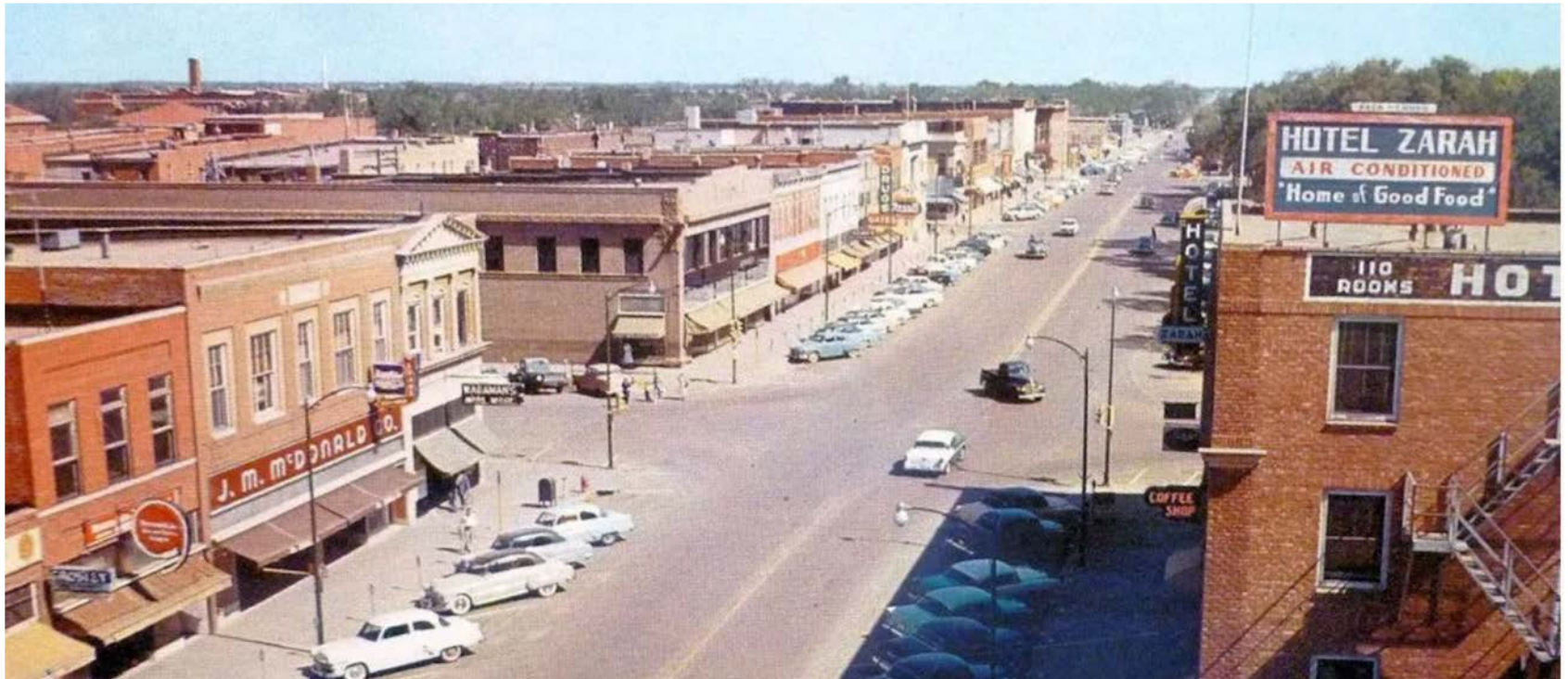
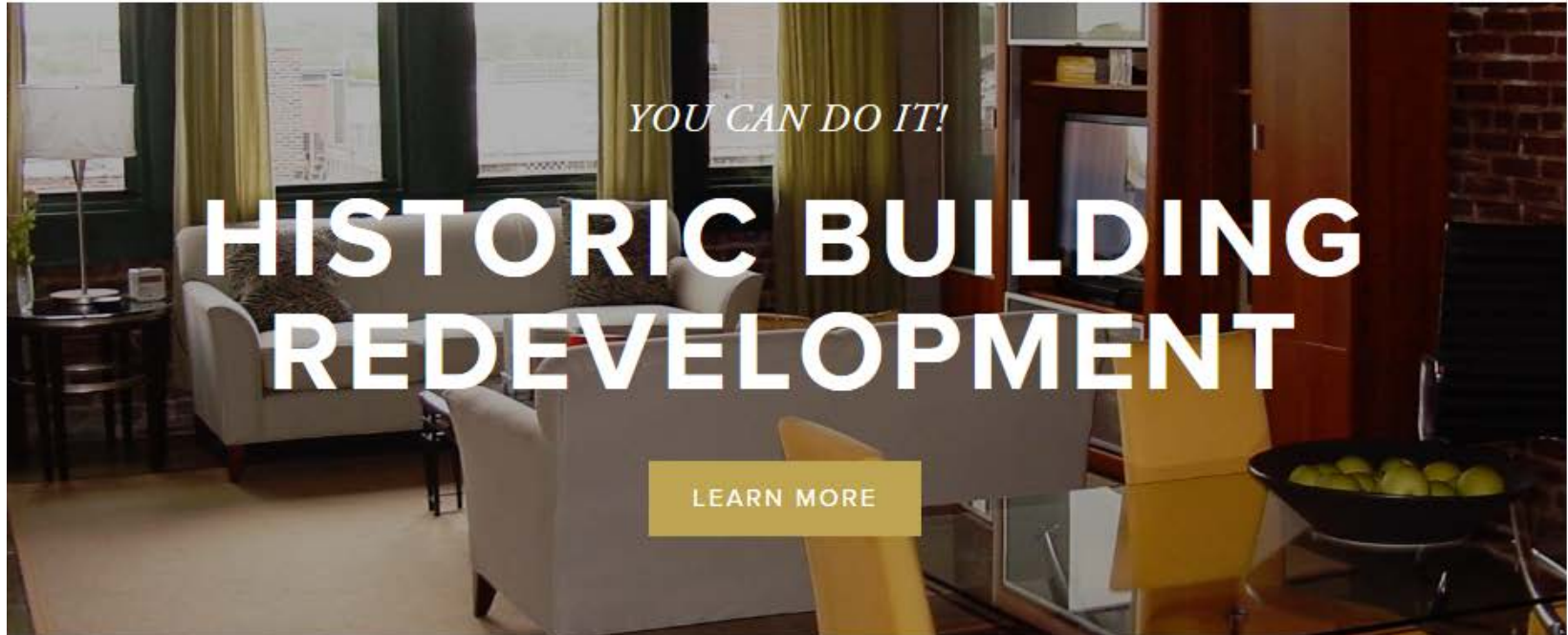


# Great Bend

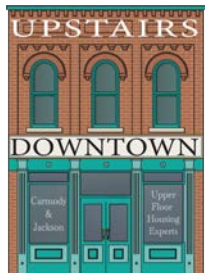
## ECONOMIC DEVELOPMENT



# ARCHITECTURAL ASSESSMENT



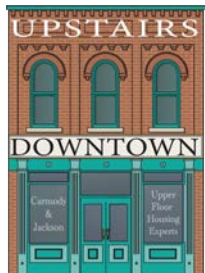
Market Forces  
Professional Skills  
Building Characteristics  
Rules and Regulations



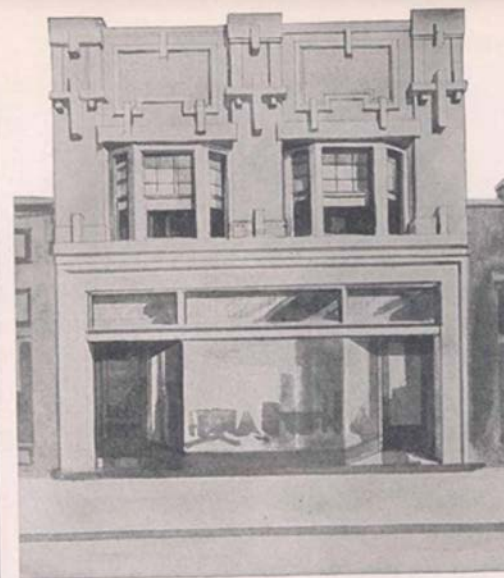
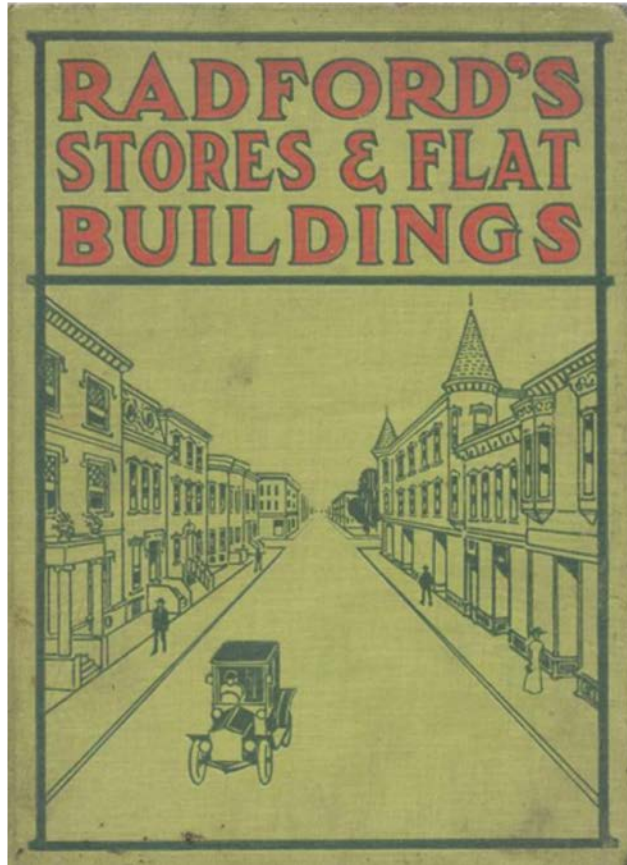
# FEASIBILITY

## Architectural/Economics

- The architectural, regulatory and fiscal variables that affect feasibility.
- The resources your Main Street program should have to facilitate feasibility studies.



# HISTORY LESSON



DESIGN NO. 4012.  
Size: Width, 25 feet; Length, 55 feet.  
Blue Prints consist of basement plan; first and second floor plans; all necessary elevations and interior details.  
Specifications are typewritten and contain all the information necessary for the proper construction of the building.

Price of Plans and Specifications..... \$15.00

Ornamental design for Store and Flat Building of brick with stone trimmings and plaster panels. Single large show window of plate glass with transom extending clear across the entire front. Entrance to store being on one side and to second floor on the opposite side. Double bay living in front on second floor. The lower floor is devoted entirely to store space, being 22 feet 8 inches in width by 52 feet in length, with entrance to basement under stairs leading to second floor. Three windows



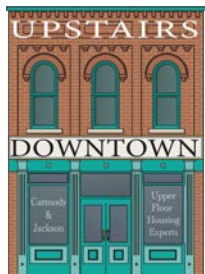
and a door in the rear, also provision for skylight on court. Second floor is divided into one large living room extending across the entire front, dining room, kitchen, two chambers, bath, pantry and closets. Fairly large porch in rear.  
Estimated cost of construction under favorable conditions, from about \$4,550.00 to about \$5,200.00.

Residential use on the upper story was very common.

