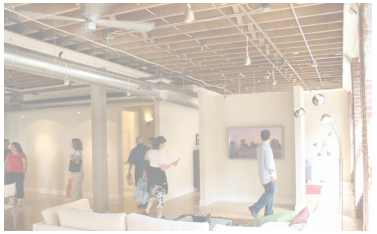
vacancy to vibrancy

sustainable housing through preservation

city of st. louis

Francis G. Slay, Mayor
Planning & Urban Design Agency

August 07



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sustainable housing through preservation

The growth of cities is the biggest challenge facing governments in the 21st century. As Mayor's, we have a responsibility to meet the challenge and create opportunities for growth that is sustainable.

Housing is the key to a sustainable urban environment. In the former industrial heartland of the United States, centre cities have suffered through decade's long collapse. As people left for suburbs or jobs in the emerging new growth areas of the south and southwest, thousands of homes and buildings were abandoned or demolished.

After fifty years of decline, vacant and dilapidated buildings were St. Louis' legacy. However, what was once a liability is now an opportunity to meet a growing demand for housing. As a former industrial powerhouse, St. Louis was built of brick and stone. The urban landscape has one of the finest inventories of historic buildings in the country.

City government has worked with state and federal officials to create an environment for the private sector to take the lead in creating both market rate and affordable housing through investment in historic buildings.

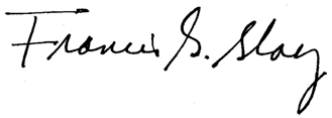
Vacant shoe factories, warehouses and two hospitals have been converted into new homes for thousands of residents. Neighborhoods are designated as historic districts and the homes are eligible for tax incentives to lower the cost of restoration. Historic preservation has proven to be the catalyst for the resurgence in the inner city housing market.

Recycling aging buildings is key to a healthy urban environment. In the United States an additional 127 million people are expected by 2050. The rapid increase in housing demand presents a challenge to create an approach to housing that is sustainable.

The resources and energy consumed in building new housing from the ground up are considerable. Reusing buildings offers a large sustainability gain that can and should be a primary housing goal for all governments. The ripple effect on the environment can be considerable.

I believe the City of St. Louis strategy "Sustainable Housing Through Preservation" can encourage Mayor's in the world's industrialized cities to meet the growing demand for housing by recycling our existing built heritage.

Thank you to the World Leadership Forum for considering our entry in the "Housing" category.



Mayor Francis G. Slay
City of St. Louis, Missouri

contents

overview

Sprawl and the growing demand for housing are two of the top issues facing the United States. Over the past 50 years the St. Louis metro area has expanded dramatically into adjacent farmland. From 1982 to 1997, 204 sq. miles (52,838 hc) of farmland was plowed under for low density, single family housing.

From 1982 to 87, for each new resident, 0.49 acres (0.2 hc) was consumed. That rate tripled to 1.4 acres (0.57 hc) from 1992 to 97.

The region experienced a 25% increase in the urbanized area, yet population growth was only 6 %. The region ranks 18th in population in the country, but second in land consumption. Land consumption occurred four times faster than our population growth.

Nationally the numbers are similar. Over 19 million new housing units were built between 1985 and 2001 and 40% of these were on lots greater than one acre in size. If the trend continues, in the next 30 years, land area equal to the size of Colorado will be consumed.

advantages of recycling buildings

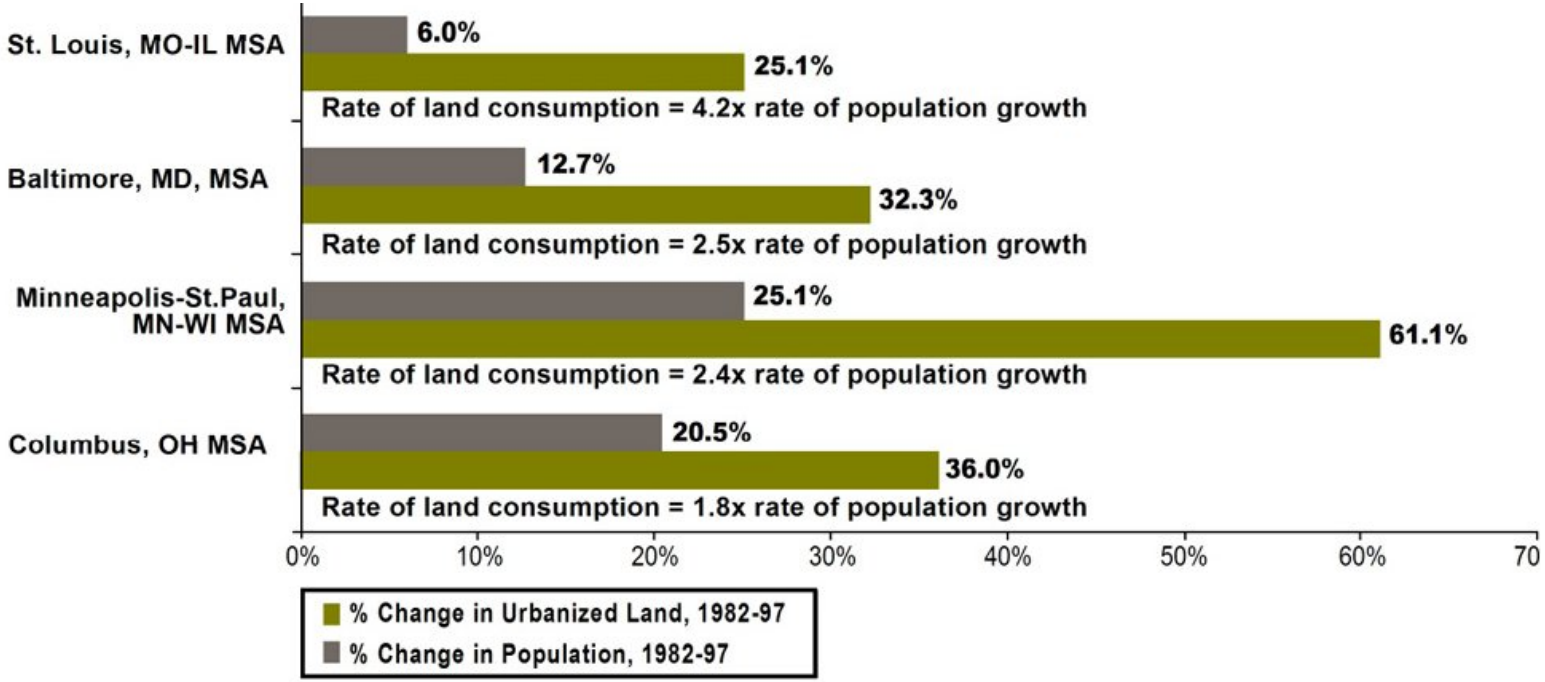
- *reduction in the demand for building materials that deplete natural resources, such as wood and the energy required to manufacture steel*
- *increased utilization of existing infrastructure: sewers, roads, transit, etc. which releases funds for other public objectives*
- *minimizing the carbon footprint of the residents by increasing population densities*
- *providing for an aging population - the number of people over 65 in the U.S. is expected to double by 2030, requiring 25 million new units*

source – Brookings Institute, Growth in the Heartland

This pattern is an unsustainable housing model, especially when the inner city presents so much vacant and underutilized land that is already serviced. While St. Louis is only one jurisdiction out of 201 in the metro area, as the centre city we offer the potential for reversing wasteful land and resource consumption.

St. Louis is recycling historic properties to meet our housing demand. Our program for assisting in the reconstruction and reuse of historic properties is a sustainable model for housing production.

