



The 4⁺2plex

A Modular Passive House for an American Urban Renaissance, PhiusCon2021

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www.essentialhabitat.com

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City of Los Angeles

2021 Housing Competition



Goals

- Promote Housing Affordability
- New Paths to Homeownership
- Innovative Models of Sustainable Residential Architecture
- Confront Historical Patterns of Racial & Environmental Injustice in Housing Policy
- Develop Healthy Models of Post-COVID Living

City of Los Angeles

2021 Housing Competition



Program

- 50 x 150 ft Midblock Lot, No Setbacks Required
- 4 Units, 350 SF Min., at Least 1 Unit 1,000+ SF
- 4,000 SF Total Max.
- Affordable Housing Bonus:
 - 4,500 SF (5 Units), 5,000 SF (6 Units)
- 2 Stories, 33 FT Max. Height
- May Assume a Rear Alley
- 2 Covered Parking Spaces Min.

City of Los Angeles

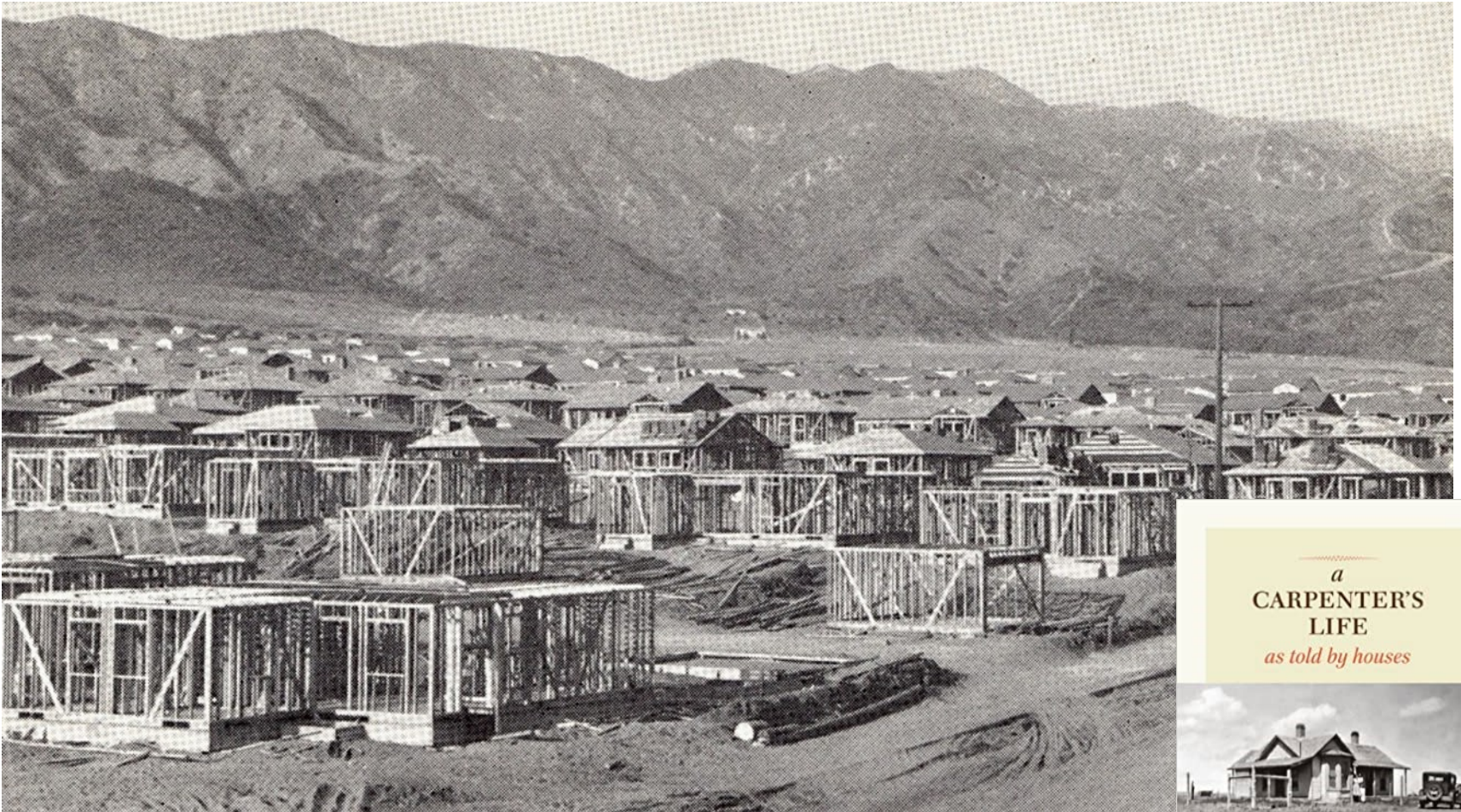
2021 Housing Competition



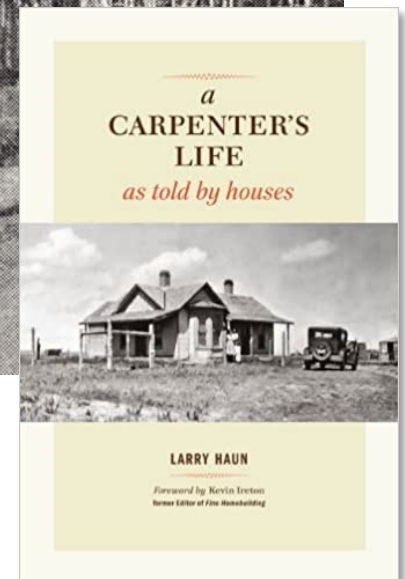
Observations (6+ Hours Listening Sessions)

- Listen!
 - Needs Vary (Multi-Generational, etc.)
 - Community Input & Engagement
 - “Better Neighborhoods, Same Neighbors”
- ➡ Flexible & Cost-effective Approach

But Cities Aren't Built of Custom Homes...



