Reset to Default: Making Building Reuse the New Normal

Hidden in Plain Sight Adaptive Reuse Summit

WALL STREET THEATER, NORWALK, CT – MARCH 1, 2019

Jim Lindberg, Vice President, Research & Policy Lab
Research & Policy Lab

Data and solutions for more inclusive, healthy, and resilient communities
Research & Policy Lab
Testing assumptions and assertions
Importance of Building Sector

GHG emissions US

- Buildings: 48%
- Transport: 27%
- Other: 25%

GHG emissions US Cities

- Buildings: 70%
- Transport: 20%
- Other: 10%
Local materials  Durable  Climate sensitive
Party walls  Building form  Daylighting
Restore  Simple Retrofit  Deep Retrofit
Carl Elefante, AIA

“The greenest building is one that is already built.”
Compared two scenarios:

1. Rehabilitation and retrofitting an existing building
2. Demolition and replacement with efficient new construction
Life Cycle Stages

- Extraction
- Transformation
- Manufacture
- Use
- Distribution
- End of Life
Case Study Buildings

Single-family residential
Multifamily residential
Commercial Office
Urban village mixed-use
Elementary schools
Climate Regions

Portland
Phoenix
Chicago
Atlanta
The Year of Carbon Equivalency

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Chicago</th>
<th>Portland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Village Mixed Use</td>
<td>42 years</td>
<td>80 years</td>
</tr>
<tr>
<td>Single-Family Residential</td>
<td>38 years</td>
<td>50 years</td>
</tr>
<tr>
<td>Commercial Office</td>
<td>25 years</td>
<td>42 years</td>
</tr>
<tr>
<td>Warehouse-to-Office Conversion</td>
<td>12 years</td>
<td>19 years</td>
</tr>
<tr>
<td>Multifamily Residential</td>
<td>16 years</td>
<td>20 years</td>
</tr>
<tr>
<td>Elementary School</td>
<td>10 years</td>
<td>16 years</td>
</tr>
<tr>
<td>Warehouse-to-Residential Conversion*</td>
<td>Never</td>
<td>Never</td>
</tr>
</tbody>
</table>

Average existing vs. 30% more efficient new
Energy Use: New vs. Historic

Assumptions:

• Both houses are same size
• New house uses half of annual energy used by existing
“Cities need old buildings so badly it is probably impossible for vigorous streets and districts to grow without them.”
First empirical test of Jane Jacobs’ theories about the importance of retaining a fine-grained mix of old and new buildings for healthy, livable urban neighborhoods.
Does character matter?

- Street life and walkability
- Restaurants and small business
- Employment
- Diversity
- Affordability
- Residential density
Measuring urban buildings and blocks

Building Age + Age Diversity + Granularity = “Character Score”
“Character Score” for Hartford

Red
Older, smaller, mixed-age blocks

Blue
Newer, larger, similar-age blocks
Does built character matter?
Newer, larger, similar-age

Older, smaller, mixed-age

Healthy and active

More Pedestrian and transit use
Newer, larger, similar-age

Older, smaller, mixed-age

Greater Population density

Land efficient
Newer, larger, similar-age

Older, smaller, mixed-age

More Housing units

Density at human scale
Newer, larger, similar-age

Older, smaller, mixed-age

More Affordable housing units

Naturally occurring affordable housing
Newer, larger, similar-age

Older, smaller, mixed-age

More Small businesses

Economically diverse
Newer, larger, similar-age

Older, smaller, mixed-age

More
Local businesses

Economically resilient
Economically inclusive

Newer, larger, similar-age

Older, smaller, mixed-age

More Woman- and minority-owned businesses
Newer, larger, similar-age

Older, smaller, mixed-age

Economically vibrant

More jobs per square foot
Home for the new economy

More creative jobs per square foot

Newer, larger, similar-age

Older, smaller, mixed-age
Newer, larger, similar-age

Older, smaller, mixed-age

Energy efficient

Less energy use per square foot
Newer, larger, similar-age

Older, smaller, mixed-age

More Civic commons spaces

Socially connected
Newer, larger, similar-age

Older, smaller, mixed-age

Places for people

More 24-7 activity
Newer, larger, similar age

Older, smaller, mixed-age

Character counts

Cities need old buildings
ReUrbanism
Learning from the past to shape better cities for all
Denver 1975
Denver 1975
ReUrbanism is about great cities.
Cities that are **for people**, not cars, that are **diverse**, **authentic** and **vibrant**.
Cities that *conserve* and *reuse* older buildings to create a more *sustainable, equitable* future.
Challenges for cities