The St. Louis metropolitan area urbanized land at four times the rate of population growth over the last two decades – significantly more inefficiently than its peers – Fulton – " Who Sprawls Most"



v i s i o n

Recycling buildings should be a cornerstone in the urban global warming vision. Recycling enhances the sustainability of our cities; reduces the demand for raw materials; lowers pollution levels; and brings new housing to the market faster and more efficiently

10th St. Lofts – St. Louis warehouse conversion

60 million of the residential units that will exist in the U.S. in 2030 will have been added after 2000. Recycling buildings to account for a maximum share of these units is critical. Industrialized cities around the globe can impact "where and how efficiently we live" by making such an effort – vacant warehouse conversion – St. Louis

background

72% of the buildings in St. Louis are over 50 years old. These brick structures have survived the loss of 60% of the city's population, 508,000 people, who left from 1955 to 2000. The current population is equal to what existed in 1870. The City experienced the largest percentage population drop in the country at 10,200 people per year. Over 86,000 housing units were lost, equal to 33% of the city total.

In 2000, 5.5% of the buildings in the city were vacant. Over the past six years the city reduced this number by 11.5% through demolitions and restoration. The majority of the buildings torn down were irreparable after decades of neglect. The demand for city housing had dried up.

Areas of the city were abandoned during the exodus of population – 1436 Munroe St. before

Restoring these properties has resulted in several thousand new units of housing – 1436 Munroe after restoration

In 2001, Mayor Slay aggressively began to package development incentives to capture the value of these vacant historic buildings. The Mayor realized the potential to create a unique living environment to attract new residents while enhancing the sustainability of the region.

The results have been widely recognized as one of the biggest turnarounds in centre city fortunes in the country ■

Impact of recycling buildings in the downtown

- ***4,221 new housing units in historic building conversions***
- ***over $1.3 billion in residential building permit values for new units through historic conversion***
- ***13,654 city residents living in rehabbed and converted buildings***
- ***80 new businesses related to the population growth downtown***
- ***an 88% increase in property value assessments***
- ***over 20,000 units have been rehabbed since 2000***

source –st. louis planning agency

judging criteria

quality of leadership displayed

The St. Louis metro region is the 18th largest in the U.S. The region is made up of over 201 different municipal boundaries. Each competes to gain the same residents, businesses and jobs. Stripped bare through decades of decline and movement to the suburbs, the city needed to identify resources that could form the cornerstone for a resurgence.

Mayor Slay has developed a team that in seven years, reversed decades of population decline; stopped the exodus of businesses and jobs; created growth in city revenues; and provided new market rate and affordable housing. The turnaround came through the marketing of vacant historic buildings, which had become the symbol of the City's decline.

St. Louis has received recognition for its efforts on several fronts

- ***winner of the 2006 World Leadership Award for Urban Renewal***
- ***recipient of the President's award for historic preservation***
- ***Partners for Livable Communities award***

difficulties/obstacles overcome

Several decades passed while St. Louis struggled to deal with a 60% population loss. Only 62 square miles (16,058 hc) in area, resources were scarce to continue to provide services. Retail trade disappeared, a major factor in the U.S. as cities impose sales taxes to create revenue.

Crime rates were quoted among the worst in the country; the population was aging; fewer students attended school; and major manufacturers like McDonnell Douglas disappeared. The city became land owner of 16% of the lots, as owners simply walked away, leaving unpaid taxes and a large decline in city revenue. There was no value for real estate and the city could not find takers for the large inventory of properties. Buildings from houses to large warehouses were assumed by the city.

The market for city living is now thriving with an occupancy rate for dwelling units in converted buildings of over 90% (*source – Downtown Partnership*) . Nobody imagined the success of converting hundreds of historic buildings into housing.

Competition for city owned lots is heating up. Builders are designating more historic properties in anticipation of converting additional buildings to residential uses.

The City, led by the Mayor, has developed a working relationship with the once skeptical financial community, private sector and buyers, to create an industry that excels at producing sustainable housing in historic buildings. The big asset the city had, the same which was the sign of decline for decades, vacant buildings, was turned into a positive.

investing in infrastructure

Cities must strategically invest in infrastructure to show the private sector government is taking an active role – Washington Ave – St. Louis – mostly vacant 7 years ago, all of these buildings were converted into housing with retail

degree of inspiration to others

In 1904 St. Louis hosted the Olympic Games, the World's Fair, and was the 4th largest city in America. One hundred years later the City's population is what it was in the 1870's. We are a second tier city in a region struggling to attract new residents and investors. We lack proximity to a mega city or region on which to "pick up the scraps" to foster growth.

Industrial cities around the world, are suffering similar issues. For example, this years' census in Ireland shows large population gains. However, major cities like Dublin and Cork continue to shrink in the inner core, while the suburbs grow.

Any success in St. Louis is home grown. Built on the tools we have at hand, packaged to bring people to the table.

Our message to other cities facing "deindustrialization" pressures and sprawl, is to take stock of your assets; be realistic in what you can achieve; and be innovative in packaging available resources

sustainability

The most important factor in sustainability is using what already exists. Building new buildings consumes more energy, while retrofitting old buildings can achieve comparable or higher operational efficiency. Sustainability is evaluated under three categories: fiscal; social; and environmental. Reusing existing buildings offers high scores in all three.

sustainable advantages of building recycling

social	environmental	economic
• creates a unique living environment for re-populating the city for market & affordable housing • suited to meet future demands created by changing demographics • higher population densities brings more social opportunities	• reduces sprawl • lower environmental costs by using existing buildings rather than building new; reuse has a higher "embodied value" • minimal waste sent to landfills • reduced construction, traffic, dust, & noise • reduced "carbon footprint" as residents live closer to work, transit, services & amenities • buildings are remediated of environmental issues like lead & asbestos	• cost advantages of reusing existing buildings • faster "on line" time than new construction • high job creation multiplier effect • increased city tax base • reduced demand for new infrastructure by using "what is already there" • increased economies of scale for existing infrastructure by increasing population density • potential for reduced energy cost for older buildings with sustainable building materials

The buildings being reused in St. Louis have high "embodied energy" values given they are mostly timber, concrete and bricks, all materials using low amounts of energy to produce. This value increases considerably as the life of a building goes beyond 50 years. With 72% of the buildings in the city over 50 years of age, there are real potential energy savings.

Newer buildings with higher steel content have low embodied value given the high levels of energy used in producing the building products.

We are building a "Sustainability Evaluation Checklist" based upon the table shown. The checklist allows builders to evaluate their project against criteria intended to enhance the sustainability of their building program. This draft matrix is in the Appendix.

impact of changing demographics

The next 30 years will see rapid changes in the demographics of the industrialized nations. The population shift in age cohorts will be unlike any in history with huge growth in the number of seniors. The reuse of historic buildings is well suited to meeting the changing housing demands.

In the U.S., traditional dual parent households with children will make up only one household in five. This change is a dramatic turnaround from the present. The demand for smaller living spaces with little maintenance and shared amenities will increase.