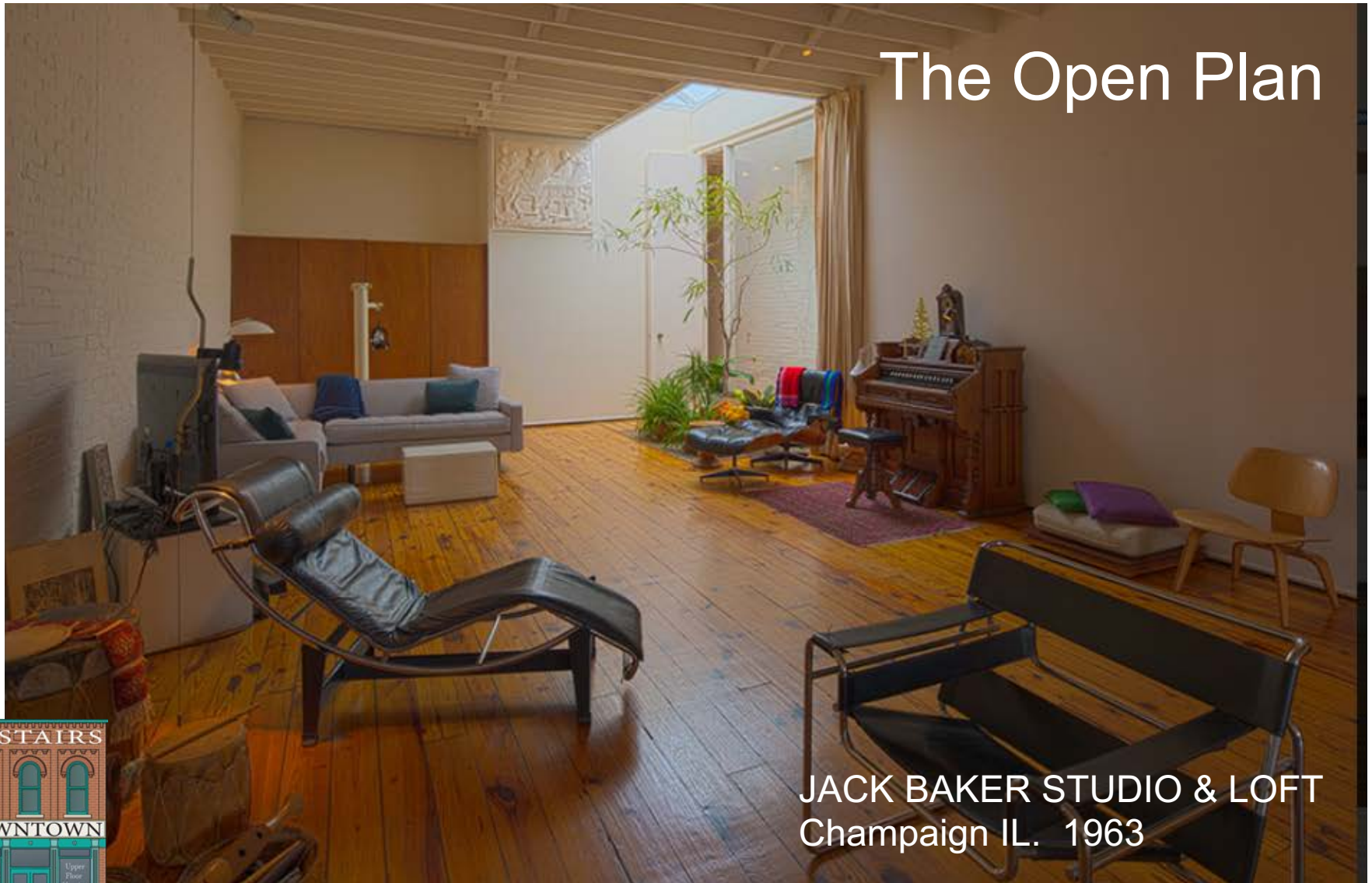
<https://archive.org/details/RadfordsStoresAndFlatBuildings>

# MARKET FORCES: RESIDENTIAL

- One, One+ or Two-Bedroom Units
- Large open floor plan ( 800-1,200+ sq. ft.)
- Washer and dryer in units
- One+ Large bedroom and study
- Amenities
  - Outdoor balcony or deck
  - Study are storage space
  - Enclosed parking
  - Elevator

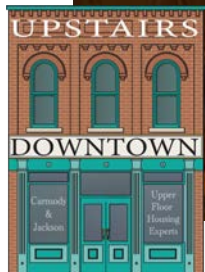


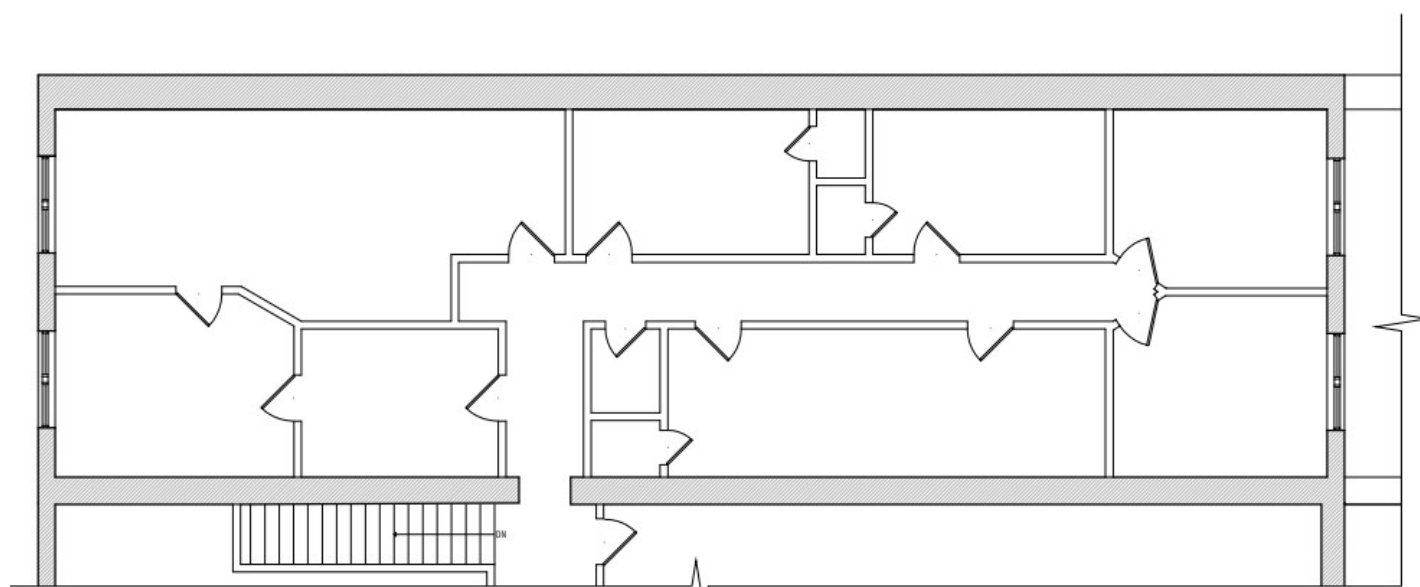
# New Housing on Main Street



The Open Plan

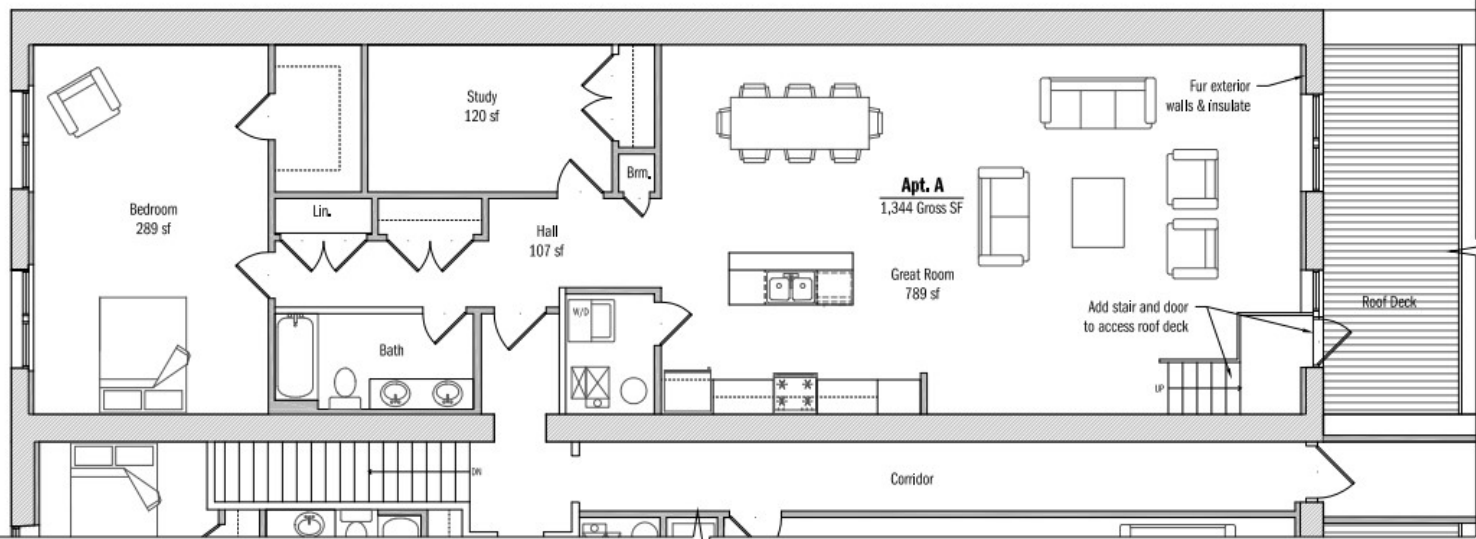
JACK BAKER STUDIO & LOFT  
Champaign IL. 1963





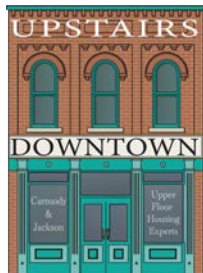
Existing Upper Level Floor Plan

# Typical plan

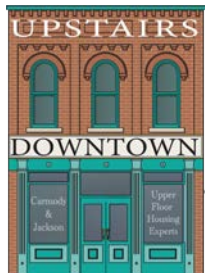
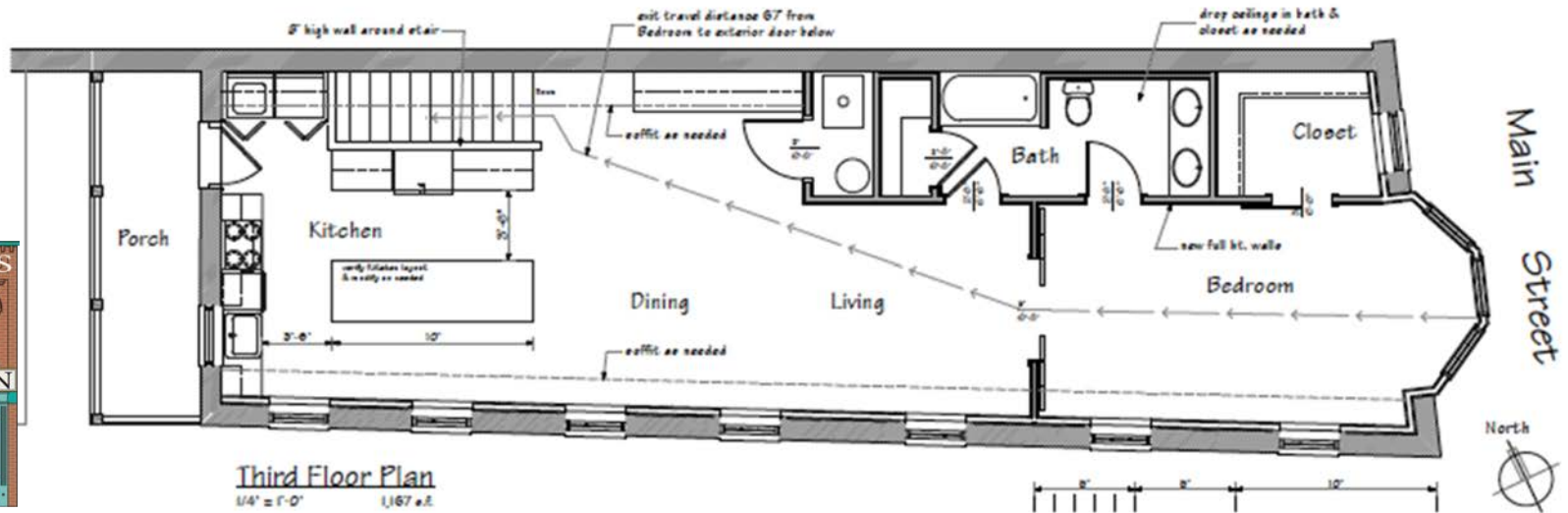


Proposed Upper Level Floor Plan

# Contemporary Plan



# THE OPEN PLAN UNIT

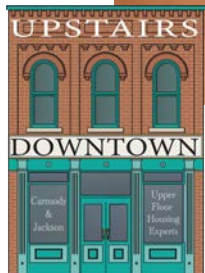




# DESIGN MATTERS



- The “Cool” Factor
- **Tall Ceilings**
- Period Trim
- Open Plan
- High Quality



“Error on the side of quality”

# OPPORTUNITIES

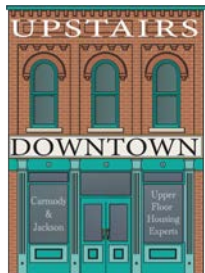
Solid Architectural “bones”