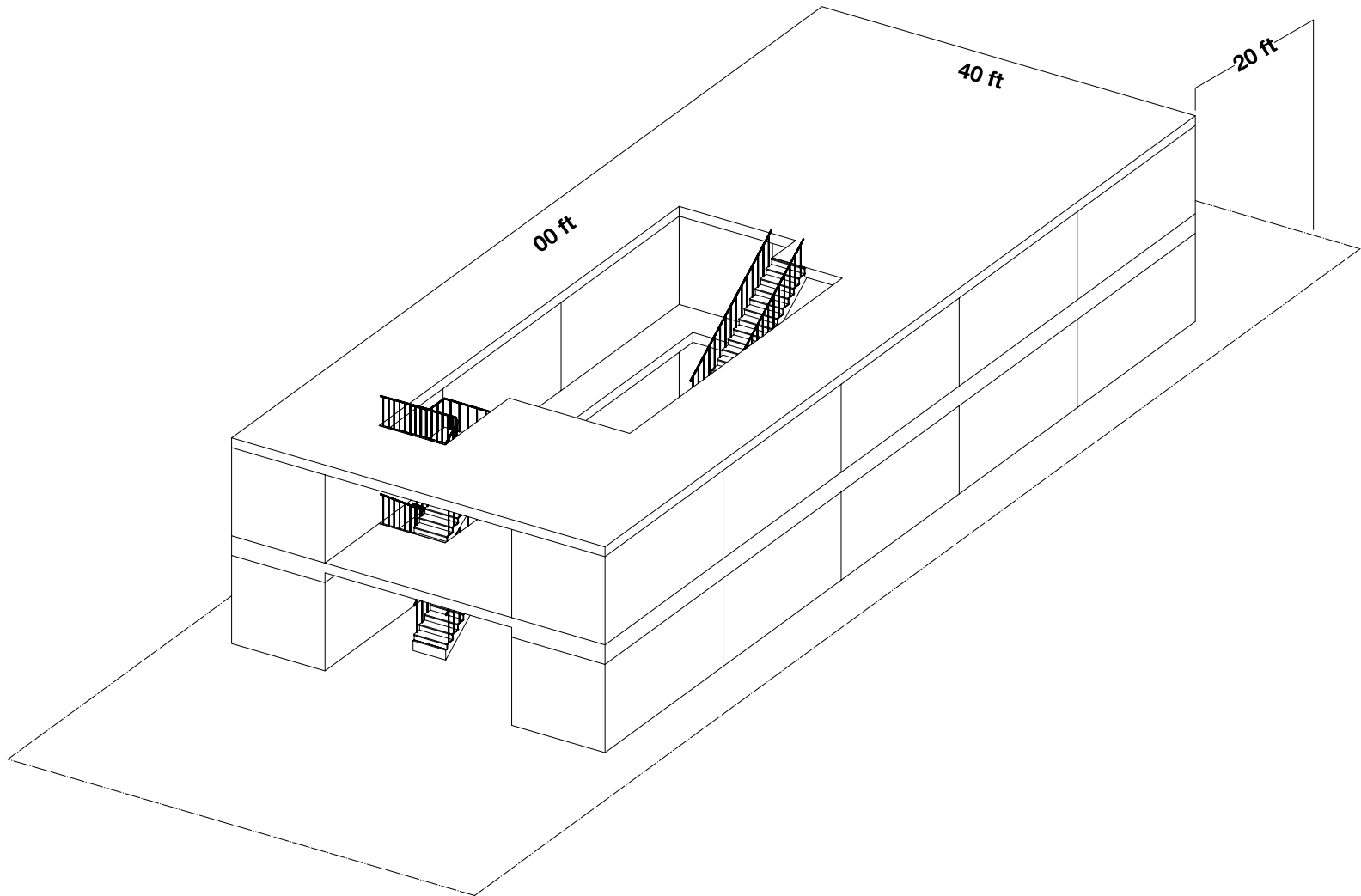
San Fernando Valley, Los Angeles 1949



Proposal

- Passive House
- Low-GWP Materials & Water Conservation
- Modular Design for “Pocket Production” (Mass Customization)
- Flexibility for Future
- Elevate the Dingbat!