These are big changes for a country where the average house size grew from 1,500 square feet (139 m2) in 1970 to over 2,200 square feet (204 m2) in 2000 (San Francisco Chronicle, 5/13/07). St. Louis is already using sustainable historic conversions to meet this change

shifting national demographics in the U.S. seniors population in the next 30 years

- ***101% increase in persons aged 65 to 74 yrs.***
- ***117% increase in persons aged 75 – 84 yrs.***
- ***55% increase in person 85+ years***

source – U.S. Census Bureau

senior's housing

35% of the new residents in downtown lofts are over the age of 50 yrs.

implementation

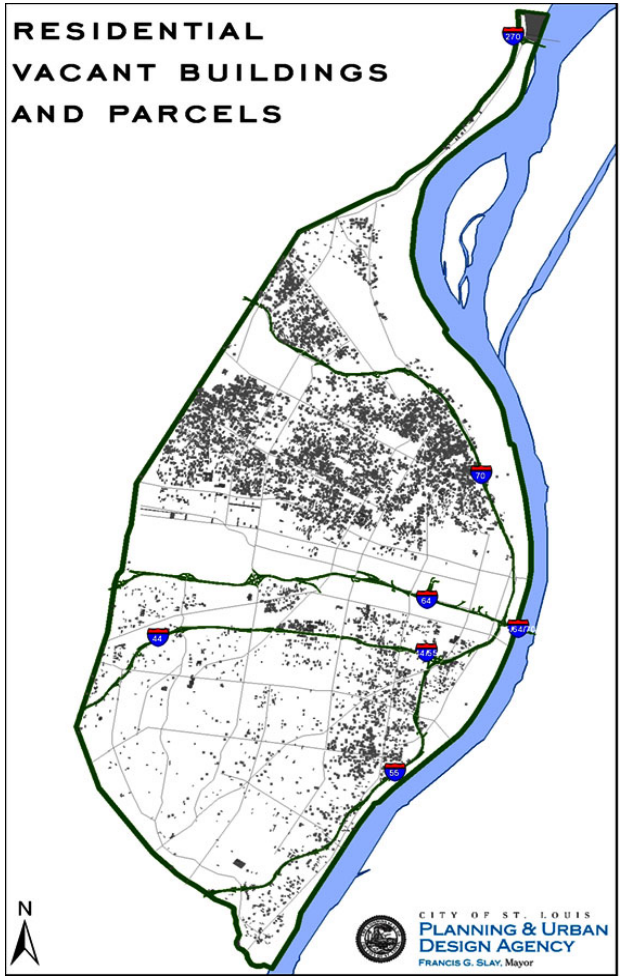
Both the federal and state governments provide programs geared to reusing historic buildings. St. Louis has been one of the most successful cities using these programs.

Matching government programs with our land inventory and the spirit of small developers, has revived the city housing market and established an industry revolving around restoration.

building on our assets

- ***large supply of vacant buildings and vacant residential lots = 15.5% of the city land area – 9.6 sq. miles(2,486 hc)***
- ***government programs***
- ***incentives***
- ***private sector partners***
- ***neighborhood activism***

Vacant former school built in the 1890s that will be converted into seniors apartments



defining the vision

In 1999 the City developed a strategy for rebuilding the downtown, the centre to the regions 2.7 million people. The resulting Downtown Development Action Plan set out key benchmarks for achieving a vibrant urban economy.

The goal was to rebuild the residential marketplace. Downtown offered the largest supply of historic buildings anywhere in the United States between Chicago and the west coast. It is this asset that has been the key to a sustainable housing strategy for the city.

national advantages of inner city conversions for new housing

- ***over 40% of the people live within four miles of where they work (25% for houses built after 1950)***
- ***70% of these neighborhoods have a school (40% in new neighborhoods)***
- ***60% of households have access to public transit (25% in new areas)***
- ***70% of resale's are less than $150,000***

source - the American Housing Survey, Dept. of Housing & Urban Development

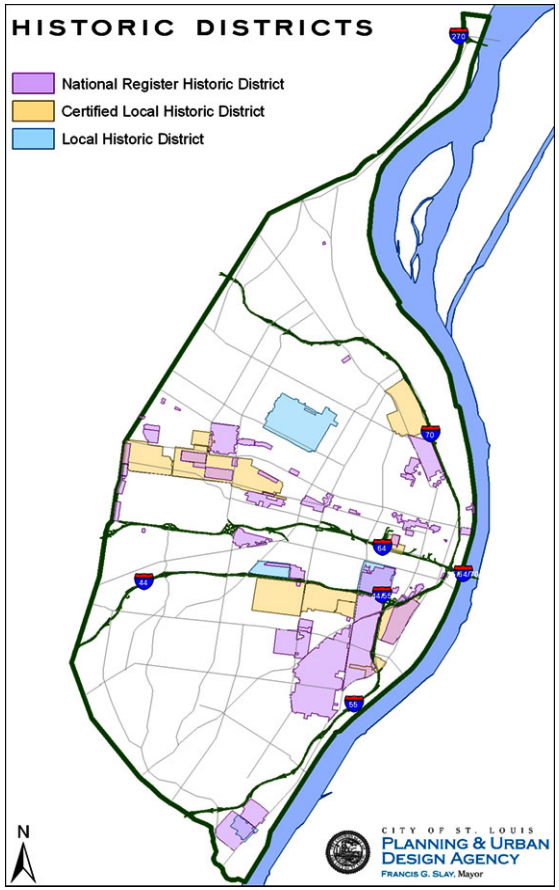
historic districts

The City has a high percentage of buildings 19% (21,209), within designated historic districts and continues to expand the inventory. These buildings are eligible to receive historic tax credits for rehabilitation.

There has not been a new multi unit residential building built in downtown St. Louis (2.2 square miles (570 hc)) since 1970. However, since 1999, 56 historic buildings were converted into residential / mixed uses, resulting in 4,221 new housing units. There are more units under construction and in development.

In other historic neighborhoods, additional units are being created or restored for new residents.

By increasing the number of properties with historic designation, more property owners can use historic tax credits. Tax credits make up the gap in revenue that would have made these restorations uneconomical.



The City also requires the review of proposed demolitions in the historic districts to ensure the decision to demolish is made for the right reasons.

housing production in historic buildings

downtown
- ***4,221 new units in 56 historic buildings***
- ***23 historic buildings in construction totaling another 1,905 units***
- ***27 historic conversions in development adding another 1,237 units***

citywide
- ***1,654 single family house rehabs***
- ***19,289 multi unit rehabs***

source – st. louis planning agency

historic tax credits

Federal and State historic tax credits are a major factor in rebuilding the centre city housing market. The credits provide tax breaks in exchange for restoring historic properties. The owners, who are assigned the credits, sell them to companies like banks, seeking to lower their state and federal tax liability. The developer uses the funds raised to finance the project, reducing the costs.

The amount of the credit is based on a percentage of the restoration costs. For the federal program the credit equals 20% of the costs but has the restriction the property must produce income for five years. This means the residential component must be rental for five years.

In the state of Missouri, the state historic tax credit is worth 25% of restoration costs with no restriction on selling the units as condominiums. Both the federal and state credits can be used on the same project to total 45% of the rehab costs.

State historic tax credit projects

- *565 projects in St. Louis from 1996 to 2006*
- *rehab costs of those projects - $1.47 billion U.S.*
- *$307.7 million in tax credits issued*
- *4,831 jobs created*
- *5,500 new & rehabbed units*

source – Dept. of Economic Development, Missouri

St. Louis has been one of the nations leading cities in using historic tax credits. In tough urban markets where the return on new units is lower than in other cities, tax credits make the difference.

federal grants

The federal government provides distressed urban areas grant money. The Community Development Block Grant program (CDBG) is used to subsidize the costs of restoring historic buildings in distressed neighborhoods where the marketplace may not otherwise invest.

The funds are also used to:

- help home owners with basic repairs
- provide funding to business owners to improve facades
- help businesses create new or additional jobs
- rebuild neighbourhood infrastructure.

houses

The majority of the 20,000 + buildings in designated historic districts are houses. These single family, two and four family dwellings housed the large immigrant population of St. Louis when it was a manufacturing power house.