Great Location

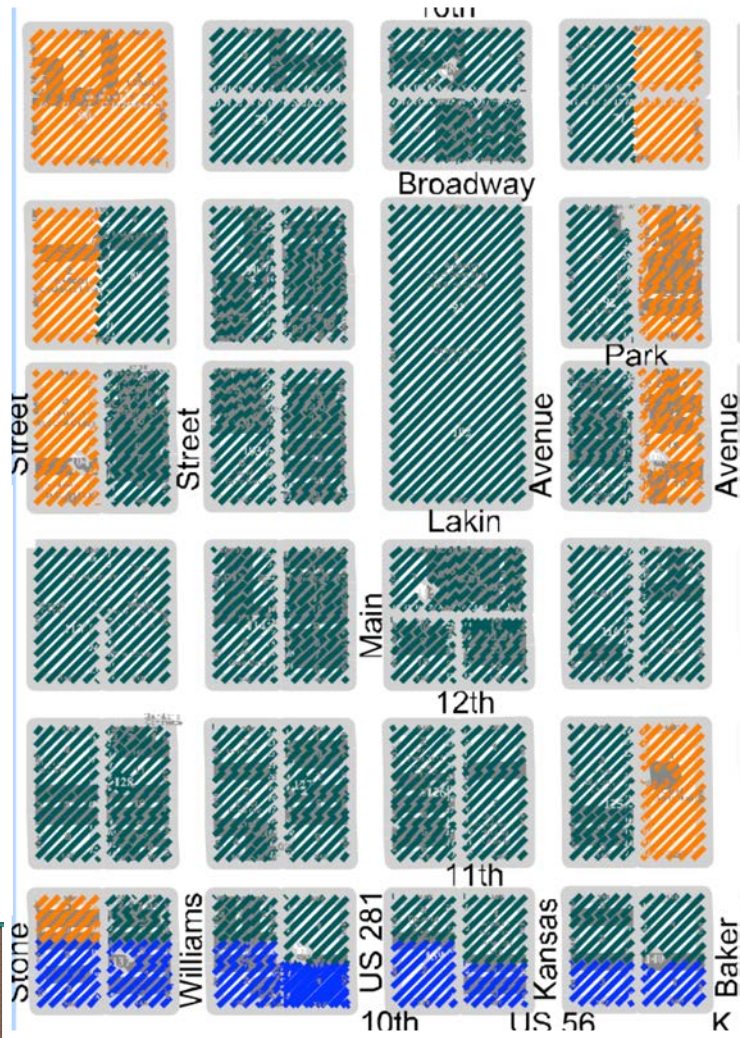
Housing with creativity

Building upon past success

Promote new opportunities

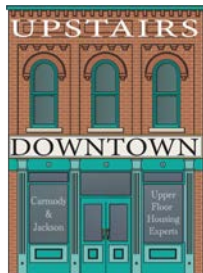


# SITE CHARACTERISTICS



## LEGEND

- R1
- R2
- R3
- R4
- C1
- C2
- C3
- M1
- M2
- M3
- P



## Zoning

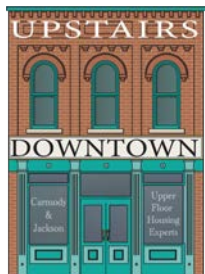
Zero lot line” development  
 Virtually all non-industrial uses permitted  
 No on-site parking needed

## Parking

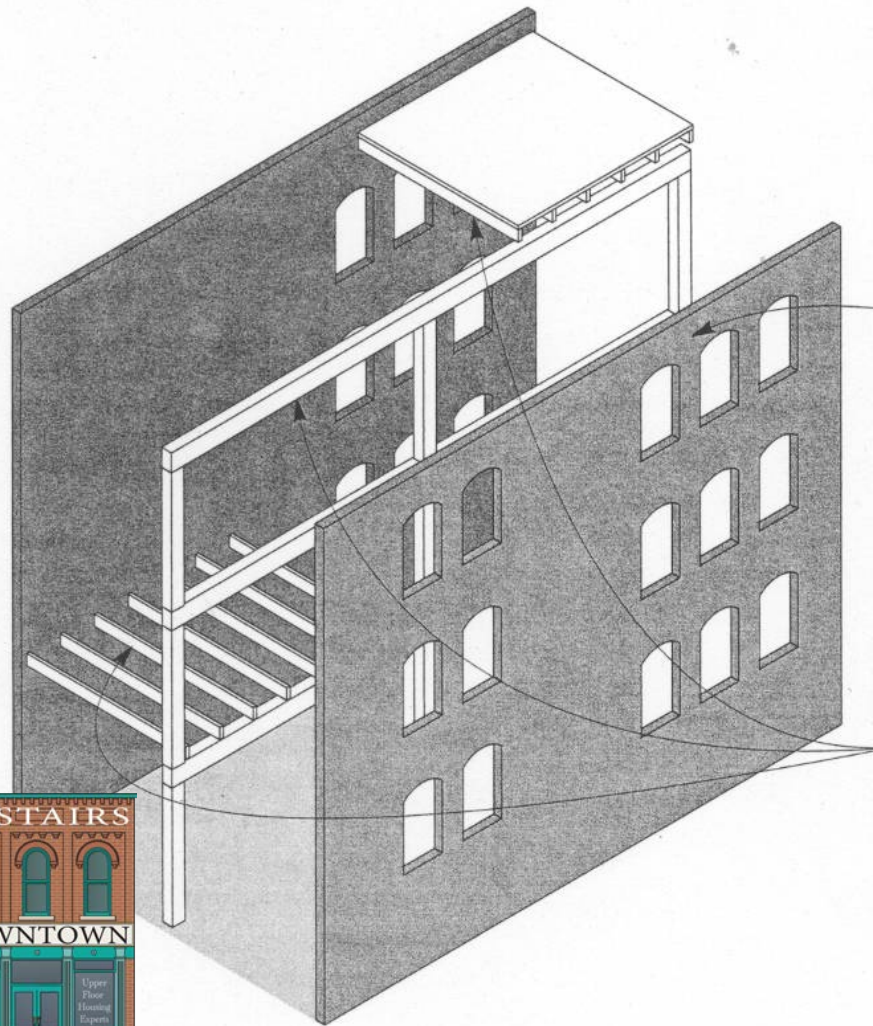
Always desired, not required  
 Small projects don’t generate much demand  
 Downtown residents don’t always work downtown  
 Higher demand for higher priced units and condos  
 City permit process for downtown residents

# BUILDING CHARACTERISTICS

- Size
  - Area
  - Height, 2 story or 3 story +
- Construction type (from building code)
- Structural system (check for adequacy)
- Architectural attributes that are code triggers
  - Number of exits
  - Access to light and ventilation



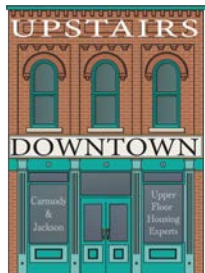
# BUILDING CHARACTERISTICS



- CONSTRUCTION TYPE (IBC 2000)
  - Type III (based upon fire resistance of building elements)
    - Exterior walls are noncombustible materials and interior building elements are of any material permitted by this code.

# COST FACTORS

- Accessibility - Elevator
- Structural capacity– Floor load  
Life Safety (Building Codes)
  - Sprinklers
  - Extra exit stairs
  - Seismic upgrades
- Environmental



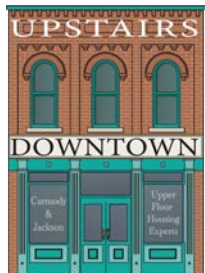
# CODES & STANDARDS



## Building Codes

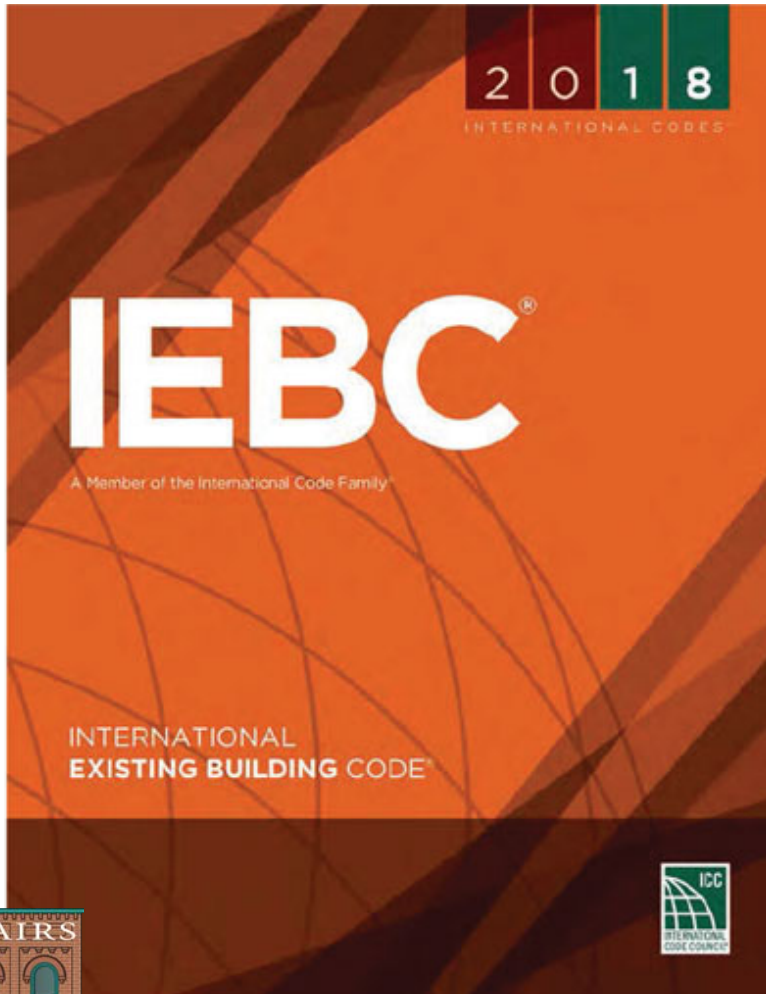
National Models, adopted by gov' t  
American with Disabilities Act (ADA)  
Secretary of the Interior' s Standards  
Code triggers based upon funding  
source

Ex: HUD funding and lead paint

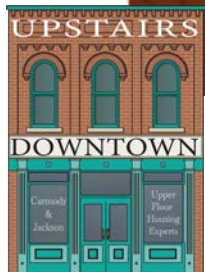


Know your local code officials

# EXISTING BUILDING CODE



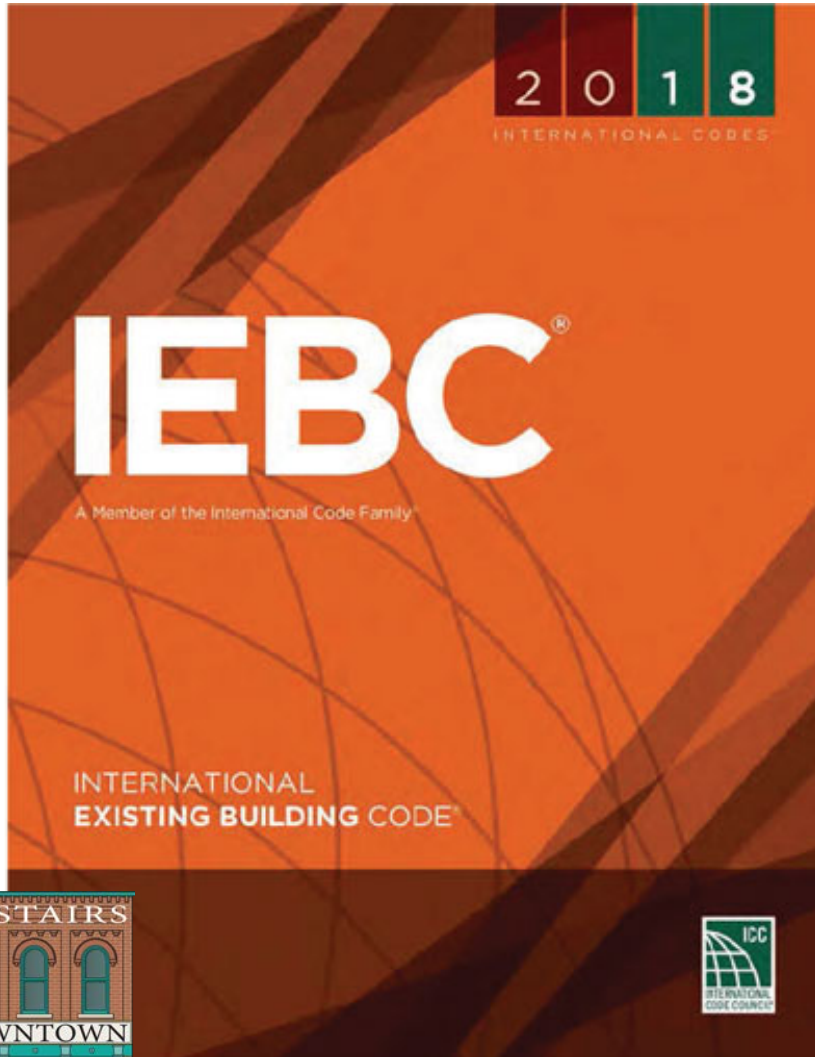
- International Existing Building Code (3 Yr cycle)
- Level of activity