Schematic Design

**2 Story, 4x5 Grid of 28 10x20 ft Modules (4,800 SF + 800 SF Enclosed Parking @ Rear)
20x60 ft Interior Courtyard, Exterior Circulation & Rooftop Patio**



Details

All-Electric Passive House

Insulated FlyAsh Slab, FSC Lumber, 3½" Cellulose, 2-5" Stone Wool, Wood Fiber, or Straw

On-Site EIFS (Lime Plaster) for Architectural Expression/Customization

Structured Plumbing, Drainwater Heat Recovery, Graywater Harvesting



“Solar Trellis” above Roof Deck

55 kW Bifacial PV (~20% Higher Output, Provides Shade & Admits Light)

Equivalent to 110% of 4,000 SF Footprint

Rain Tight, Sloped to Interior for Rainwater Harvesting

Interior Courtyard Open to Sky



Transportation

4 Enclosed Garages, 4 Tandem Spaces

EV Charging

“Transit-ish” Oriented Development:

Modules Can Be Stacked Higher @ Greater Density in Strategic Locations

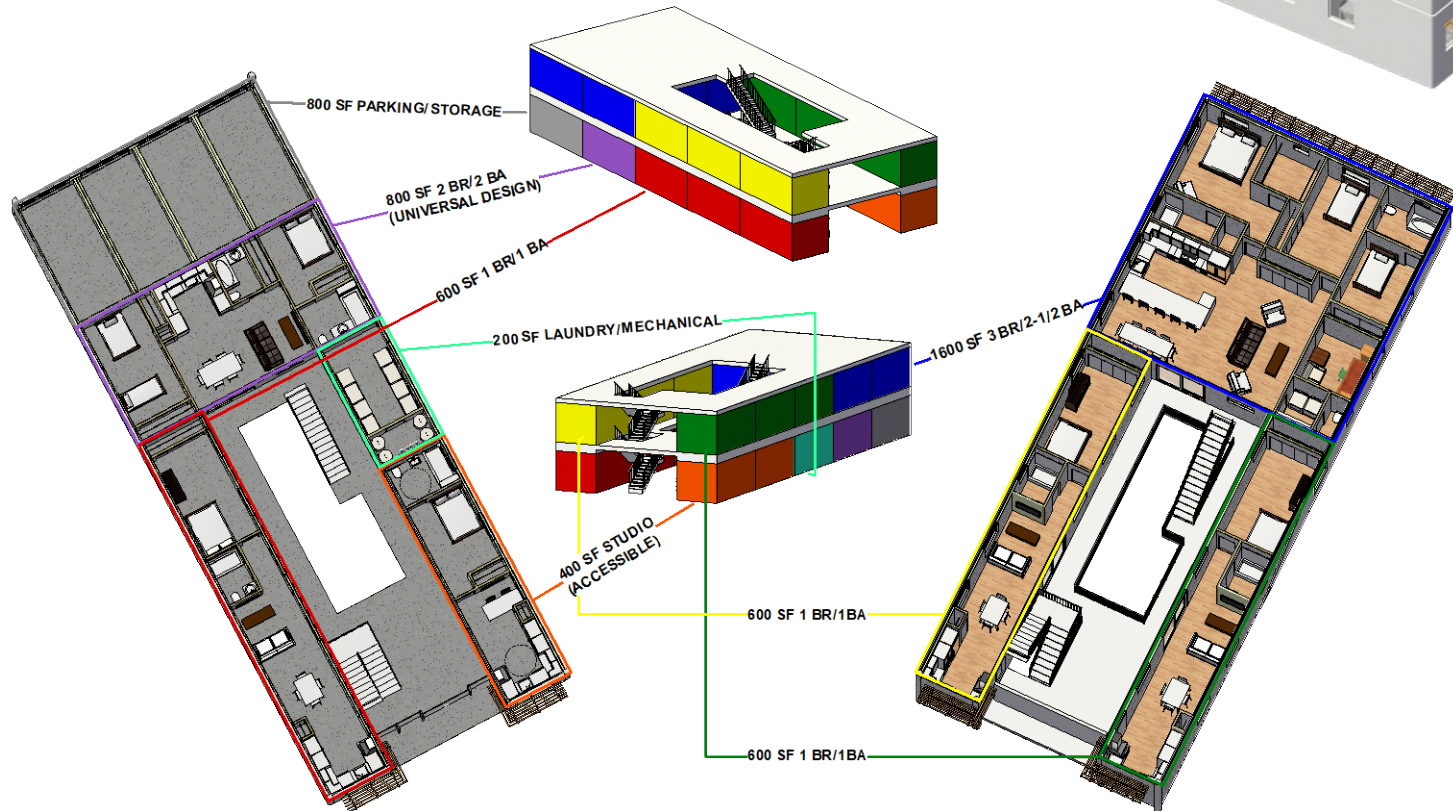
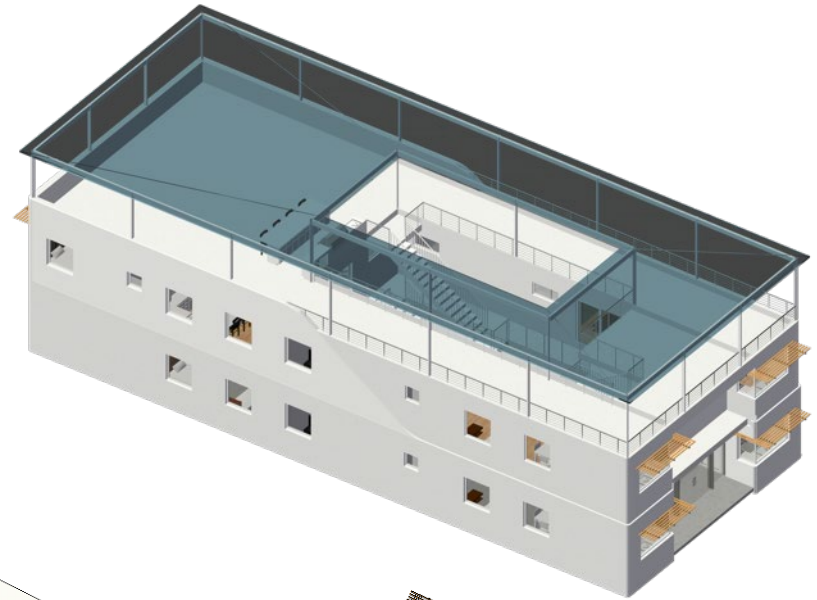
Possible Layout

