throughout the country.

Case Study: Lowell National Historic Park, Lowell, MA

Lowell, Massachusetts, a small industrial city founded 30 miles northwest of Boston in 1826, is an example of the comprehensive redevelopment of the urban industrial core of a mill-town to private use, but with an emphasis on industrial heritage tourism and education. In the late 1970s, a group of Lowell residents fought to preserve their declining city's history after a string of urban renewal projects demolished mill buildings and row houses. A research grant, funded by Dr. Patrick J. Morgan, Lowell's Superintendent of Schools, discovered that Lowell was the nation's first planned industrial community and the first city where mass production of textiles occurred on a large scale.⁸⁵ Due to this national significance, Lowell became the nation's first Heritage State Park in 1974 and a National Historical Park in 1978.

The Lowell National Historical Park (LNHP), created to turn the city into a 'living museum' with federal and state funds, and the city rehabilitated 300 structures in the 1980s and 1990s.⁸⁶ The Lowell Historic Preservation Commission, the former development arm of the LNHP, provided over \$5 million in preservation grants and loans for façade improvements until it closed in 1995. In addition to 13 historic districts listed in the National Register of Historic Places, Lowell has two local architectural and design review districts. The success of Lowell's revitalization as a tourist destination and improved place to live and work is often attributed to the strength of its public-private partnerships, cultural events and education activities, support from the business advocacy organization Lowell Plan, Inc., bankers, and many others. The Tsongas Industrial History Center, named after U.S. Senator Paul Tsongas who was instrumental in creating the National Historical Park, is sited in the Boott Cotton Mills complex in Lowell. The mills operated between 1835 and the 1950s and are now the site of a "hands-on" education and history experience. A partnership between the University of Massachusetts at Lowell Graduate School of Education and the National Historical Park, the history center offers workshops and classroom materials on the life of the famous Lowell "mill girls" and other aspects of the textile-making industry.⁸⁷

⁸³ Artspace Projects, Inc., "All About Artspace," <http://www.artspaceusa.org/about/more.htm> (accessed May 9, 2005).

⁸⁴ Artspace Projects, Inc., "All About Artspace," <http://www.artspaceusa.org/about/more.htm> (accessed May 9, 2005).

⁸⁵ "Lowell National Historical Park, Lowell, Massachusetts," National Trust for Historic Preservation Solutions Database, September 27, 2002, <http://forum.nationaltrust.org> (accessed May 4, 2005).

⁸⁶ "Lowell National Historical Park, Lowell, Massachusetts," National Trust for Historic Preservation Solutions Database, September 27, 2002, <http://forum.nationaltrust.org> (accessed May 4, 2005).

⁸⁷ "Tsongas Industrial History Center, Lowell, Massachusetts," National Trust for Historic Preservation Solutions Database, October 19, 2000, <http://forum.nationaltrust.org> (accessed May 4, 2005).

Case Study: Massachusetts Museum of Contemporary Art (MASS MoCA)

MASS MoCA, which became the largest center for contemporary arts in the United States when it opened in May 1999, is part of a growing trend of the adaptive reuse of historic industrial buildings into contemporary art museums.⁸⁸ The trend of industrial conversions, as they are so named by architectural historian Helen Searing, is so prevalent due the abundance of space and light in industrial buildings, the large size and more industrial nature of much contemporary art, and the use of industrial buildings as artist studios.

The Massachusetts Museum of Contemporary Art (MASS MoCA) opened in May of 1999 with nineteen galleries in five factory buildings and 300,000 square-feet of “mothballed” space.⁸⁹ The large site consists of 26 buildings on 13 acres, constructed primarily between 1872 and 1899 as a dyeworks for Arnold Paint Works, in the small Berkshire town of North Adams, MA. Arnold closed in 1942 due to the Depression and lower textile prices in the southern states, and the electronic-component company Sprague Electrical Company, quickly took over the complex. Sprague closed in 1985, primarily due to rising energy costs, and caused economic depression in North Adams since two thousand employees were out of work. It did not take long for a new use for the site to be envisioned, but it took 14 years for it to be implemented.

In 1986, the Williams College Museum of Art was searching for space to display its contemporary art collection, which was too large for the museum’s conventionally sized galleries. North Adams mayor, John Barrett, III, introduced the museum’s director, Thomas Krens and his assistant Joseph Thompson, to the Marshall Street industrial complex. Immediately, a public/private partnership was formed in 1987 to garner support from the Commonwealth of Massachusetts on the ‘basis of [the complex’s] cultural and historical significance and the museum’s potential for economic revitalization.”⁹⁰ The owner of the site, American Annuity Group, donated the complex and the state issued a bond for \$35 million. The conversion process began in 1988 with a master plan competition; submissions came from world-famous architects, as evidenced in the names of the winning team of Skidmore, Owings & Merrill, Frank Gehry, Robert Venturi, and Bruner/Cott.