Great Bend uses IEBC 2018



# EXISTING BUILDING CODE



Three Code Paths

Prescriptive

Work Area

Repairs

Alteration 1

Alteration 2

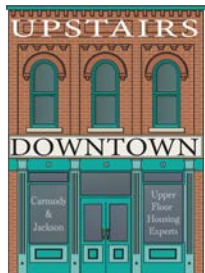
Alteration 3

Change of Use

Performance

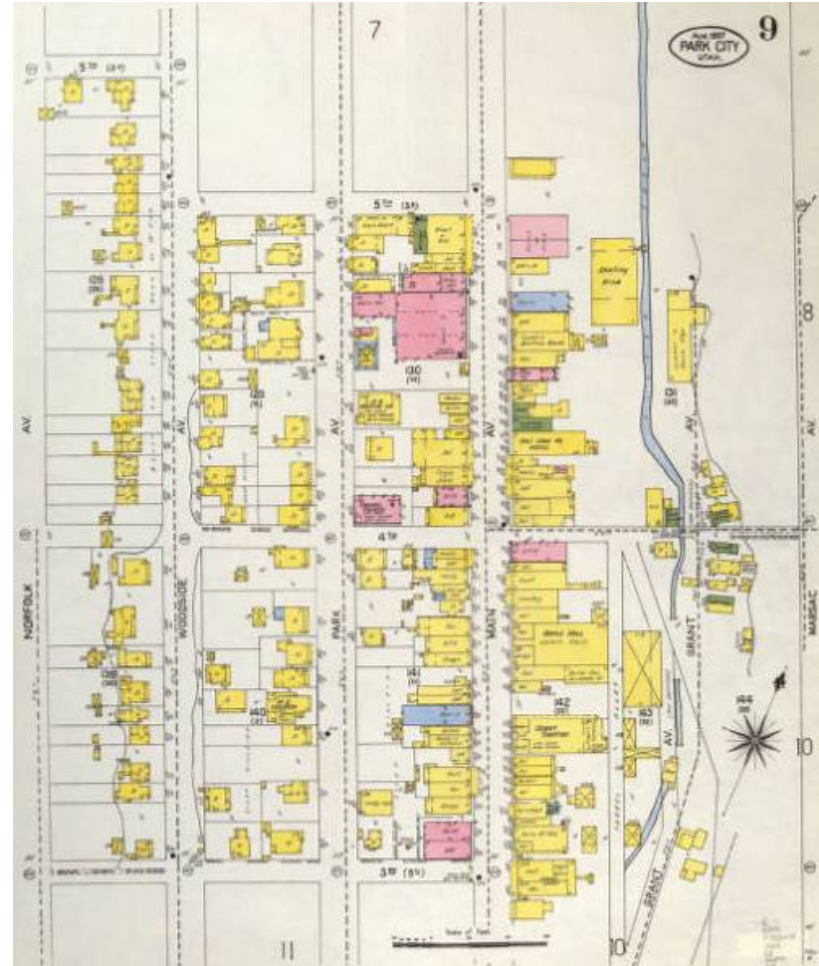
# BUILDING USE

- Current use (zoning classifications)
  - First floor
  - Upper floors
- Historic use (city directory, Sanborn map)
  - First floor
  - Upper floors
- Vacant (last known legal use)
- Kitchen and bath indicate residential use
- \* Identified historic use (Wisconsin)

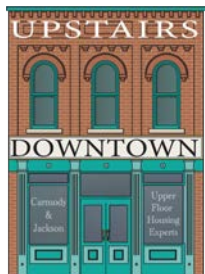


# HISTORIC USE

- Sanborn fire insurance maps are a valuable tool to evaluate a building's original fire safety design attributes.
- City directories



Sanborn maps available locally and online



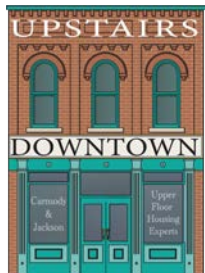
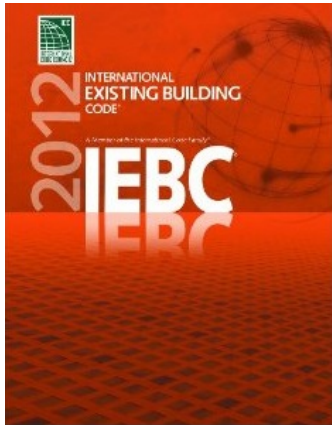
# STRUCTURAL CAPACITY

## STRUCTURE (IBC 2000)

Residential 40 psf.

Stairs and exits 100 psf.

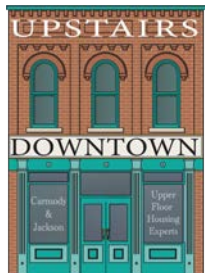
- One & two-family dwelling 40 psf.
- Office 50 psf., Corridor above 1<sup>st</sup> fl. 80 psf.
  - Lobbies and first floor corridor 100 psf.
- Original design (archaic materials)
- Condition assessment



Most building meet residential loading  
Industrial buildings exceed most loads

# CODES – FIRE SAFETY

- Fire Districts - Exterior Masonry Walls
- Compartmentalization (time rating factors)
- **Fire Detection and Alarms**
- Fire Suppression (sprinklers)
- Exits



# FIRE SAFETY & SPRINKLERS

Always desired

When are they Required?

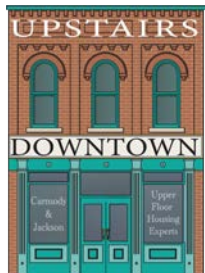
Change of Use as a trigger  
Level of Alteration

Commercial vs Residential systems

Who is the decision maker?

Building Code official

Fire Department



# FIRE PROTECTION

Classification of work

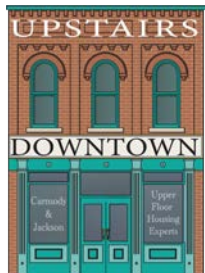
Construction type

Non-combustible ?

Change of use or not?

Fire separation between floors

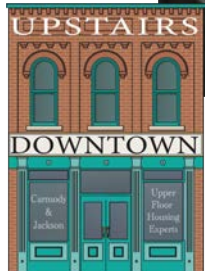
When does work on the second floor  
affect work on the first floor?



# CODES AND TIN CEIINGS



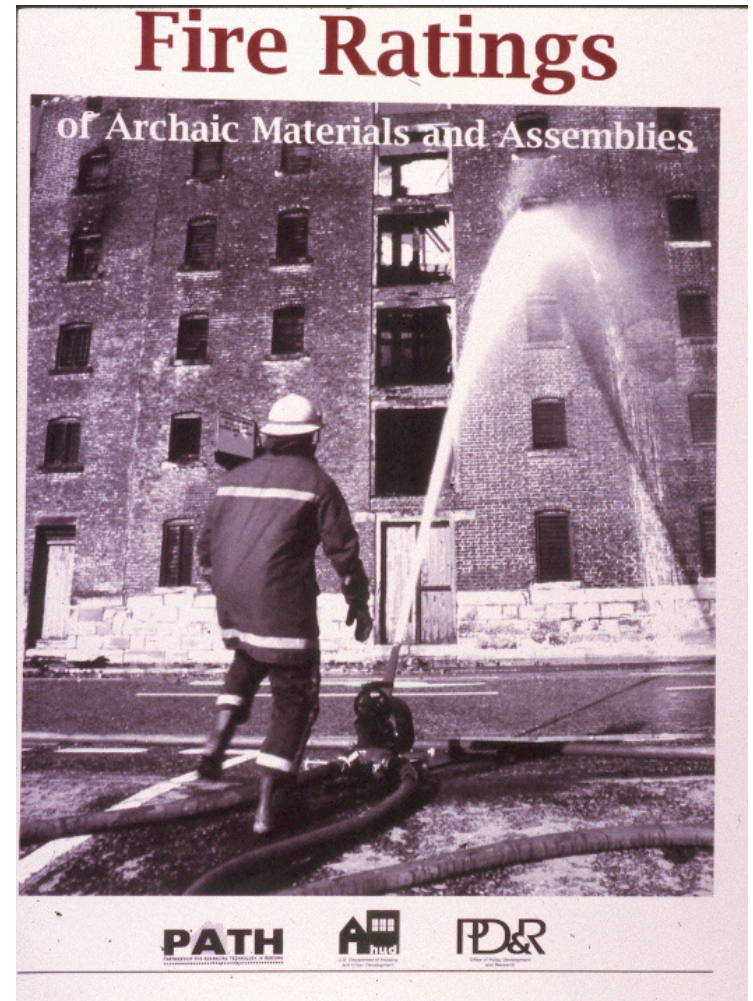
An archaic historic material with a 15-minute fire rating



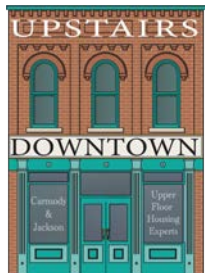


# FIRE RATINGS OLD MATERIALS

- Fire resistance ratings systems for building materials were the next step in the evolution of fire safety. Many historic and archaic materials were built before the modern rating systems were established.
- IEBC Resource A

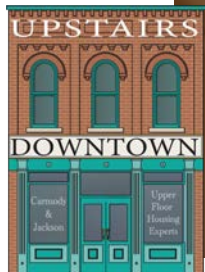


[www.huduser.org/portal/publications/destech/fire.html](http://www.huduser.org/portal/publications/destech/fire.html)

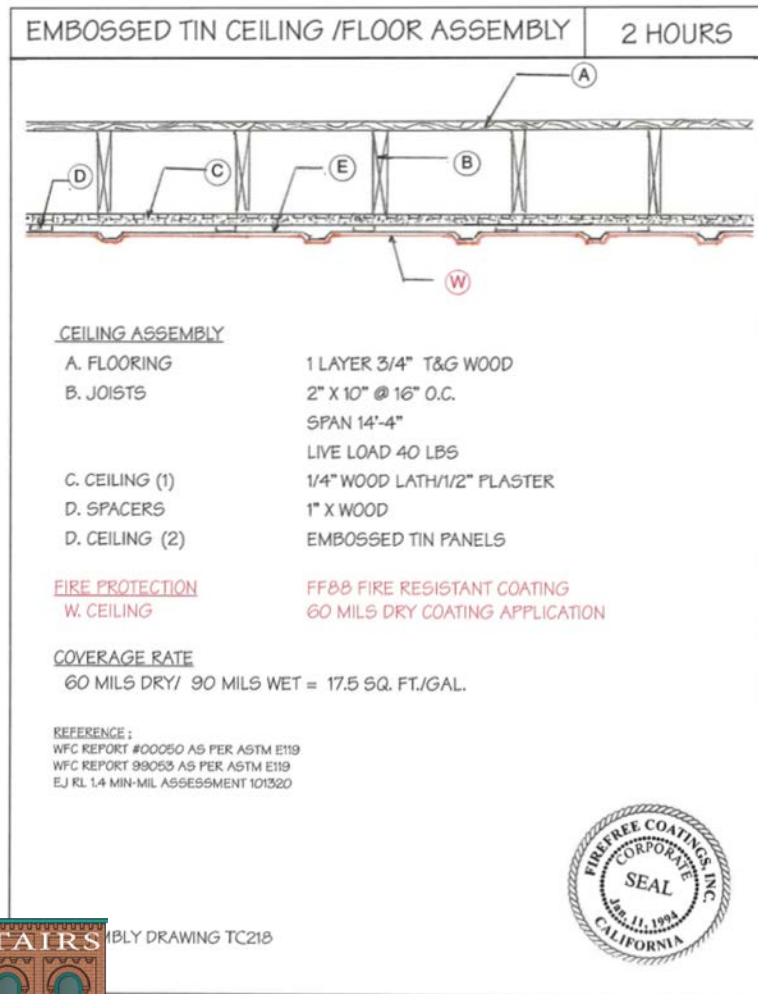


# CODE – SPRINKLERS

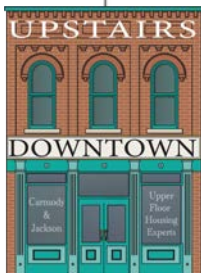
- IEBC Historic Buildings
- 1005.4 Occupancy separation
  - Occupancy separation of one hour omitted for buildings with approved sprinkler system throughout.