1st Floor

800 SF 2 BR/2 BA (UD)
600 SF 1 BR/1 BA
400 SF Studio (ADA)
200 SF Laundry/Mech.
800 SF Garage/Storage

2nd Floor

1600 SF 3 BR+Office/2½ Ba
2) 600 SF 1 BR/1 BA
Rooftop Patio
Outdoor Kitchen
Raintight “Solar Trellis” (55 kW PV)



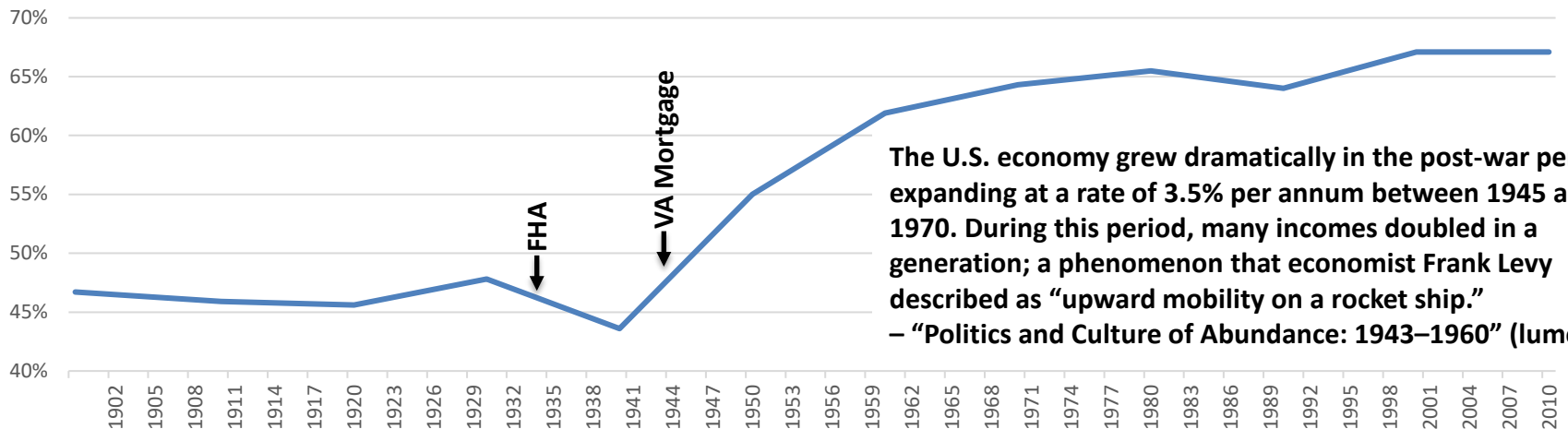
The History of US Housing Finance



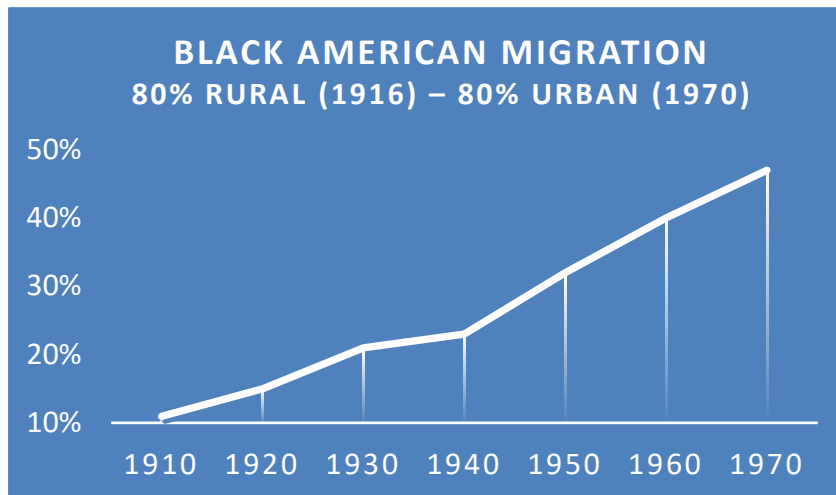
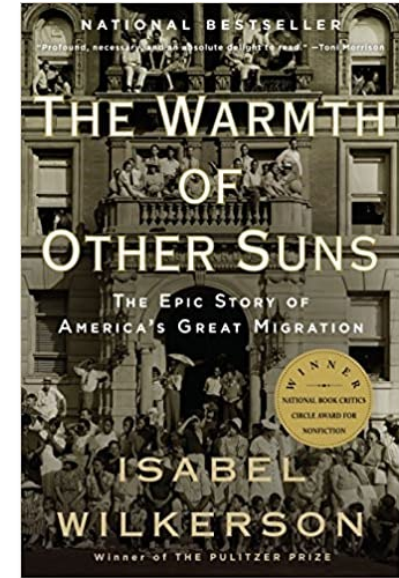
