



UNION

Places of Value. *Value of Place.*

www.unionstudioarch.com

Founded in 2001

ARCHITECTURE & COMMUNITY DESIGN

We are a mission-based firm committed to designing sustainable places that will be loved for generations.

Providence, RI & Philadelphia, PA

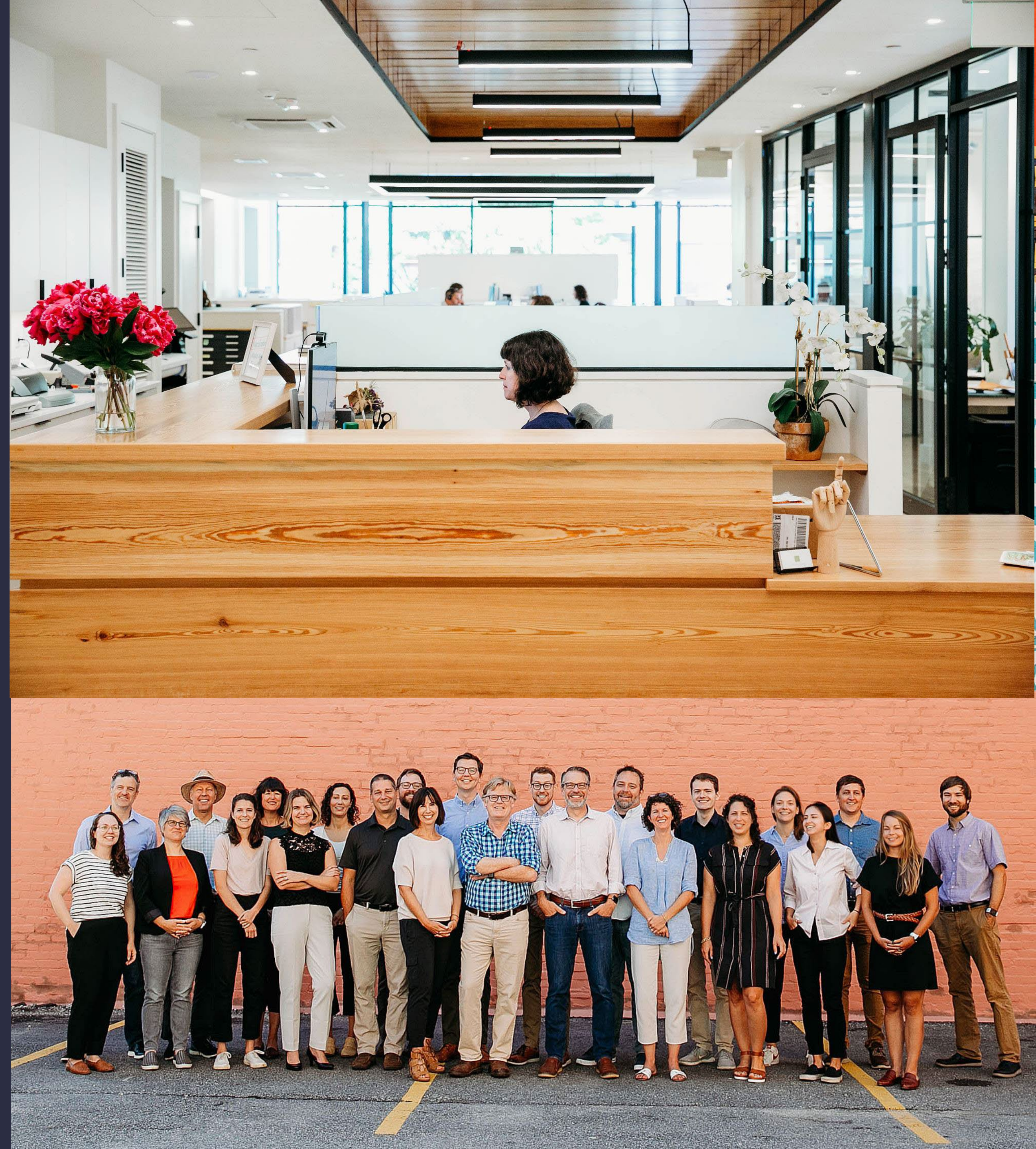
NEW ENGLAND BASED, NATIONAL REACH

In addition to our portfolio of work throughout New England and the Atlantic coast, Union Studio has worked on projects across the U.S. and Canada, Arkansas, Michigan, Oklahoma, Oregon, Texas, Washington & California

40 Employees

ARCHITECTS, PLANNERS, & DESIGNERS

Our passion for building strong communities starts here in our studio, among our friends and colleagues.