# TIN CEILING 2 HR RATING



1. Remove and reinstall over a new drywall
2. Cover with an intumescent coating
3. Increase rating on second floor



[www.firefree.com/assembliesdrawings.php#WoodFloorCeiling2Hr](http://www.firefree.com/assembliesdrawings.php#WoodFloorCeiling2Hr)

# PERFORMANCE COMPLIANCE

## IEBC – Chapter 13

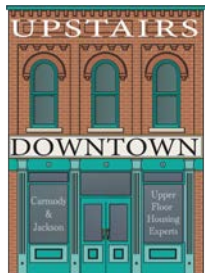
Method of quantifying safety improvement

Less prescriptive

Requires written report by a design professional

The role of the architect

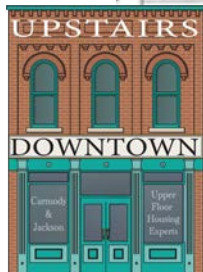
The role of the code official



# PERFORMANCE COMPLIANCE

SAFETY PARAMETERS	FIRE SAFETY (FS)	MEANS OF EGRESS (ME)	GENERAL SAFETY (GS)
1301.6.1 Building Height 1301.6.2 Building Area 1301.6.3 Compartmentation			
1301.6.4 Tenant and Dwelling Unit Separations 1301.6.5 Corridor Walls 1301.6.6 Vertical Openings			
1301.6.7 HVAC Systems 1301.6.8 Automatic Fire Detection 1301.6.9 Fire Alarm System			
1301.6.10 Smoke control 1301.6.11 Means of Egress 1301.6.12 Dead ends	**** **** ****		
1301.6.13 Maximum Exit Access Travel Distance 1301.6.14 Elevator Control 1301.6.15 Means of Egress Emergency Lighting	**** ****		
3412.6.16 Mixed Occupancies 3412.6.17 Automatic Sprinklers 3412.6.18 Standpipes 3412.6.19 Incidental Accessory Occupancy		**** + 2 =	
<b>Building score — total value</b>			

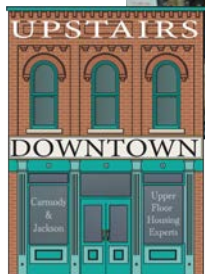
\*No applicable value to be inserted.



# EGRESS REQUIREMENTS

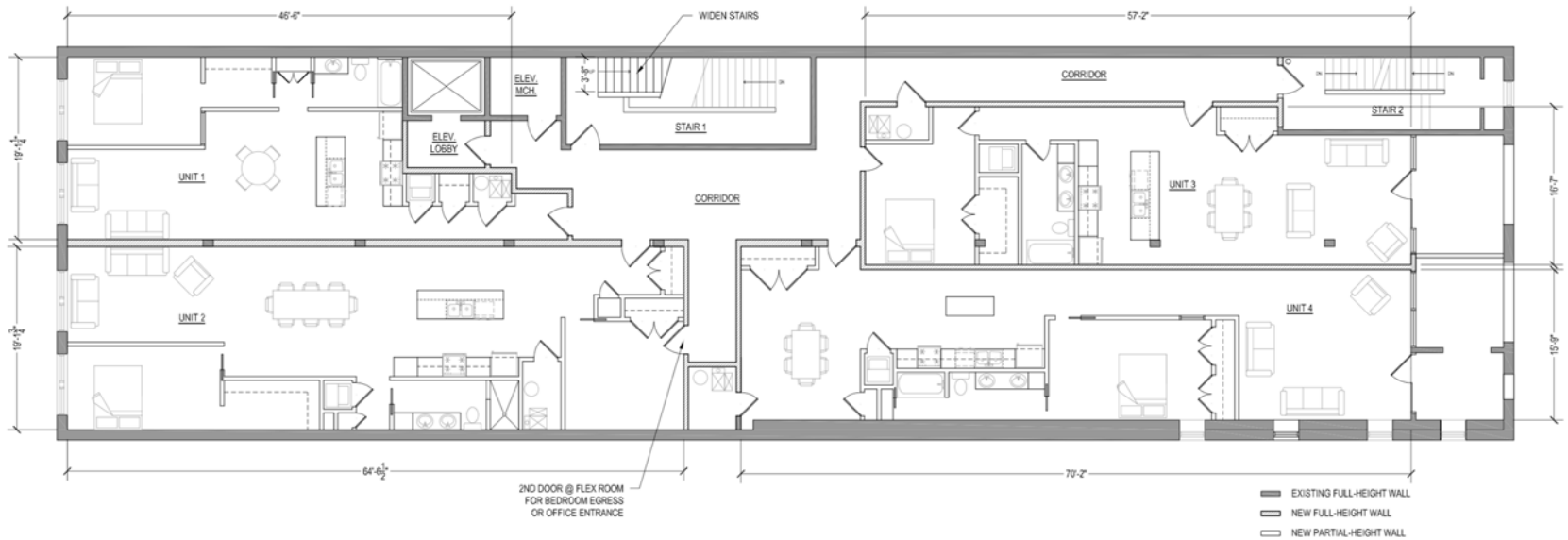


Three-story buildings require two means of egress from the third floor. Exits must have a direct connection to a public right-of-way.

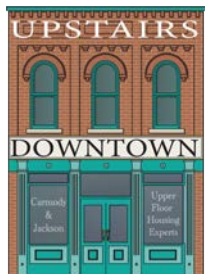


# EGRESS REQUIREMENTS

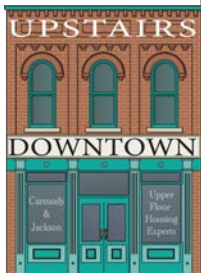
Two-story, single exit permitted for up to 4 units



Note: Second staircase at the rear is needed for the third – fifth floors.



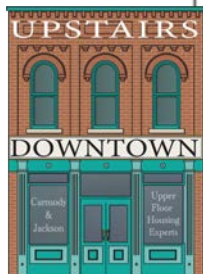
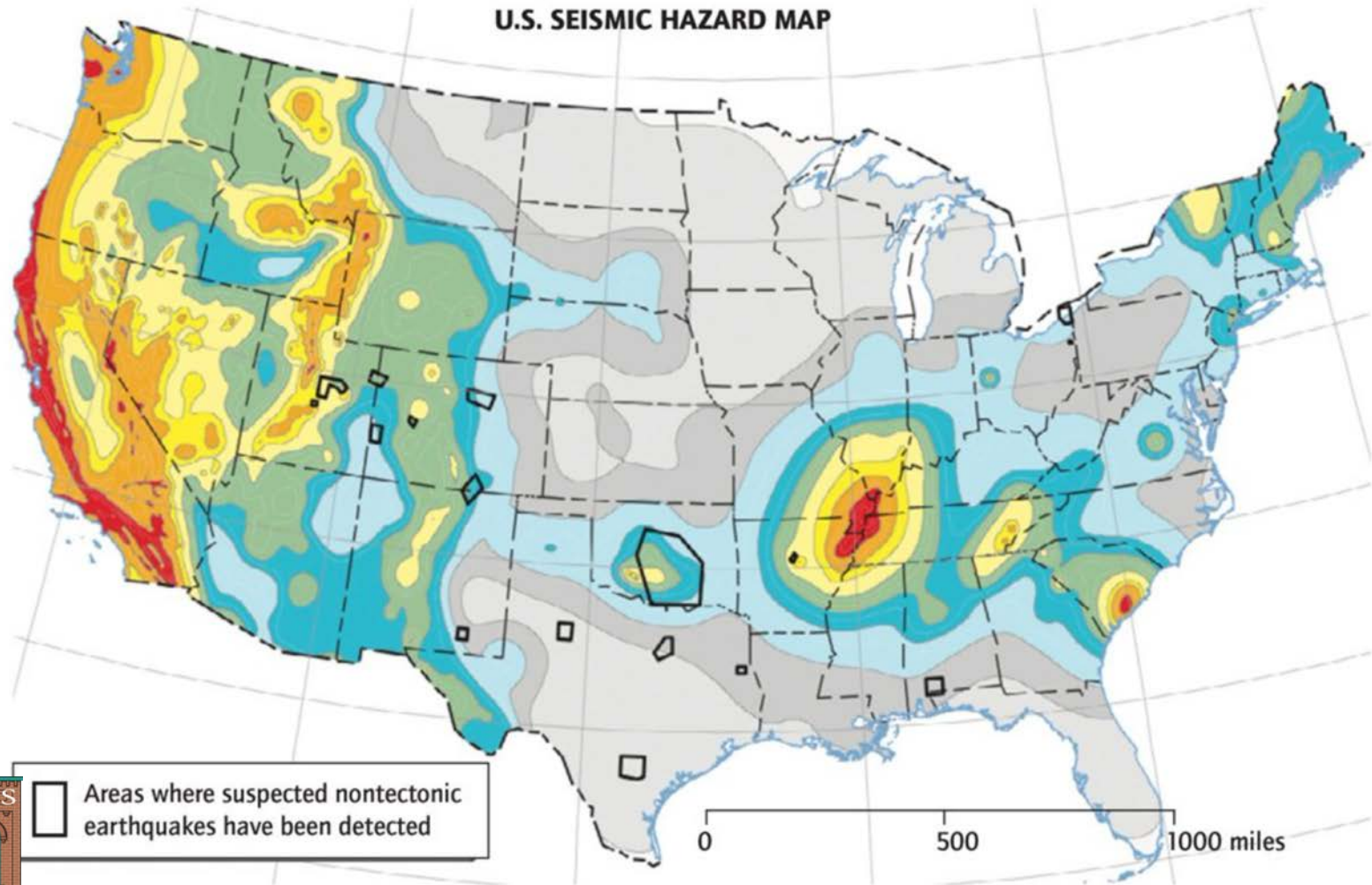
# THREE FLOORS, ONE EXIT?



Third floor unit has entry foyer on the second floor (duplex) Rear balcony as an “area of refuge”



# SEISMIC HAZARD MAP



# SEISMIC RETROFIT

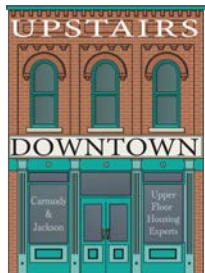
Structural System Trigger

Expenditures based upon assessed value



Preservation Brief 41

Seismic Retrofit of Historic Buildings



# BUILDING ACCESSIBILITY

## The Elevator Question

Americans with Disabilities Act (ADA)

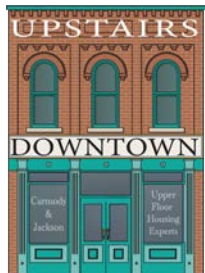
Applies to public accommodations

Is retroactive starting in 1990

Readily achievable test (economics)

State Accessibility Codes

Building Permit “trigger”



# BUILDING ACCESSIBILITY

## ADA

Elevator **not** required for buildings less than three stories if:

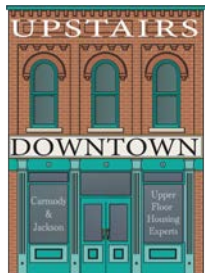
Under 3,000 sq. ft. except for:

Shopping center

Medical office

Transit Facilities

**ADA does not apply to housing**

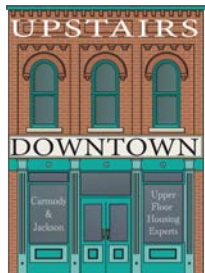


# BUILDING ACCESSIBILITY

- Fair Housing Act (1991)

**Does not apply to older buildings.**

The Act requires all newly constructed multi-family dwellings of four or more units intended for first occupancy after March 13, 1991, to have certain features: an accessible entrance on an accessible route, accessible common and public use areas, doors sufficiently wide to accommodate wheelchairs, accessible routes into and through each dwelling...