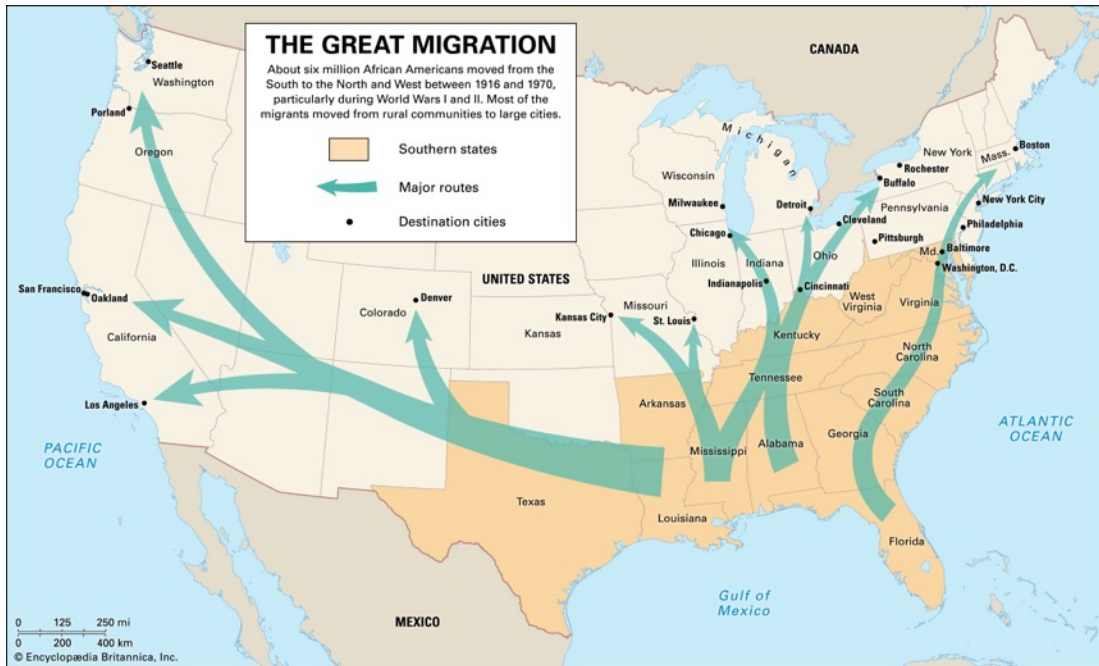
	Pre-FHA	FHA (1934)	GI Bill (1944)
Down Payment	50%	20%	0-5%
Loan Period	5-10 Years	20 Years	30 Years
Type	Balloon	Amortized	Amortized

The original GI Bill ended in July 1956. By that time ...4.3 million home loans worth \$33 billion had been handed out. – history.com

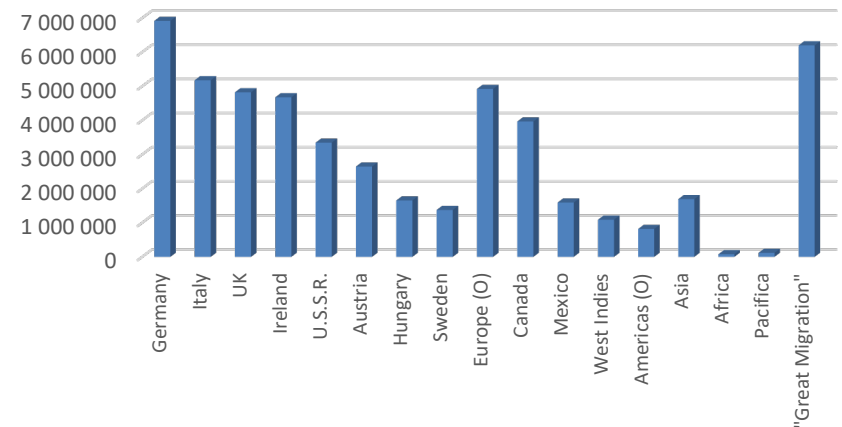
US Homeownership (1910-2010)