Unforeseen problems then began. Funding was drastically scaled back from the initial \$72 million plan of 1987.⁹¹ Citing concern over the state’s poor economy, negative press about government-funded art programs and the likelihood of the museum to serve as a economic revitalization engine, the commonwealth withdrew its \$35 million pledge in 1991. After several years of local fundraising and raising \$1 million from 650 mostly local donors, Republican Governor Weld reassessed the state’s decision, and decided, in 1995, gave the project \$18.6 in matching funds to rehabilitate the complex.⁹² Ultimately, phase I cost \$31.4 million (including \$3 million in contributed

⁸⁸ MASS MoCA, “History of the Site,” <http://www.massmoca.org/about.html#press>, accessed May 9, 2005.

⁸⁹ “Mothballing” is the process of stabilizing and preserving a vacant building to protect it from the weather, arson, and other threats until a new use can be found.

⁹⁰ Trainer, 12.

⁹¹ John Fleischman, “Small-Town Mill, Big-Time Museum,” *Preservation* 51.2 (March/April 1999): 23.

⁹² Jennifer Trainer, ed, *MASS MoCA: From Mill to Museum* (North Adams, MA: MASS MoCA Publications, 2000), 12.

real estate and \$4 million in environmental engineering and feasibility studies). Funding came from several sources, including a \$22 million construction grant from the Commonwealth of Massachusetts, \$9.4 million in private funds for construction support, and \$5.6 million in private contributions for programming and start-up.⁹³ The low construction budget of \$65/square foot was achieved by little rebuilding—proving that it is cheaper to remove features than to build them.⁹⁴ Admissions revenue and fund-raising initiatives fund the museum’s general operating costs and programming efforts.

Instead of pursuing a permanent collection, MASS MoCA adapted to its reduction in funding, by creating a new mission—to form partnerships with museums, collectors, and artists and deciding to act as a platform for collaborative exhibitions and site-specific installations.⁹⁵ Two buildings were demolished in order to create a prominent axis through the complex. The Massachusetts Historical Commission, the state historic preservation office, approved the demolition of Building 3. The red-brick buildings, listed in the National Register of Historic Places and the State Register of Historic Places, were under review of MHC since state monies funded a portion of the project. Even though the team decided to not pursue tax credits, and most likely the removal of floors and columns in many interior spaces might have disqualified the project, the complex has received several historic preservation awards. Indeed, the Cambridge, Massachusetts-based Bruner/Cott, in their design of the complex, masterfully combine historic features with the display needs of a contemporary art museum. The adaptive reuse is very respectful of original features; many galleries have exposed beam ceilings, stained concrete floors, and exposed brick walls with layers of peeling paint. The importance of the buildings and their evocative interiors was recognized early on—the 1988 winning master plan included the mantra, “Love these noble buildings. Honour them; modify and intrude upon them as little as possible inside and out.”⁹⁶

From its inception, the museum and city were in partnership knowing that the museum had the potential to greatly improve the economy of North Adams. In addition to the tourism associated with museum visitorship, MASS MoCA’s phased construction of 60,000 square feet of office space was a key strategy to fuel new jobs in the town. The wired spaces house tenants from the communications and new media industries, artists’ studios, and a black box theater. The museum’s opening in 1999 has created more than 200 jobs in North Adams; unemployment rates dropped to 3.7 percent from 12 percent in 1996.⁹⁷ Properties adjacent to the complex have been renovated or purchased for commercial development, including office space and a hotel.

Lessons Learned

Developers, design professionals, owners, and other team members face many regulatory and financial barriers when undertaking the adaptive reuse of a historic industrial building. Issues range from contamination to historic preservation design review to securing funds to designing a new use. There are, however, countless tools

⁹³ MASS MoCA, “History of the Site,” <http://www.massmoca.org/about.html#press>, accessed May 9, 2005.

⁹⁴ Trainer, 115.

⁹⁵ Trainer, 21.

⁹⁶ Jillian Burt and Michael Wise, “Museum as Multinational,” *Blueprint 71* (October 1990): 48.

⁹⁷ MASS MoCA, “Economic Impact,” May 19, 2000, http://www.massmoca.org/press_releases/background/Economic_Impact.html, accessed May 9, 2005.

and incentives available to aid the adaptive reuse field, and increasingly they are geared specifically to aiding the growing industrial conversion movement. Lessons can also be learned from the countless case studies, which reveal innovative financing schemes and unique design approaches. The adaptive reuse process will continue to evolve and become less regulated as innovations become more mainstream and the reuse of buildings becomes a more integral component of smart growth and revitalization strategies. The seeds have been planted and it is only a matter of time before the aesthetic, historic, revitalizing, and sustainable advantages of adaptive reuse are truly valued and favored.

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