# BUILDING ACCESSIBILITY

Elevator needed for **marketability** when:

More than three stories

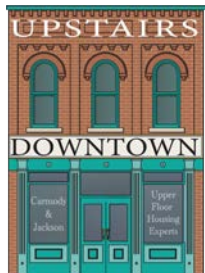
All age marketing

Higher market potential

More than twenty units – ICC

More than ten units – test economics

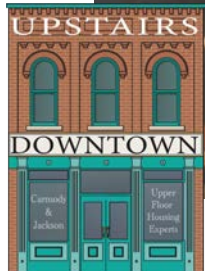
Two story buildings don't need an elevator to be competitive



# LIGHT & VENTILATION



Building depths greater than 80 feet are more difficult for residential use.



# LIGHT & VENTILATION

Natural light requirement - 8% of floor area

Natural ventilation requirement - 4% of floor area

## EXAMPLE

### WINDOW AREA

3' X 6' = 18 sq. ft. per window  
x 3 windows

54 sq. ft. of window glazing

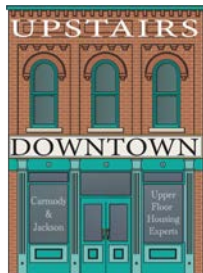
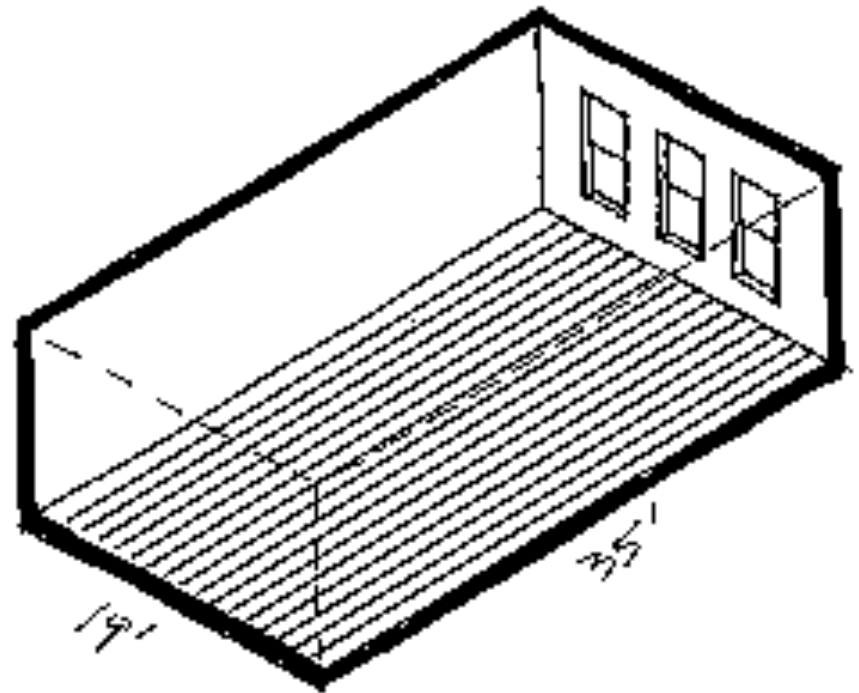
27 sq. ft. of vent opening

### MAXIMUM ROOM SIZE

54 sq. ft. is 8 % of  
675 sq. ft.

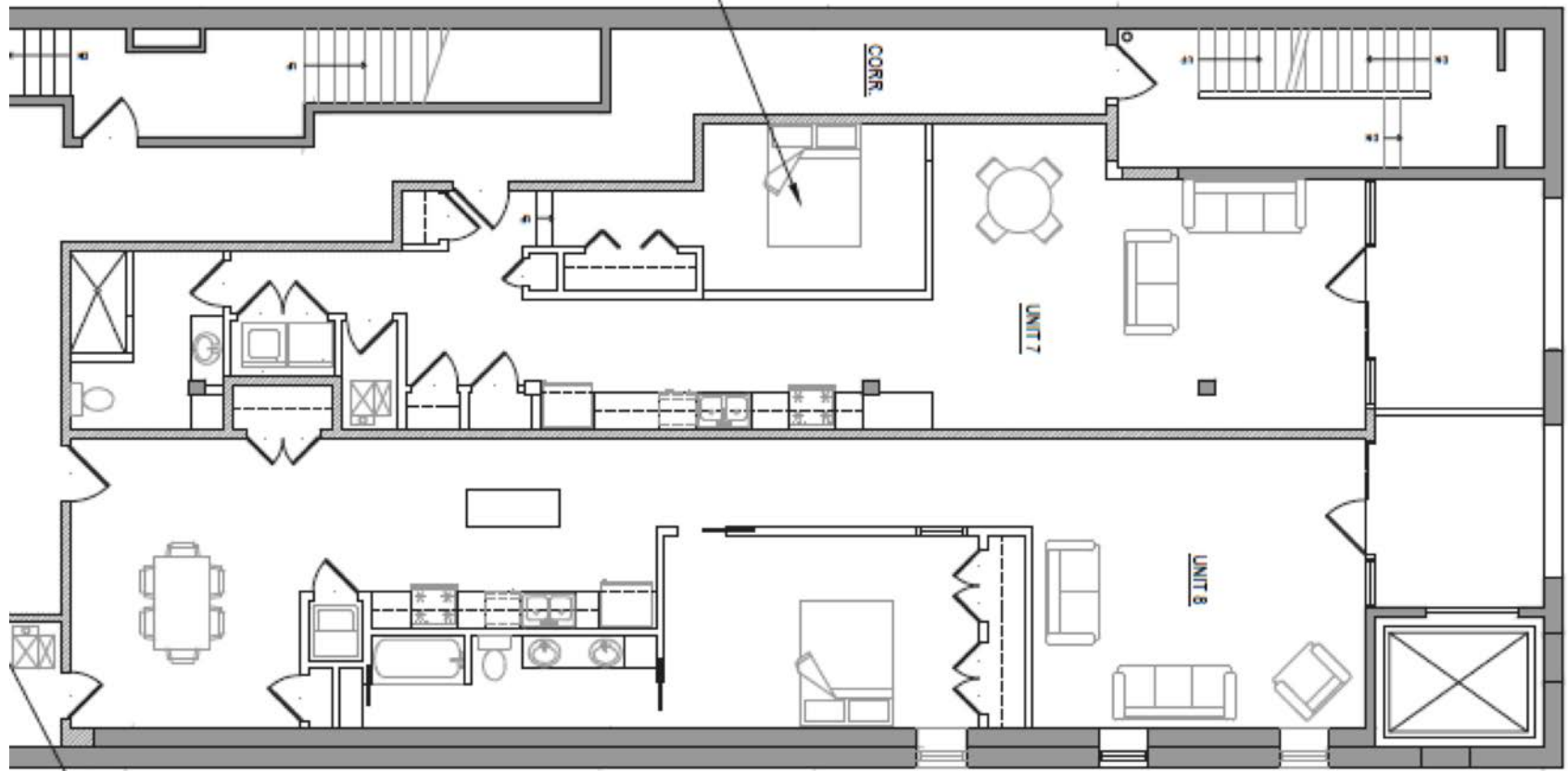
### ROOM DIMENSION

19' wide x 35' long



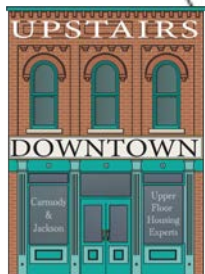


# LIGHT & VENTILATION

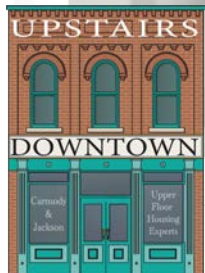


BR Wall open above for “borrowed light and vent.”

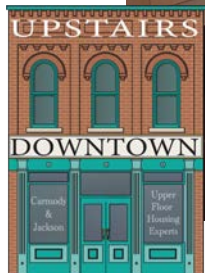
Note: This building is fully sprinklered.



# Unit with “borrowed light” bedroom

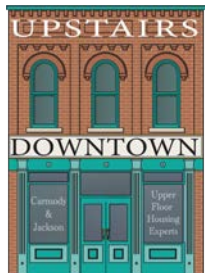


# Unit with “borrowed light” living room



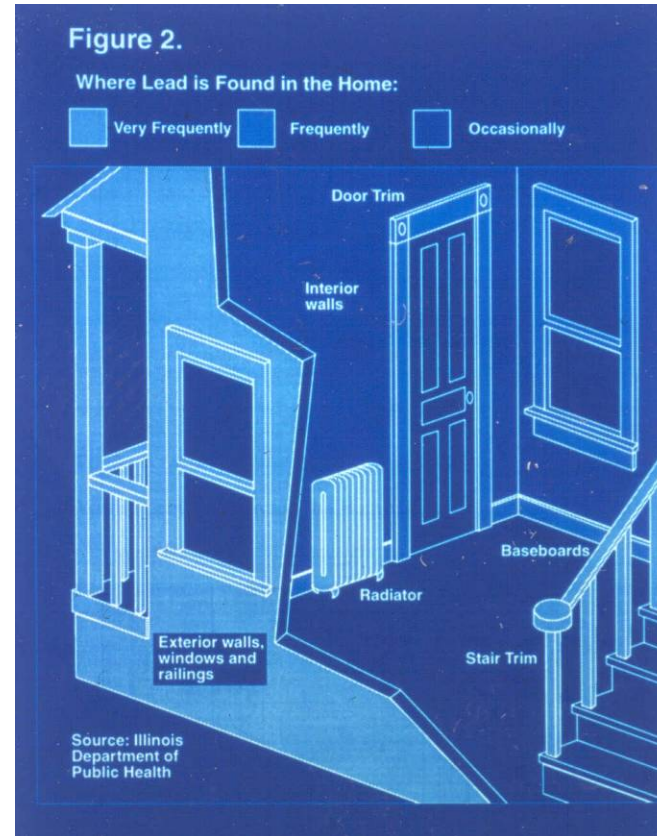
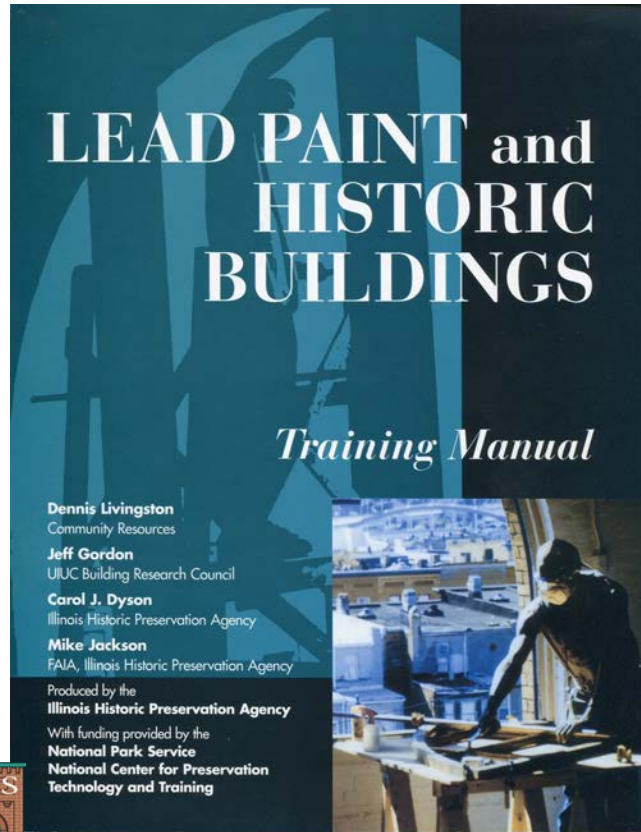
# ENVIRONMENTAL ASSESSMENT

- Asbestos
- Lead Paint
- Underground storage tanks
- Other
  - Prior industrial use (Sanborn map, history)
  - Bird droppings
  - Mold