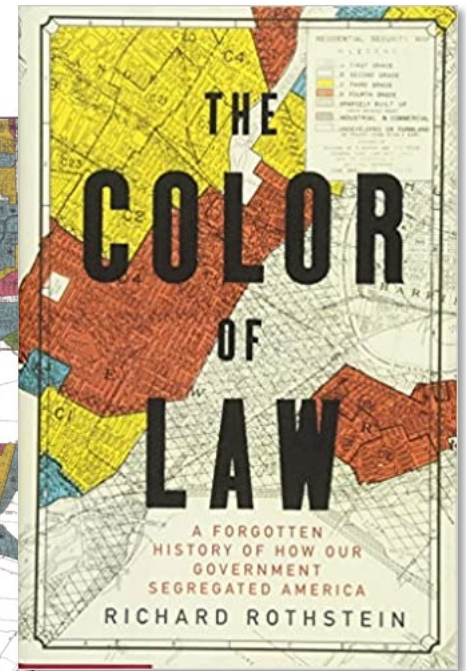
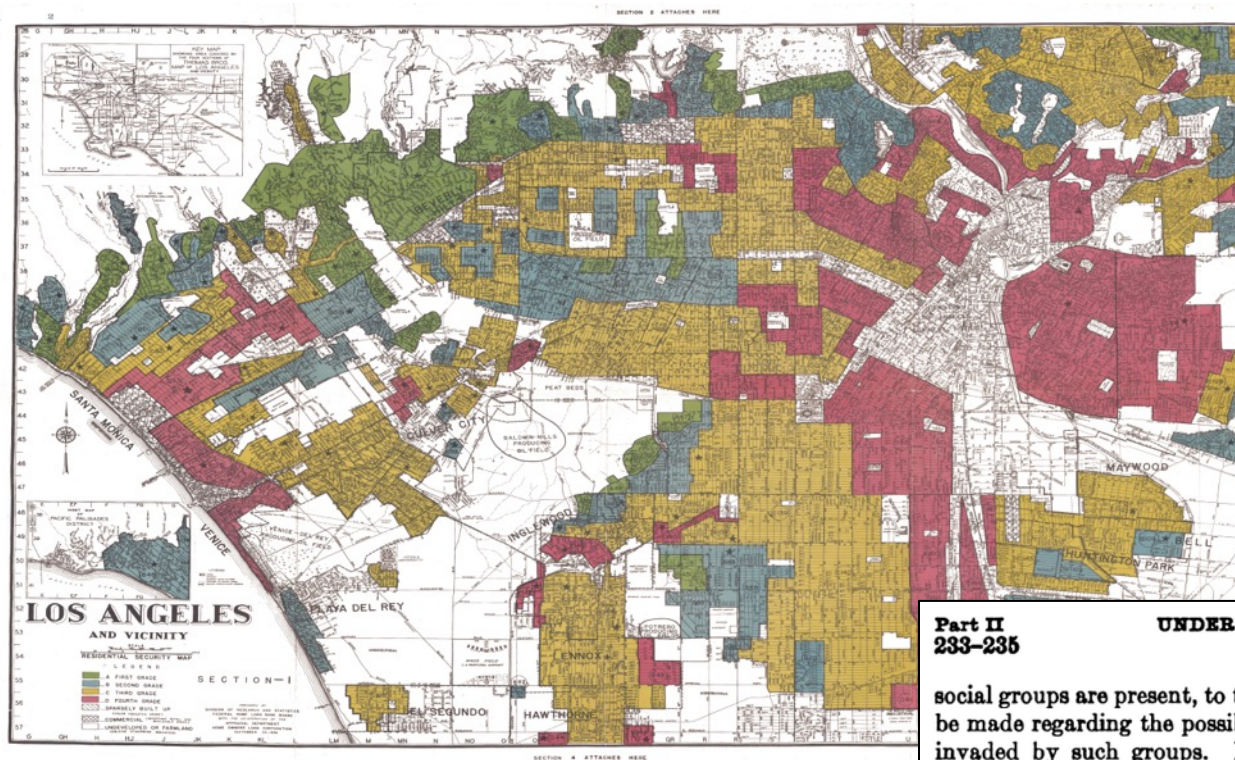
The “Great Migration” (1916-1970)



US Immigration by Nationality 1820-1970



“Redlining” (Federal Policy)



Part II 233-235

UNDERWRITING MANUAL

social groups are present, to the end that an intelligent prediction may be made regarding the possibility or probability of the location being invaded by such groups. If a neighborhood is to retain stability it is necessary that properties shall continue to be occupied by the same social and racial classes. A change in social or racial occupancy generally leads to instability and a reduction in values. The pro-

The Federal Housing Administration, which was established in 1934, furthered the segregation efforts by refusing to insure mortgages in and near African-American neighborhoods — a policy known as "redlining." At the same time, the FHA was subsidizing builders who were mass-producing entire subdivisions for whites — with the requirement that none of the homes be sold to African-Americans.