The City actively promotes the restoration of these buildings. Hundreds have been rehabbed from vacant buildings to new housing. In some neighbourhoods the restoration costs exceed the market value of the building. The City uses federal grant money to provide "gap financing" to help offset the difference between the restoration costs and sale price.

1423 Munroe – before

1423 Munroe – after

Hundreds of historic homes have been rebuilt after years of abandonment. This building was transformed from severe structural damage to new affordable housing.

neighborhood housing groups

Several neighbourhood groups are funded through federal grants to provide housing and jobs in distressed neighbourhoods. These groups are an effective means of delivery in acquiring and rehabilitating historic properties.

1970's infill housing in historic areas – unsustainable & a complete failure that in some areas still scars the landscape

affordable housing tax credits

Affordable housing tax credits, like historic credits, are used to offset restoration costs to create affordable housing. Tenants or buyers must meet income requirements.

Residents in need of affordable housing congregate in historic urban cores. St. Louis is no exception. 29% of all households (32,604) and 4.3% of households with people 65 years or older (4,890), live below the poverty line (*U.S. Census Bureau*).

Several St. Louis restoration projects have combined affordable housing tax credits with the historic tax credits, to provide housing for lower income residents.

Proximity to vacant or abandoned buildings increases in older and historic neighborhoods. It is estimated that property values decrease by over 10% as a result. Investing in the buildings creates values for existing property owners who are more likely to maintain their property.

This former warehouse on the edge of downtown was designated as an historic structure & is now being converted into affordable housing units. The former Franklin School in the background was also converted.

units with tax incentives

- ***35 buildings – 3,438 units, are tax abated***
- ***45 projects – 5,032 units have tax increment financing***

brownfield tax credits

The federal and state governments issue brownfield tax credits. These credits offset the cost of cleaning contaminated sites and buildings. In St. Louis the credits have helped remediate issues in several historic properties prior to conversion.

tax abatement / financing

The City helps to offset restoration costs through Tax Increment Financing (TIF) and / or tax abatement.

- TIF's recycle the increased taxes resulting from the restoration work back into the development to help pay off the debt. These taxes include property; retail sales; utilities; and other taxes

- tax abatement caps the property taxes at what they were prior to restoration. This is done for a specific time period. This makes the units more affordable for the new owners. The city used to provide 25 year periods for the abatement. However, as the property market has rebounded, ten years is the maximum, with the norm being five, or none at all where prices are higher

benefits

The success of the St. Louis strategy can be measured by construction dollars and jobs. However, in 20 years nobody will think about these when they view a historic streetscape. The long term impacts like homes for people; a vibrant street; or reduced waste, stand out and are not easily measured.

The benefits of sustainable historic rehabilitation reflect the sustainability criteria: social; environmental; and fiscal.

- employment
- centre city rebuilding
- small business incubation
- property values / taxation
- creation of affordable housing
- recycling
- tourism

centre city progress: 1999 – 2006

- ***$1.3 billion invested in historic buildings***
- ***56 historic buildings restored & converted to 4,221 new units***
- ***over 9,400 new residents***
- ***18 projects under construction adding another 1,337 units***
- ***20 other projects in planning for 896 units***

source – st. louis planning agency

social

affordable housing

Affordable housing will dominate the agendas for Mayor's around the world for the next 30 years. Housing in historic structures is flexible, less expensive generally and can adapt to changing needs quickly. Several affordable housing projects in St. Louis resulted from the conversion of schools or factories. The City estimates that 35%+ of the new units, are affordable.

Affordability will be important not just for low income households, but the growing number of seniors.

fiscal

employment – new vs. rehab / conversions

The National Trust for Historic Preservation estimates that the benefits in jobs, wages and the number of units created, is greater for conversions than building new single family homes. The job numbers for construction and related industries would compare as set out in the following table.

In new construction the cost is generally split 50 / 50 between materials and labour. For restorations the labour accounts for between 60% – 70% and this has the larger impact on the local setting. The revenue stream is more likely to stay local, rather than with new construction where distant materials suppliers are located. Building local wealth enhances sustainability. (source – D. Rypkema - 2005)

tourism

The relationship between historic preservation and tourism activity are well documented.

impact of equal spending - new construction vs. rehabilitation

number of units	*jobs created*	*wages*
1,000 new 1 family homes	*2,448*	*$79.4 M*
2,000/ 3,000 conversions	*2,838*	*$88.7 M*

source – national trust for historic places

growth in property tax assessments in downtown buildings converted to residential uses

- **2000 - $17,623,780**
- **2006 - $33,127,250**
- **89% increase**

source – st. louis planning agency

average sales price in historic districts

2000 - $ 95,573
2006 - $ 190,080
99% increase

source – st. louis planning agency

small business incubation / mixed uses

Amenities and services are critical to housing sustainability. Small businesses account for the majority of employment and in the U.S., 85% of new jobs.

In St. Louis between 1999 and June 07, 80 new businesses have opened in historic properties downtown. Historic properties are generally more affordable and attractive to new small business.

property taxation / sales prices

Sustainable housing includes having essential services. A consistent and growing tax base is needed to achieve this goal. Capitalizing on the historic buildings has grown the city tax base through the influx of new residents and businesses.

The real estate market has recovered from decades of disinvestment. Between 1999 and 2000 the average price of a home in a historic area has increased by 99%.

environmental

recycling vs. demolition

Demolishing a 10,000 square foot building (929 m2) cancels the benefit of recycling 2,688,000 aluminum cans. (D.Rypkema – 2007). The 19,648,201 square feet of floor area (1,825,318 m2) saved and converted into other uses in downtown St. Louis over the past 6 years, is the equivalent to having not thrown 5.3 billion aluminum cans into land fills. The City's recycling program is having a major impact and has saved hundreds of buildings that are or can be restored.

lead remediation

The health impact of lead poisoning, especially on children, is a serious issue for older urban areas. With an average building age of over 50 years, the majority of buildings either have or had lead paint.

The City uses federal funding to remediate homes. From 2001 to 2006, the City received $18.6 million in federal lead grants. The funding is used to remediate lead in dwellings and screen children for elevated lead levels in their blood.

Many of the vacant buildings were beyond repair & were demolished

impact of recycling buildings downtown

- ***19,648,201 sq. feet (1,825.318 m2) preserved***
- ***equivalent of saving 5.3 billion aluminum cans from going to landfills***

The City has screened on average 12,400 children less than 6 years of age, per year for the past eight years, equal to 43% of that age group.

The City takes lead poisoning seriously and our efforts to rehabilitate historic buildings is a major part of our sustainability effort to provide safe environments for our residents and particularly children

Removing lead paint from windows is an important part of remediation

examples

past mistakes

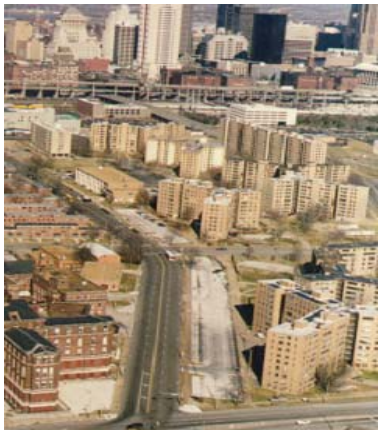
A lot of money has been wasted on housing projects in inner cities. Many housing efforts have deteriorated within 20 to 30 years. Rebuilding these areas for a second time inhibits the City's ability to address neighborhoods where little investment has occurred. The sustainable approach is intended to enhance the quality; affordability; and responsibility in our housing programs to ensure longevity.

The following recent conversion / rehabilitation projects highlight the positive success of our "sustainable housing through historic preservation strategy". These projects are complete, almost 100% occupied and have become the model for so many other successful projects. Our success has been heralded by many urban experts as the most dramatic turnaround in American centre cities.