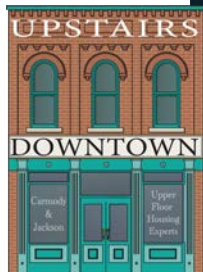


# LEAD PAINT

- LEAD PAINT and Historic Buildings

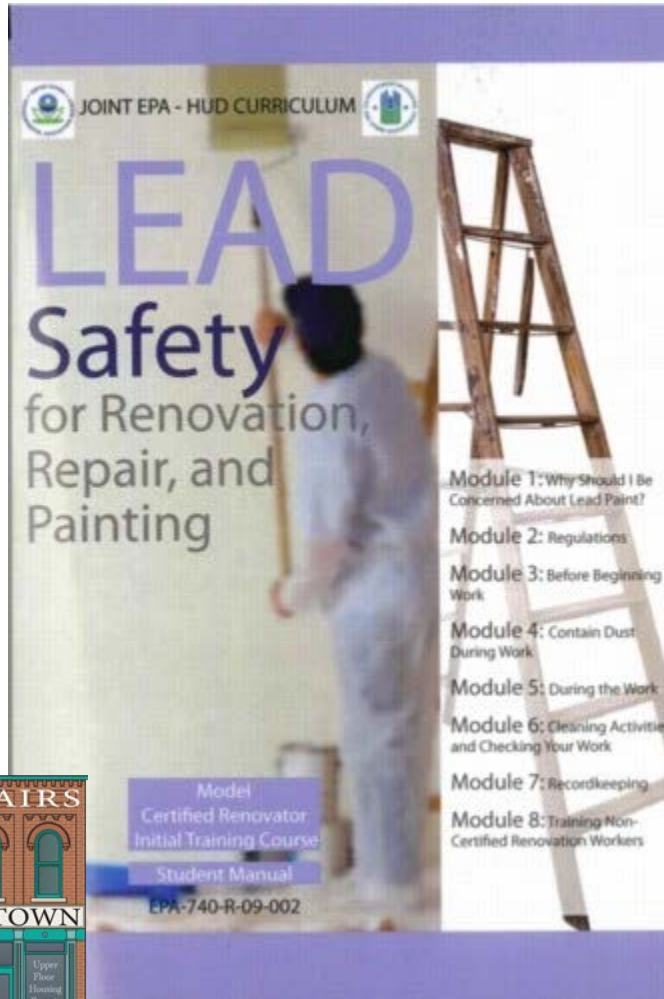


<https://www2.illinois.gov/dnrhistoric/preserve/pages/leadpaint.aspx>



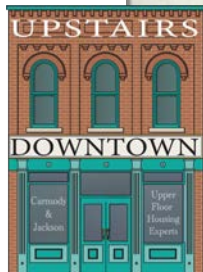
# EPA

## Renovation Repair & Painting



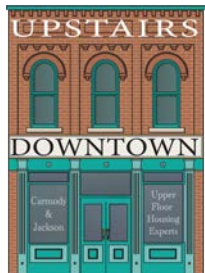
Residential units in  
pre-1978 buildings

Lead-safe work practices  
Contractor certification

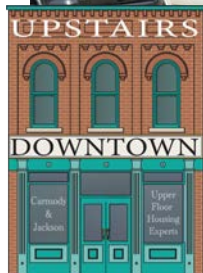


# HISTORIC CLASSIFICATION

- Historic designation status:
  - National Register of Historic Places
  - Local Landmark
    - Individual listing or
  - Contributing building to a district
  - Eligibility for designation (50 years +)



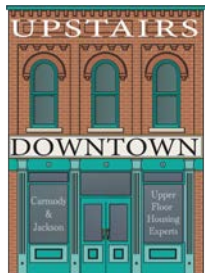
# Great Bend KS Proposed DOWNTOWN HISTORIC DISTRICT





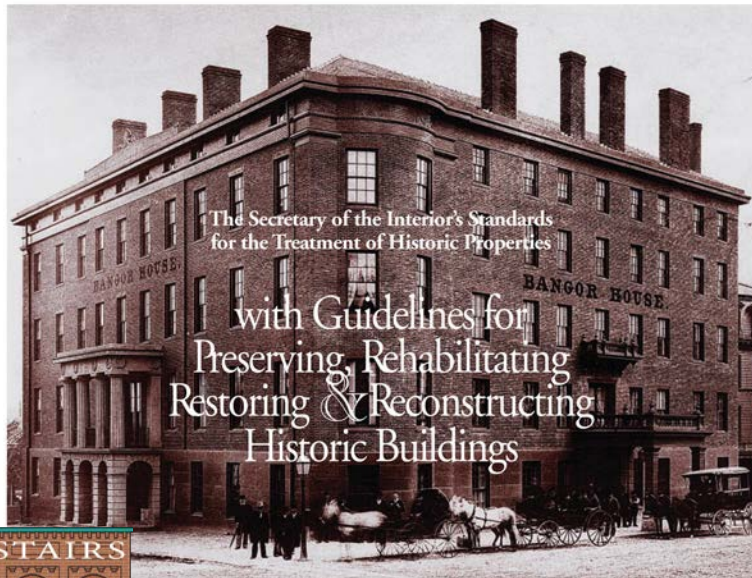
# HISTORIC BUILDING & \$\$\$s

- Federal Tax Credits for National Register properties is the largest historic preservation program in the country
- State Tax Credits are really working
- Tax Credits work like a rebate
- Equal to 20% of qualified rehab expenses
- Contact SHPO
- Owner should consult accountant.
- IRS Restrictions apply



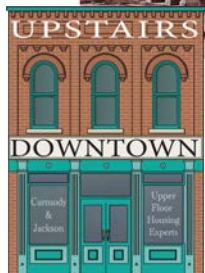
# HISTORIC DESIGN REVIEW

- Secretary of the Interior's Standards for Rehabilitation (Historic Building Code)
- Local commissions review of exterior



SHPO review if project has state/federal funding, permits or licensing

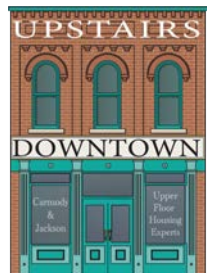
SHPO review of entire building.



# ARCHITECTURAL FEATURES



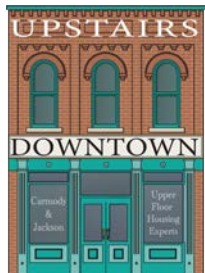
- Architectural elements
- Fireplaces
- High ceilings



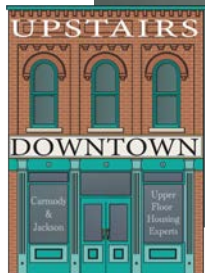
# ARCHITECTURAL TREATMENT



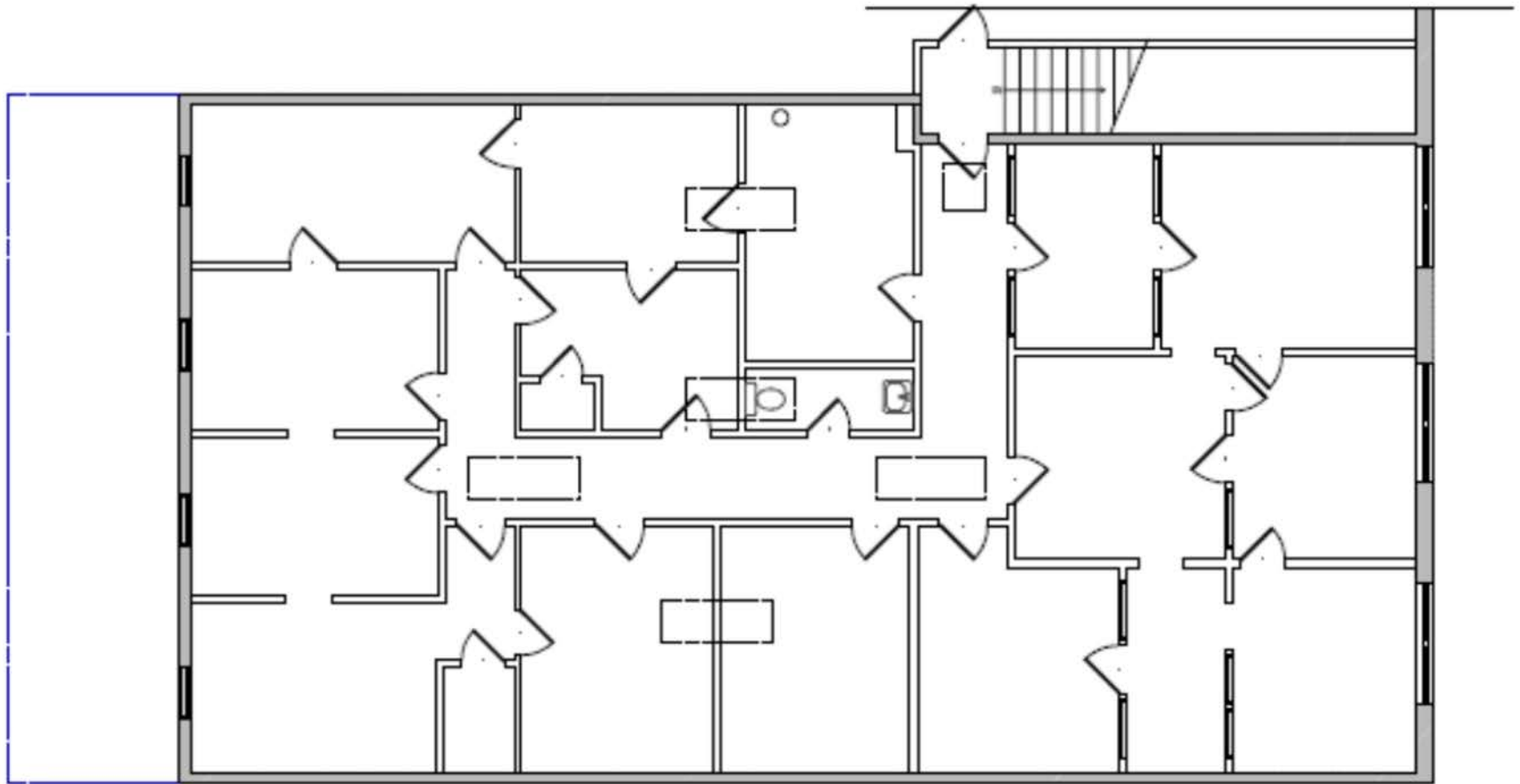
- Exposing the brick in historically finished spaces does not meet Preservation Standards.