- "A 'Forgotten History' Of How The U.S. Government Segregated America" (NPR)

The Long Arc Toward Justice

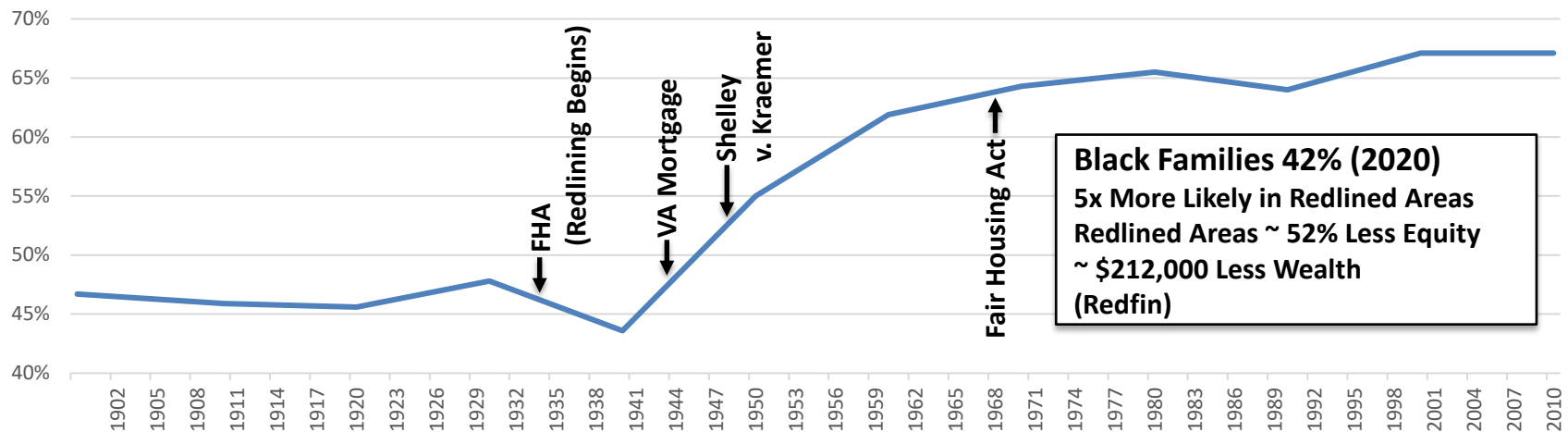
Shelley v. Kraemer (1948)

SCOTUS: Racial covenants legally unenforceable, but don't violate civil rights(?!)

Fair Housing Act (1968)

Discrimination concerning the sale, rental, and financing of housing based on race, religion, national origin is illegal.

US Homeownership (1910-2010)

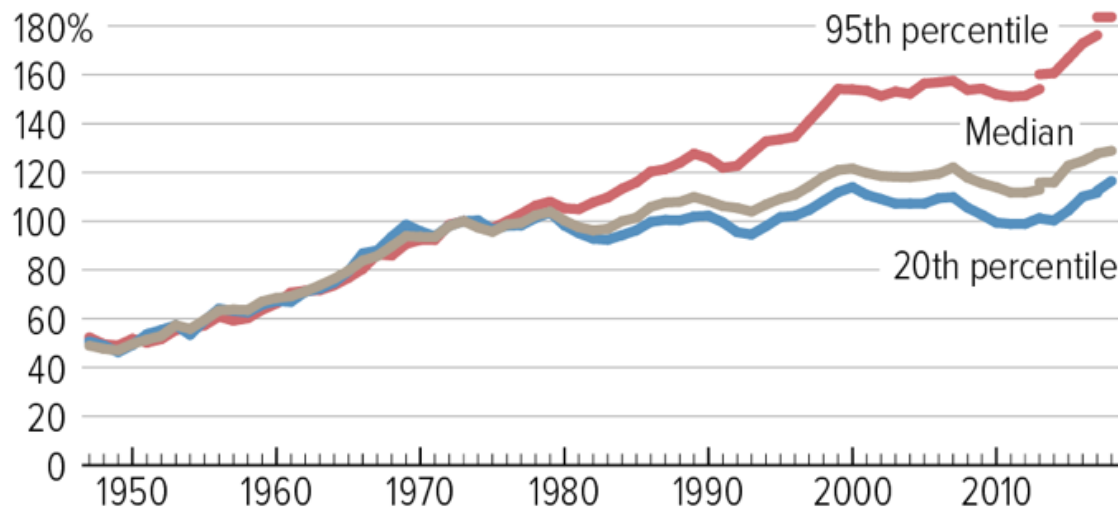


In 1947, only 2 of the more than 3,200 VA-guaranteed home loans in 13 Mississippi cities went to Black borrowers. “These impediments were not confined to the South,” notes historian Ira Katznelson. “In New York and the northern New Jersey suburbs, fewer than 100 of the 67,000 mortgages insured by the GI bill supported home purchases by non-whites.”– “How the GI Bill's Promise Was Denied to a Million Black WWII Veterans” (history.com)

1970s – Present: Missed Opportunity?

Income Gains Widely Shared in Early Postwar Decades — But Not Since Then

Real family income between 1947 and 2018, as a percentage of 1973 level



Note: Breaks indicate implementation of a redesigned questionnaire (2013) and an updated data processing system (2017).