Pruit Igoe – early 1960's

Pruit Igoe - 1972

A public housing project built in 1955 on the north edge of downtown St. Louis, demolished in 1972 – 3,000 units in 33, 11 storey buildings – 1.5 million sq. feet. The national image of unsustainable housing



Darst Webbe – 1990's

Just south of the downtown this high rise public housing project was demolished in the 1990's – 1,700 units. At one point two floors were taken off each tower in an attempt to enhance "sustainability". The towers have been replaced with houses and senior's multi-unit buildings.

successes

Homer G. Phillips Hospital & The City Hospital

In the 1980's as the city's fiscal position became critical, two city sponsored hospitals were closed. Both of these buildings have been converted using several of the programs noted in this submission, including historic tax credits.

Homer G. Phillips Hospital, vacant for 20 years, is now a senior living centre with 220 apartments, anchoring the reconstruction of a distressed area

City Hospital, also vacant for over 20 years, benefited from historic & brownfield tax credits to help convert the building into 104 market rate apartments. The development has been a catalyst for new neighborhood retail uses.

continental building

- ***full tax abatement until 2011***
- ***50% abatement after that for 16 yrs***
- ***full taxes after 2027***

continental building

The Continental Building was constructed in 1930 as a bank. The 22 storey building was abandoned from 1973 to 2003 when it was converted to 107 rental apartments using historic tax credits. The property tax increase is fully abated to 2011, decreasing thereafter, making the restoration more feasible for the owners.

The Continental Building was vacant for 25 years before being converted into rental apartments

merchandise mart

Built in 1889 as a tobacco warehouse, the Merchandise Mart had many uses until 1980. Vacant for 20 years, three attempts were made to demolish the building as recently as 2001, but were refused by the city.

A $47 million conversion of the 350,000 square foot building (32,515 m2) created 213 loft apartments with ground floor retail.

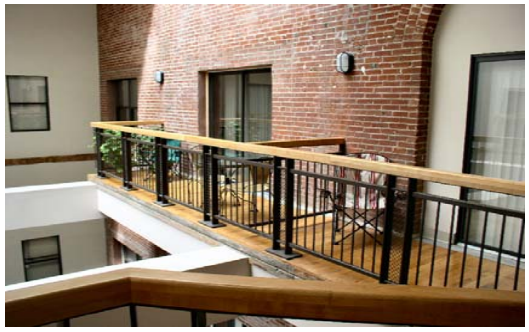
The size of the floor plate of many historic buildings offer unique challenges. In this example an atrium was built in the centre to provide light to the interior facing units.

Like many of the historic conversions downtown, parking is provided by using parking stackers in the basement. The stackers are doubling the supply of parking, making the buildings more sustainable.

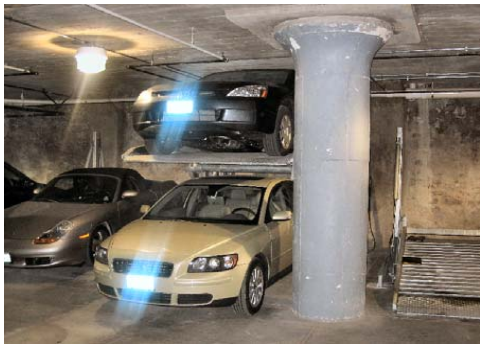
Both historic and brownfield tax credits were used in the project and several of the units are affordable.

The 350,000 sq. ft (32,515 m2) Merchandise Mart Bldg. was vacant for 20 years prior to a $47 million conversion into rental apartments and retail uses

Small units in the former elevated walkways joining the two buildings



An atrium was built in the centre of the building, and interior units have windows and balconies facing into the space



Parking stackers in the basement increase spaces & reduces the need for exterior parking lots

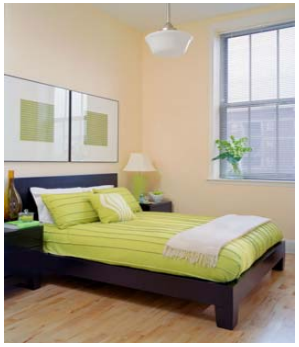
moolah temple

The Moolah Temple was built in 1914 and was operated as a Shrine Temple. The building presented challenges with a large auditorium, mezzanine and a large tower over the stage. The building was converted into a mixed use project with 45 rental apartments built over several levels up the inside of the stage tower. The large auditorium was converted into a movie theatre and the basement as a bowling alley.

Using historic tax credits, the creative use of interior spaces greatly enhanced the sustainability of what otherwise was a highly inefficient building.

The City provided property tax abatement for this development which runs to 2015. This means the owners continue to pay property tax at the level set prior to the restoration.

The Moolah Temple, a former Shrine Temple, was converted into 45 apartments, movie theatre & entertainment venue



Interior of the rental units built inside the Temple

franklin school

The city's population loss included a drop in the number of public school students from 120,000 in 1970, to 34,000 in 2007. This resulted in a glut of large historic school buildings. Several of these have been converted into rental or condo units, many of which qualify as being affordable. The use of historic, brownfield and affordable housing tax credits have made these conversions possible.

While some aspects of the historic design are inefficient, like the width of the hallways, the expanse of windows and method of construction make up for these shortfalls. Ten to 15 schools are either converted to residential uses or are under development creating over 500 new units.

Built in 1909 Franklin School was converted into 79 affordable housing units. The school is an example of several discarded schools that have or can be converted into new housing.

cupples station

- ***40% of the units fall under the Affordable Housing Tax Credit***
- ***full taxes abated until 2016***
- ***9 of the original 17 warehouses remain & all are "in play"***
- ***highly sustainable – on the rapid transit line & within walking distance to the office core***

cupples station

Cupples Station is a series of warehouses built between 1894 and 1912 where goods were stored prior to shipment. At the south edge of downtown, these buildings were neglected for decades. Over the past nine years several have come back to life converted into different uses including a four star hotel and affordable housing.

The clustering of these buildings is helping to create a new community on the rapid transit line and within a walk of the office core, increasing sustainability as residents commute by foot and transit

The historic cupples station warehouses are located right on the rapid transit line

2115 north market St.

As the photographs show, the rear walls of these row houses had collapsed. The buildings were vacant for several decades. They have been restored for low income housing through a series of programs that offset the costs of renovating in a distressed neighborhood.

- tax exempt bond financing
- federal & state affordable housing tax credits
- federal & state historic tax credit funds
- state administered HOME Program funds
- city affordable housing commission funds
- sustainable neighborhood grant funds
- affordable housing assistance program funds

1215 N. Market prior to restoration. The rear wall of the 3 buildings had collapsed taking a portion of the sidewall as well

The restoration of the three houses has stimulated new construction on adjacent vacant lots

pushing the agenda

St. Louis has become the model for sustainable building recycling in the U.S. In the past, one of our exports was used red brick from demolished buildings. This export has reduced as more and more buildings are restored. The savings in "embodied energy" by recycling existing buildings supercedes any operational gains of new construction.

To push for greater sustainability, St. Louis is developing a "Building Recycling Sustainable Development Scorecard". This will provide a checklist for builders to evaluate the advantages of saving a building as well as what energy savings to include in the building program.

Our initiative is phased. We have reestablished a market for unique city living spaces by recycling buildings, we can now exert firm direction in the operational programs for these historic restorations

conclusion

St. Louis has successfully used strategic incentives to remake its' historic urban core through the conversion of historic buildings into homes for thousands of new residents.

The Brookings Institute estimates that by 2030 half of all buildings in the U.S. will have been built prior to the year 2000. Brookings estimates that 28% (82 billion sq. feet) of the 296 billion square feet that currently exist in the U.S., may be demolished including 20 million housing units. This scenario has serious implications on energy consumption and the built environment as we know it today.