# HISTORIC INTERIOR

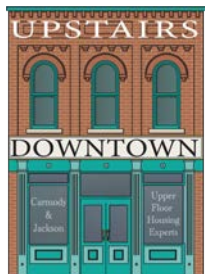


# OFFICE BLDG CONVERSION

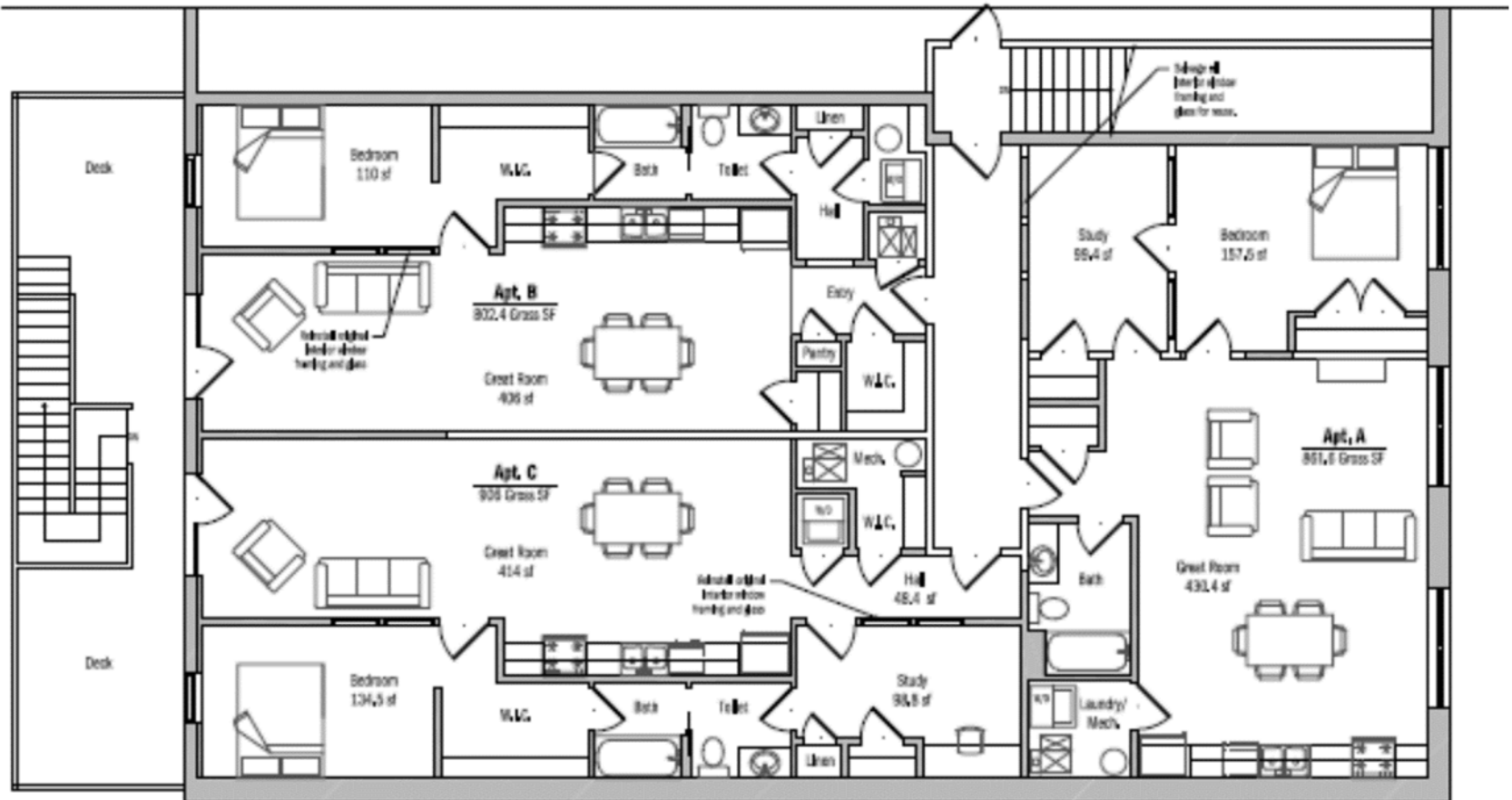


Existing Upper Level Floor Plan

## Existing Plan

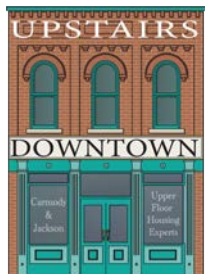


# OPEN PLAN CONVERSION



Existing Upper Level Floor Plan

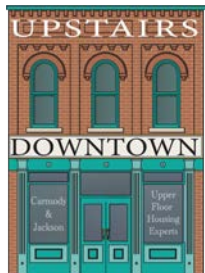
Proposed Plan 3 units plus second stair



# LIFE CYCLE ASSESSMENT LCA



Quantifying the Value of Building Reuse  
National Trust for Historic Preservation  
Preservation Green Lab





# LIFE CYCLE ASSESSMENT LCA

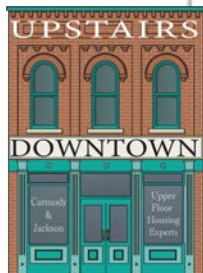
Table 12. Number of Years Required for New Buildings to Overcome Climate Change Impacts from Construction Process

According to this study, it takes 10 to 80 years for a new building that is 30 percent more efficient than an average-performing existing building to overcome, through efficient operations, the negative climate change impacts related to construction. This table illustrates the number of years required for different energy efficient, new buildings to overcome impacts.

Building Type	Chicago	Portland
Urban Village Mixed Use	42 years	80 years
Single-Family Residential	38 years	50 years
Commercial Office	25 years	42 years
Warehouse-to-Office Conversion	12 years	19 years
Multifamily Residential	16 years	20 years
Elementary School	10 years	16 years
Warehouse-to-Residential Conversion*	Never	Never

Main Street Mixed Use

42 – 80 Years



# ENERGY CONSERVATION



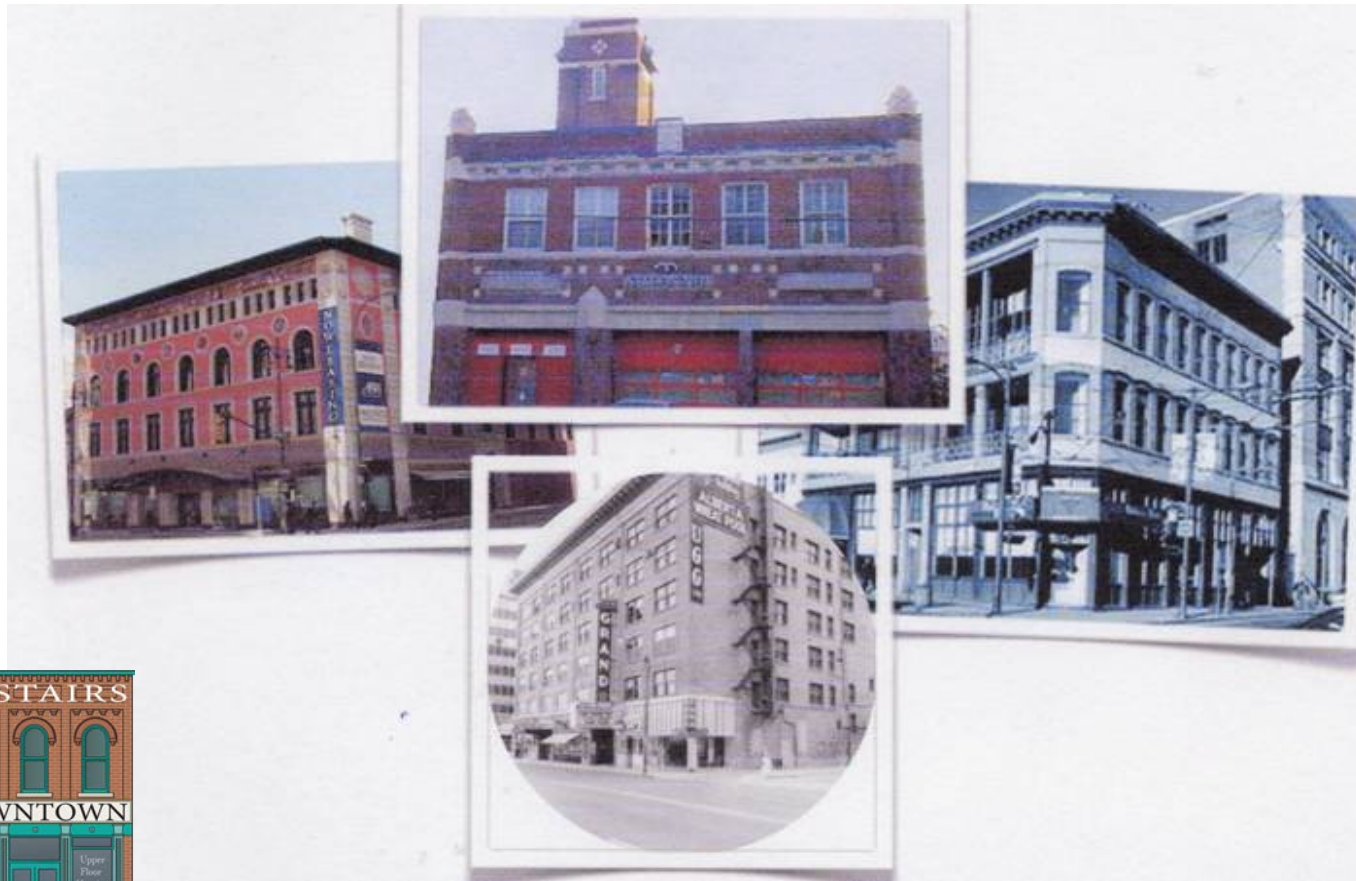
Energy Conservation codes are getting more stringent.

Higher efficiency equipment is needed.

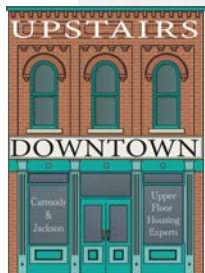
Insulating outside walls is generally needed to meet new code requirements.

# ENERGY EFFICIENCY

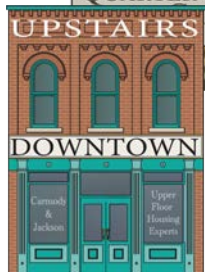
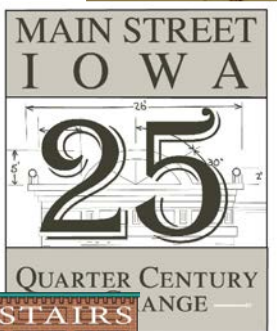
Renovated historic buildings are just as energy efficient as new construction.



**Parks  
Canada  
Study**



# CREATING ENERGY EFFICIENT MAIN STREETS

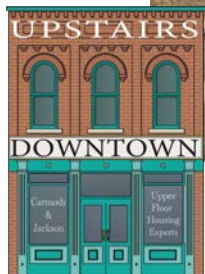


[www.iowaeconomicdevelopment.com/userdocs/documents/ieda/  
CreatingEnergyEfficientMainStreets.pdf](http://www.iowaeconomicdevelopment.com/userdocs/documents/ieda/CreatingEnergyEfficientMainStreets.pdf)

# REACHING NET ZERO

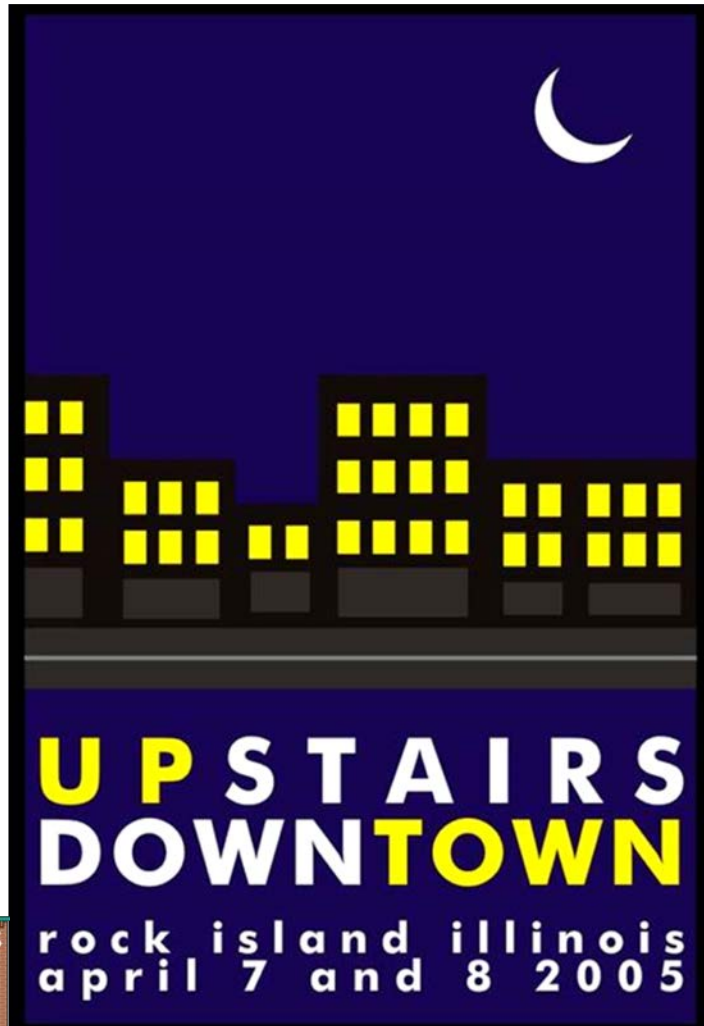
## McKeesport PA YMCA Net Zero Renovation

\$ 125 sq. ft.



Eight inches of insulation inside the brick walls.

# PROMOTION



**UP**

Downtown is looking

Downtown Springfield, Inc.  
7th Annual Upper Story Tour

Thursday, May 4, 2006  
4:30pm to 7:30pm

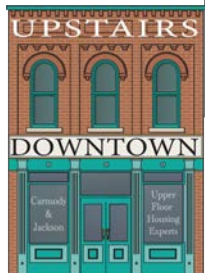
Reception at the Inn at 835  
835 S. Second Street

Sponsored by Conn's Catering & Events  
Illinois Times

\$5 for members  
\$7 for non-members  
Tickets available in advance at DSI office  
and during the tour at the Buck's Building.

For more information:  
217.544.1723  
[www.downtownspringfield.org](http://www.downtownspringfield.org)

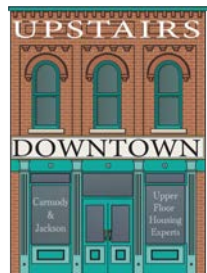
Host an Upstairs Downtown tour



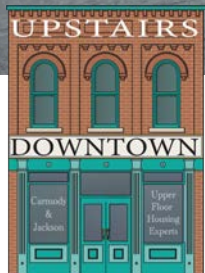
# ANNUAL TOUR



Showcase  
successes  
Present  
opportunities



# OPPORTUNITIES



THANK YOU