Source: CBPP calculations based on U.S. Census Bureau Data

CENTER ON BUDGET AND POLICY PRIORITIES | CBPP.ORG

Between 1944 and 1971, the federal government spent over \$95 billion to provide benefits to veterans; in 1948, the G.I. Bill made up 15 percent of the federal budget. - *When Affirmative Action Was White: An Untold History Of Racial Inequality In Twentieth-century America*, Ira Katznelson

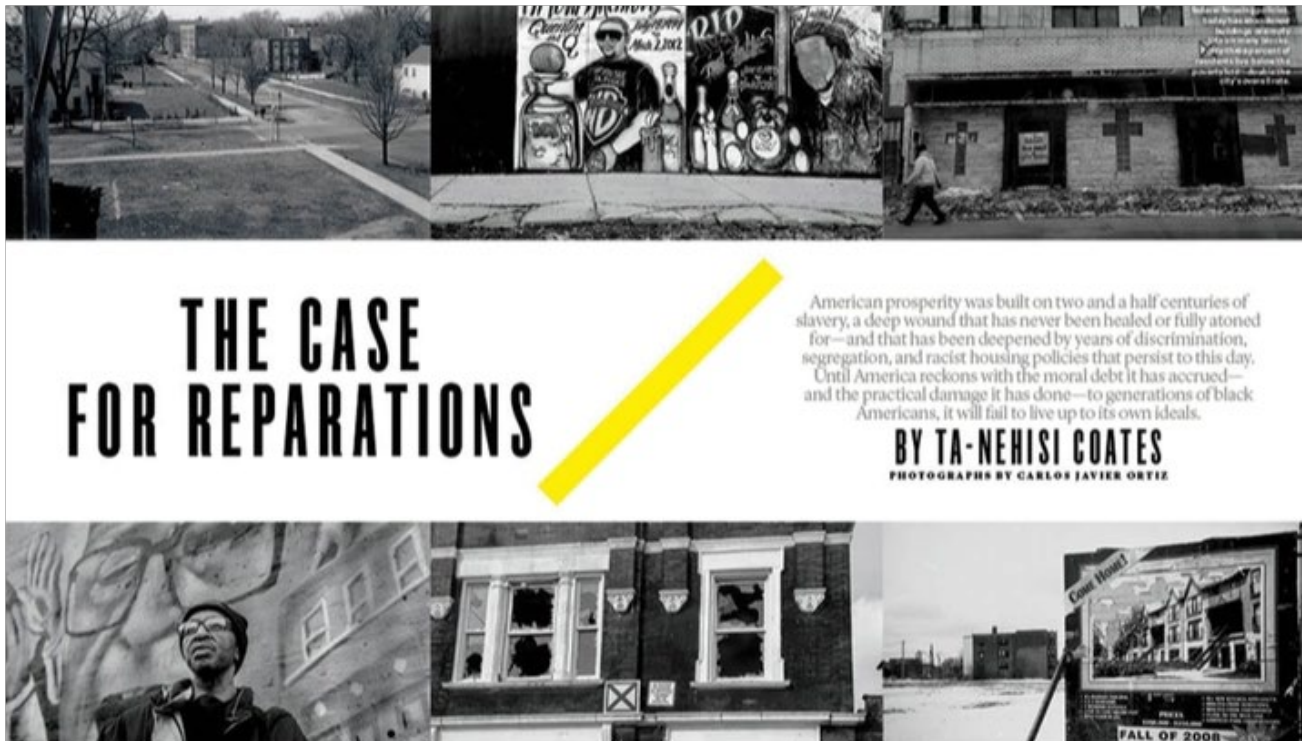
In 1947, 60% of black families lived below the poverty level (defined in one study as below \$3,000 in 1968), compared with 23% of white families. In 1968, 23% of black families lived below the poverty level, compared with 9% of white families.

– “Politics and Culture of Abundance: 1943–1960” (lumen)

The Results

Today, 41% of black households own their own homes, compared with nearly 72% for whites. Today African-American incomes on average are about 60 percent of average white incomes. But African-American wealth is about 5 percent of white wealth.

- “A 'Forgotten History' Of How The U.S. Government Segregated America” (NPR)

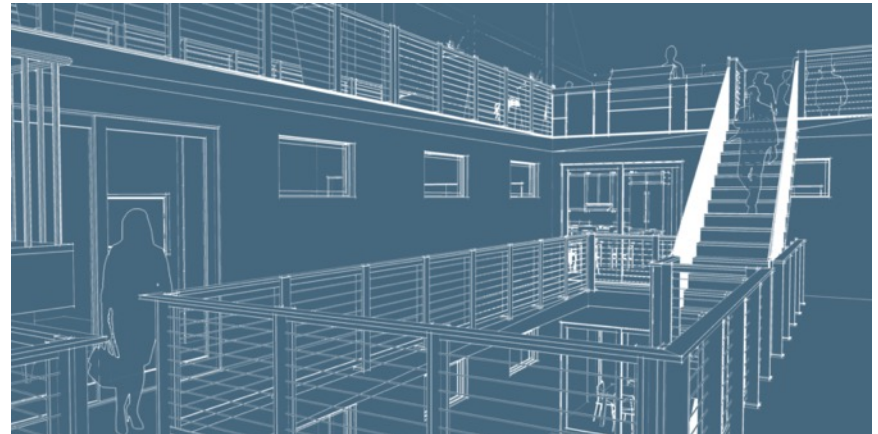


American Urban Renaissance - 3x Win



A Mass, Market-Based Solution with Government Support, à la New Deal/GI BILL

- **Housing – Mass Customization for Redevelopment, Upzoning & Infill**
- **Equity – “Greenlining” Historically Disadvantaged Americans & Neighborhoods**
- **Environment – Passive House, Renewables, Low-GWP, Water Conservation**





Thank You! Questions?

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