The challenge is twofold:

- how can we reuse existing buildings
- what can Mayor's do to encourage the retention of these buildings.

Every building in the photo was virtually empty seven years ago & they are all now over 90% occupied with housing & grade retail

Climate change is most impacted at the urban level. Mayors around the globe can implement sustainable housing choice now, through programs designed to encourage the reuse of existing buildings. If existing buildings around the globe are not utilized to help meet the surge in housing demand, the potential impacts on the environment will be unacceptable ■

appendix i

sustainable development scorecard

sustainable development scorecard
historic building conversions & rehabs

0= N/A or not achieved at all, 1=25% achieved, 2=50% achieved, 3=75% achieved 4=100% achieved, 5= beyond target

	goals		objectives	degree achieved
fiscal	1	careful building survey & use of incentives	▪ ensure the building is efficient for the intended use ▪ explore using tax credits to enhance the fiscal component of the project • interior space should be efficiently laid out	
	2	operations & maintenance cost reduction	1. maxium use of green • solar panels • green roofs • geothermal 2. provide access to light to reduce energy use 3. design to minimize labor / maintenance • minimize hand mowing • minimize spring plantings • easy to maintain materials	
	3	maximizing unit counts	• interior space should be efficiently laid out • hallways should be double loaded – units on both sides	
Social	4	practicality of the buiding depth	proper evaluation of the building dimensions for suitable/efficient conversion minimizing lighting/ventilation for residential building - width (to the centre): • <15' (5m) too shallow for double loaded corridor • 15-35' (5-12m) allows for natural light to reach interior spaces • over 35' (12m) use of a light atrium may be necessary	
	5	reduction in needed building materials	reuse as much of the building & building materials as possible	
	6	design should consider the public realm	• efficient use of ground floor space with flexibiltiy for changes in use • minimal curb cuts & vehicular movement in & out of the site/consider the practicality of on street loading areas • retain historic features while additions should provide contrast	
	7	maximizing unit count	• avoid creating large inefficient floor layouts & overly large unit sizes • intelligent design with a unit size mix that provides smaller units	
	8	low impact parking space design	use parking stackers in basements to minimize area needed for parking & to avoid outdoor surface parking	
	9	material longevity	building material should be maintenance free with a long shelf life	

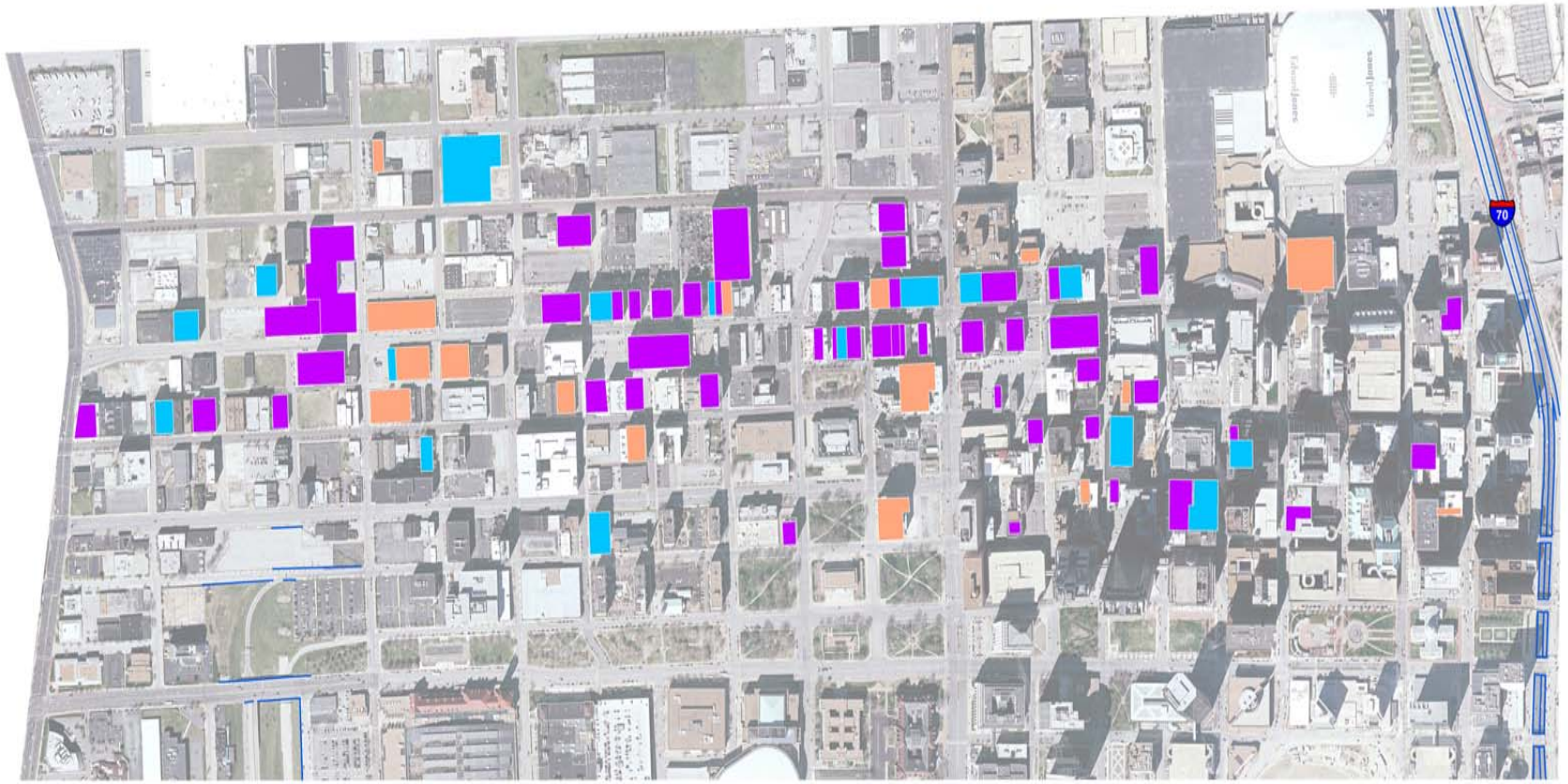
0= N/A or not achieved at all, 1=25% achieved, 2=50% achieved, 3=75% achieved 4=100% achieved, 5= beyond target

goals			objectives	degree achieved
environmental	10	improve quality & capture of storm water	develop a storm water plan 1. reducing impervious surfaces / stone dust paths 2. provide for storm water infiltration / capture / use / purification • bio swales • subsurface infiltration systems 3. grey water retention for use on site 4. use green roof materials	
	11	use of environmentally safe products	avoid materials with environmental issues like PVC	
	12	minimize waste, emissions & resource use	1. on site recycling programs 2. root top spaces should "green" the space through features to shade; retain water; reduce cooling/heating requirements 3. allow the building to adapt - such as operable window to reduce mechanical ventilation needs	
	13	efficient energy & water use	1. use alternative energy sources - solar panels, wind turbines to supplement primary source 2. window films 3. external lights should be solar powered 4. high efficiency building materials 5. use double loaded corridors 6. building interior should be efficient 7. shutters in prominent places such as atriums 8. roof mounted water tanks to absorb heat & create gravity fed water pressure 9. avoid dark surface on roof	
	14	efficient floor plate design	1. design for natural light, ventilation, cooling & heating 2. minimize single loaded corridors 3. efficient mechanical systems to move air through large spaces	
	15	minimizing construction impacts	1. washing construction vehicles prior to exiting site 2. separation of materials to be disposed into recyclables 3. remediation of environmental hazards – lead / asbestos	
	16	mixed uses	provide for mixed uses in the building to allow for short commutes	

appendix ii

historic conversion inventory

DOWNTOWN HISTORIC BUILDING CONVERSIONS



Art Lofts:
1531 Washington Ave
Rental
Built – 1920
Bldg Sq Ft – 157,793
63 Units
Cost - $6.2M
Renovated - 1996