- equity and displacement
- density and affordability
- carbon pollution and sea level rise

Baltimore
Atlas of ReUrbanism

50 Cities

- Buildings & blocks
- Designations
- Economics
- Demographics
- Performance
Hartford
Buildings by the Numbers

- 17,432 buildings
- 90% 50 years or older
- 71% built pre-1945
- 1925 median year built
- 33% on National Register
- 0.8% locally designated
In Hartford, compared to areas with larger, newer, similar age structures, character rich blocks of older, smaller, mixed age buildings contain:

- Three times the population density
- Three times as many housing units
- 30% more jobs in small businesses
- 40% more jobs in new businesses
- Nearly 50% more creative sector jobs
4.3 %
of buildings are locally designated on average among the 50 cities in the Atlas of ReUrbanism
Foundational Research & Policy Work

- Learning from Los Angeles (October 2013)
- Retrofitting Philadelphia (September 2014)
- Building on Baltimore’s History (November 2014)
- Building on Chicago’s Strengths (May 2016)
- Unlocking Potential of Detroit’s Neighborhoods (Aug 2016)
- Reuse and Revitalization in Jacksonville (May 2017)
- Untapped Potential: Strategies for Revitalization and Reuse (October 2017)
Outdated zoning codes
Old zoning codes

NTHP Illustration images: Colfax Avenue, Denver
Old zoning codes
Better zoning codes
Old zoning codes
Better zoning codes
More Zoning Tools
More Zoning Tools

Contextual Base Zone Districts

Adaptive Reuse Overlay Districts

Conservation Overlay Districts

Historic Districts
2010 study of parking spaces in Tippecanoe County, Indiana (155,000)

11 parking spaces for every family

250,000 more parking spaces than there are cars and trucks

Parking Rules
Parking required
No parking required!
### Density without Demolition

<table>
<thead>
<tr>
<th>Surface parking</th>
<th>Parking garages</th>
</tr>
</thead>
</table>

**Urban Refill:**
- Vacant buildings
- Upper floors
- Empty lots
- Parking lots
- Brownfields
- Greyfields

Left: Downtown Louisville, KY. Map credit: Erik Weber

Right: Louisville, KY. Image credit: Andy Snow
Energy Benchmarking

**New York City energy benchmarking results**

*Figure 24: Median Energy Use Per Sq Ft by Building Type and Age Group*  
*Figure 25: ENERGY STAR Score for Office Buildings Based on Year Built*
Outcome-based energy codes

Exempted:
past energy codes

Exemplary:
future energy codes?
Demolition and Deconstruction Ordinances

Avoid and mitigate wasteful demolition
Incentivize local businesses
Legacy Business Registry

Grants for businesses and property owners of properties with 30 years of operation who have maintained an identity, name and craft
Adaptive Reuse Ordinances

Package regulatory relief, expedited plan reviews, fee waivers
Opportunity Zones

- Capital gains tax benefit for investment that creates economic activity in one of 8,700 OZ census tracts, focused on areas with high poverty rates and low income levels.
- No federal powers/few guardrails.
- 48% of Main Streets are in OZ’s.
- Of the 1,035 HTC projects in 2017, 46% are in OZ’s.
Opportunity Zones

- Capital gains tax benefit for investment that creates economic activity in one of 8,700 OZ census tracts, focused on areas with high poverty rates and low income levels.
- No federal powers/few guardrails.
- 48% of Main Streets are in OZ's.
- Of the 1,035 HTC projects in 2017, 46% are in OZ’s.
Make reuse the default choice for cities and demolition the last resort