Bodega Lofts:
1216 Washington Ave
Condo
Built – 1912
Bldg Sq Ft – 12,815
3 Units
Renovated – 1996

Enchanted Lofts:
1224 Washington Ave
Rental
Built – 1913
Bldg Sq Ft – 95,000
31 Units
Cost - $10M
Renovated - 1997
Abated - 2009

Knickerbocker Lofts:
507 N 13th St
Condo
Built – 1899
Bldg Sq Ft – 128,750
53 Units
Renovated - 2000
Abated - 2008

McGowan Lofts:
1221 Washington Ave
Condo
Built – 1899 Renovated – 2000
Bldg Sq Ft – 82,650
13 Units

University Lofts:
1627 Washington Ave
Rental Cost - $5.3M
Built – 1907 Renovated – 2000
Bldg Sq Ft – 64,800
Abated - 2009

10th St Lofts:
417 N 10th
Rental Cost - $10M
Built – 1913 Renovated - 2001
Bldg Sq Ft – 150,000
31 Units

Edison Condominiums:
400 S 14th St
Condo Cost - $72M
Built – 1928 Renovated - 2001
Bldg Sq Ft – 1M TIF
76 Units Abated - 2015

W.S. Hotel:
400 Washington
For Lease
Built – 1901
Bldg Sq Ft – 103,253
78 Units
Abated - 2011
Renovated - 2001

Elder Shirt Lofts:
702 N 13th St
Owner Occupied
Built – 1906
Bldg Sq Ft – 91,000
30 Units
Abated - 2011
Renovated – 2002

8th Street Lofts:
316 N 8th St
Rental
Built – 1888
Bldg Sq Ft – 22,200
3 Units
Cost - $4.5M
Renovated – 2003
Abated - 2012

King Bee Lofts:
1709 Washington Ave
Condos
Built – 1911
Bldg Sq Ft – 93,600
35 Units
Cost - $3.9M
Renovated – 2003
Abated - 2014

Louderman Lofts:
317 N 11th St
Condo
Built – 1925 Renovated - 2003
Bldg Sq Ft – 95,000 TIF
20 Units

Merchandise Mart:
1000 Washington Ave
Rental Cost - $47M
Built – 1880 Renovated – 2003
Bldg Sq Ft – 340,000
213 Units

Pairstyle Lofts:
1517 Washington Ave
Condos Cost - $3.2M
Built – 1910 Renovated – 2003
Bldg Sq Ft – 37,600 Abated - 2011
9 Units

Rudman on the Parks:
1228 Washington Ave
Rental Cost - $12M
Built – 1901 Renovated – 2003
Bldg Sq Ft – 128,000 Abated - 2012
48 Units

Terra Cotta Lofts:
1501 Locust St
Condos
Built – 1915
Bldg Sq Ft – 162,000
102 Units
Cost - $19M
Renovated - 2003
TIF
Abated - 2012

Lofts @ Jack Thompson Square:
1204 Washington Ave
Condo
Built – 1908
Bldg Sq Ft – 21,000
8 Units
Cost - $6.4M
Renovated – 2003
Abated - 2013

2020 Lofts:
2020 Washington Ave
Condos
Built – 1920
Bldg Sq Ft – 165,000
103 Units
Cost - $21M
Renovated – 2004
Abated - 2013

Grace Lofts:
1324 Washington Ave
Rental
Built – 1907
Bldg Sq Ft – 62,426
24 Units
Cost - $9.8M
Renovated – 2004
TIF

Printers Loft (Bldg B) :
1601 Locust St
Condo
Built – 1916
Bldg Sq Ft – 300,000
40 Units
Cost - $27M
Renovated – 2004
TIF

Printers Loft (Bldg C) :
1617 Locust St
Condo
Built – 1920
Bldg Sq Ft – 298,297
40 Units
Cost - $27M
Renovated – 2004
TIF

Railway Lofts:
1619 Washington Ave
Condos
Built – 1910
Bldg Sq Ft – 136,000
41 Units
Cost - $12.5M
Renovated - 2004
TIF

The Lofts @ 315:
315 N 10th St
Rental
Built – 1899
Bldg Sq Ft – 41,302
20 Units
Cost - $6.4M
Renovated - 2004

Vanguard Lofts:
1110 Washington Ave
Rental
Built – 1902
Bldg Sq Ft – 136,000
86 Units
Cost - $14M
Renovated – 2004
Abated - 2014

Alexander Lofts:
1121 Locust St
Condo
Built – 1906
Bldg Sq Ft – 20,683
8 Units
Cost - $5M
Renovated – 2005
Abated - 2015

Annex Lofts:
1627 Washington Ave
Rental
Built – 1907
Bldg Sq Ft – 122,400
26 Units
Cost - $5.3M
Renovated – 2000
Abated - 2009

Bell Lofts:
920 Olive St
Rental
Built – 1891
Bldg Sq Ft – 37,000
24 Units
Cost - $6.1M
Renovated - 2005
TIF

City Museum Phase I:
701 N 15th St
Condo
Built – 1930 Renovated - 2005
Bldg Sq Ft – 668,133
10 Units

Garment Row Lofts:
1312 Washington Ave
Condos Cost - $3.5M
Built – 1904 Renovated - 2005
Bldg Sq Ft – 27,671 TIF
12 Units

Paul Brown Building:
818 Olive St
Rental Cost - $52M
Built – 1926 Renovated – 2005
Bldg Sq Ft – 288,000 TIF
222 Units

Windows Lofts:
1601 Washington
Condo Cost - $15.8M
Built – 1909 Renovated – 2005
Bldg Sq Ft – 120,400 TIF
33 Units

Bankers Lofts:
901 Washington Ave
Condos
Built – 1930 Renovated - 2006
Bldg Sq Ft – 149,000
64 Units

Bee Hat Company:
1025 Washington Ave
Rental Cost - $32M
Built – 1905 Renovated - 2006
Bldg Sq Ft – 63,096 TIF
36 Units

Cupples Station Lofts:
1015 Spruce St
Rental Cost - $48M
Built – 1900 Renovated – 2006
Bldg Sq Ft – 1.5M Abated - 2015
131 Units

Fashion Square:
1307 Washington
Rental Cost - $29M
Built – 1926 Renovated – 2006
Bldg Sq Ft – 200,000 TIF
96 Units

Lucas Lofts:
1123 Washington Ave
Condos — Cost - $23.5M
Built – 1896 — Renovated - 2006
Bldg Sq Ft – 189,000 — Abated - 2016
96 Units

Majestic Stove Lofts:
2020 Delmar Blvd
Rental — Cost - $24.2M
Built – 1895 — Renovated – 2006
Bldg Sq Ft – 162,000 — Abated - 2015
120 Units

Moon Brothers Carriage Lofts:
720 N 17th St
Condos — Cost - $12.2M
Built – 1885 — Renovated – 2006
Bldg Sq Ft – 77,000 — TIF
43 Units

Pointe 400:
400 S 4th St
Rental — Cost - $36M
Built – 1969 — Renovated - 2006
Bldg Sq Ft – 1.5M — TIF
118 Units

Roberts Lofts on the Plaza:
901 Locust St
Rental
Built – 1892
Bldg Sq Ft – 105,582
47 Units
Cost - $13M
Renovated - 2006

Terrace Lofts:
1300 Convention Plaza
Rental
Built – 1951
Bldg Sq Ft – 51,000
48 Units
Cost - $5M
Renovated - 2006

The Meridan:
1136 Washington Ave
Condos
Built – 1895
Bldg Sq Ft – 164,000
95 Units
Renovated - 2006
TIF

Westgate Lofts:
2327 Locust St
Condos
Built – 1922
Bldg Sq Ft – 85,000
49 Units
Cost - $11.5M
Renovated - 2006
TIF

Adler Frame Lofts:
2035 Washington Ave
Condos
Built – 1919
Bldg Sq Ft – 221,584
33 Units
Cost - $9M
Renovated – 2007
TIF

Ely Walker:
1516 Washington Ave
Condos
Built – 1909
Bldg Sq Ft – 320,000
74 Units
Cost - $13.3M
Renovated - 2007
TIF

Marquette Building:
314 N Broadway
Condos / Rental
Built – 1814
Renovated - 2007
122 Units
Abated - 2009
TIF

Neighborhood Gardens:
205 N 7th St
Rental
Built – 1935
Bldg Sq Ft – 102,107
144 Units
Cost - $10.4M
Renovated - 2007

Packard Lofts:
2201 Locust St
Condos
Built – 1914
Bldg Sq Ft – 665,000
33 Units

Cost - $10M
Renovated - 2007
TIF

The Arcade:
800 Olive St
Condos/Rental
Built – 1918
Bldg Sq Ft – 2.38M
200 Units
Cost - $101.1M
Renovated – 2007
TIF

The Bogen:
1209 Washington Ave
Condos
Built – 1903
Bldg Sq Ft – 250,000
126 Units
Renovated – 2007
Abated

Chemical Building:
721 Olive St
Condos
Built – 1896
Bldg Sq Ft – 267,103
85 Units
Cost - $22M
Renovated – 2007
Abated - 2009

Denim Lofts:
1308 Washington Ave
Condos
Built – 1907
Bldg Sq Ft – 53,000
24 Units
Cost - $5M
Renovated - 2007

Dorsa Lofts:
1015 Washington Ave
Condos
Built – 1899
Bldg Sq Ft – 123,000
52 Units
Cost - $20M
Renovated – 2007
Abated - 2016

Edge Lofts:
2101 Lucas Ave
Rental
Built – 1920
Bldg Sq Ft – 69,000
65 Units
Renovated - 2007

Franklin School:
814 N 19th St
Rental
Built – 1909
Bldg Sq Ft – 365,097
75 Units
Renovated – 2007

Fulton Lofts:
612 S 7th St
Rental
Built – 1887
Bldg Sq Ft – 48,059
15 Units
Cost - $36M
Renovated - 2007

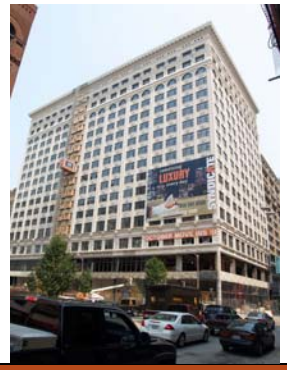
Guzzardo Building:
1521 Washington Ave
Condos/Rental
Built – 1916 Renovated - 2007
Bldg Sq Ft – 23,486
4 Units

Littleton Lofts:
1900 Locust St
Condos
Built – 1906 Renovated – 2007
Bldg Sq Ft – 32,882
6 Units

Locust St Lofts:
2223 Locust
Rental Cost - $16M
Built – 1914 Renovated - 2007
Bldg Sq Ft – 93,000
94 Units

Ludwig Lofts:
1004 Olive St
Rental
Built – 1905 Renovated - 2007
TIF Abated - 2015
17 Units

Motor Lofts:
2201 Washington Ave
Condos — Cost - $15M
Built – 1900 — Renovated - 2007
Bldg Sq Ft – 116,000
75 Units



Syndicate Trust:
915 Olive St
Condos/Rental — Cost - $85.3M
Built – 1906 — Renovated – 2007
Bldg Sq Ft – 523,000 — TIF
172 Units

Washington Ave Apartments:
1133 Washington Ave
Rental — Cost - $12M
Built – 1963 — Renovated - 2007
Bldg Sq Ft – 149,487 — TIF
95 Units

Wright Building:
1918 Washington Ave
Condos
Built – 1919 — Renovated – 2007
Bldg Sq Ft – 13,619
4 Units

Ventana:
1635 Washington Ave
Condos
Built – 1918
Bldg Sq Ft – 147,255
91 Units

Cost - $12.2M
Renovated - 2007
TIF

1818 Lofts:
1818 Washington Ave
Rental
Built – 1924
Bldg Sq Ft – 49,751
39 Units
Cost - $20M
Renovated - 2008

Ballpark Lofts #7:
1014 Spruce St
Condos
Built – 1907
Renovated - 2010
80 Units
Cost - $41M

Ballpark Lofts #9:
900 Spruce St
Condos
Built – 1895
Renovated - 2009

Cutlery Building:
612 N 2nd St
Condo
Built – 1860
Renovated - 2007
Abated - 2010

Dillard's Building:
601 Washington Ave
Condos
Built – 1907
Bldg Sq Ft – 676,787
250 Units
Cost - $55M
Renovated – 2009
TIF
Abated - 2009

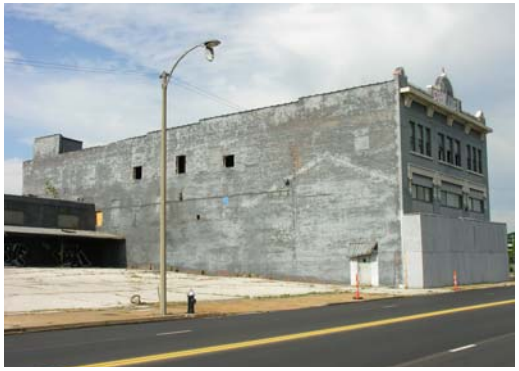
Dragon Trading:
1701 Locust St
Condos /Rental
Built – 1926
Bldg Sq Ft – 58,578
36 Units
Renovated – 2008

Gasperi Tool :
1911 Locust St
Condos /Rental
Built – 1911
Renovated - 2008
12 Units

Gordon Buell Building:
1900 Washington Ave
Rental
Built – 1919

Greely Lofts :
618 N 2nd St
Condos
Built – 1880 Abated - 2009
Renovated - 2007
12 Units

Hadley Dean Glass Building:
1101 Lucas Ave
Condos
Built – 1901 Abated - 2007
Renovated - 2008
12 Units



Jack Rabbit :
1928 Dr Martin Luther King Dr
Condos
Built – 1928
39 Units

Jewel Lofts:
1511 Washington Ave
Condos Cost - $12M
Built – 1909
Renovated – 2008
10 Units

Leather Trade Lofts:
1600 Locust St
Condos
Built – 1912 Renovated – 2008
Bldg Sq Ft – 132,808
59 Units

Mossinger Building:
1255 Washington Ave
Rental Cost - $12M
Built – 1899
Renovated – 2007
80 Units

New Jefferson Arms:
415 N Tucker
Rental Cost - $M
Built – 1904 Renovated – 2008
Bldg Sq Ft – 514,358 TIF
537 Units

Park Pacific:
201 N Tucker Blvd
Condos Cost - $60M
Built – 1927 Renovated – 2009
Bldg Sq Ft – 470,000 TIF
48 Units

Roberts Design Center Lofts:
917 Locust St
Condos
Built – 1913
24 Units
Abated - 2010