OUR MISSION

To use the power of design to
enrich lives and strengthen
communities'

MEETING THE MOMENT

Building **Better** Residential and Mixed-Use Places In New Hampshire's Towns and Villages

Presented to Plan NH
September 15, 2026

Donald Powers AIA
Founder, President



UNION

THE HOUSING CRISIS

National Trends and New Hampshire's Reality

A data brief on housing affordability and supply, prepared for organizations advancing responsible development in New Hampshire



August 2026

A Nationwide Shortfall

8.2M

Estimated national housing unit shortage in 2023 — nearly double 2012 levels. Could reach 9.6M by 2035.

McKinsey & Company, 2026

~50%

Of U.S. renter households were cost-burdened in 2024, spending over 30% of income on housing.

Harvard Joint Center for Housing Studies, 2026

25M

People lived in households paying more than half their income on rent in 2024.

Center on Budget and Policy Priorities, 2026

35 / 100

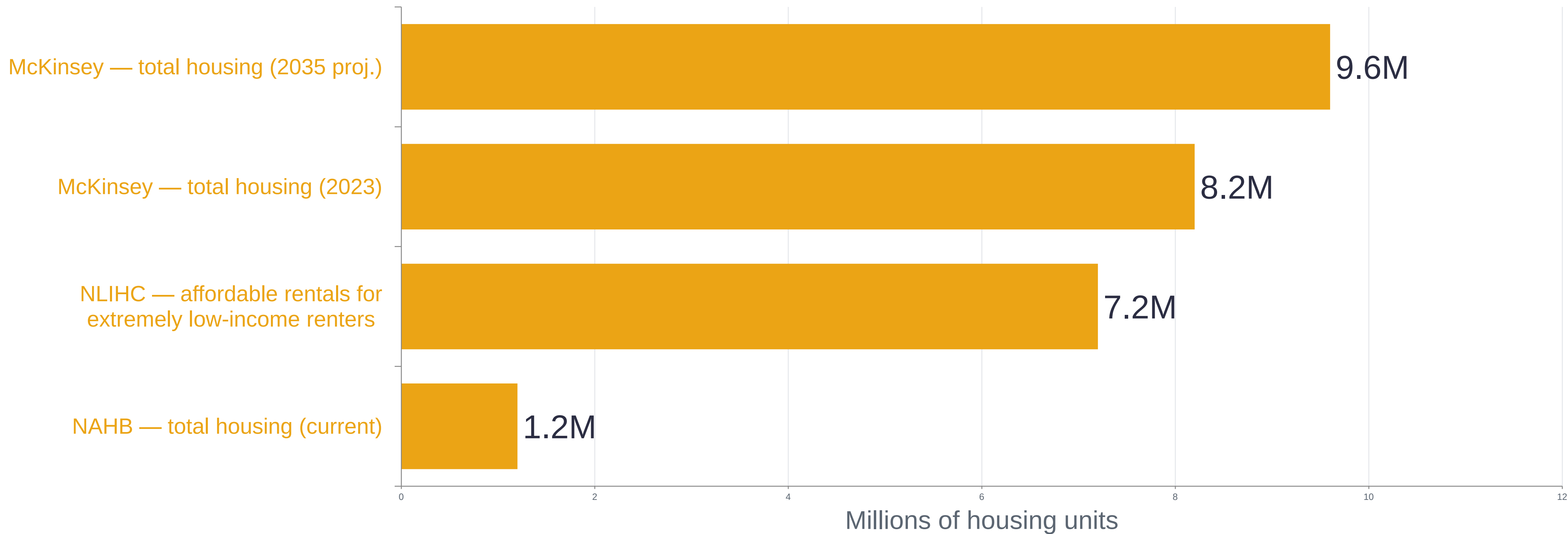
Affordable, available rental homes exist for every 100 extremely low-income renter households.

National Low Income Housing Coalition, The Gap 2026

Note: figures reflect different scopes (total units vs. rental-only) and are not additive.

How Big Is the Gap? Estimates Vary by Method

No single number captures the U.S. housing shortage — estimates depend heavily on what is being measured: total housing units, or only the rental homes affordable to the lowest-income renters.



Sources: NAHB (2026), NLIHC The Gap (2026), McKinsey & Company (2026). Methodologies differ; figures illustrate scale, not a sum.

New Hampshire's Housing Crisis

The national squeeze, intensified by a decade of vanishing supply



Home Prices Have Outrun Incomes

\$580,000

Record statewide median single-family home price, set in July 2026

NH Journal / NHAR, 2026

\$182,000

Annual income a family needs to afford the median-priced NH home

NCSHA, 2025

15%

Of New Hampshire households earn enough to afford that median home

NCSHA, 2025

4%

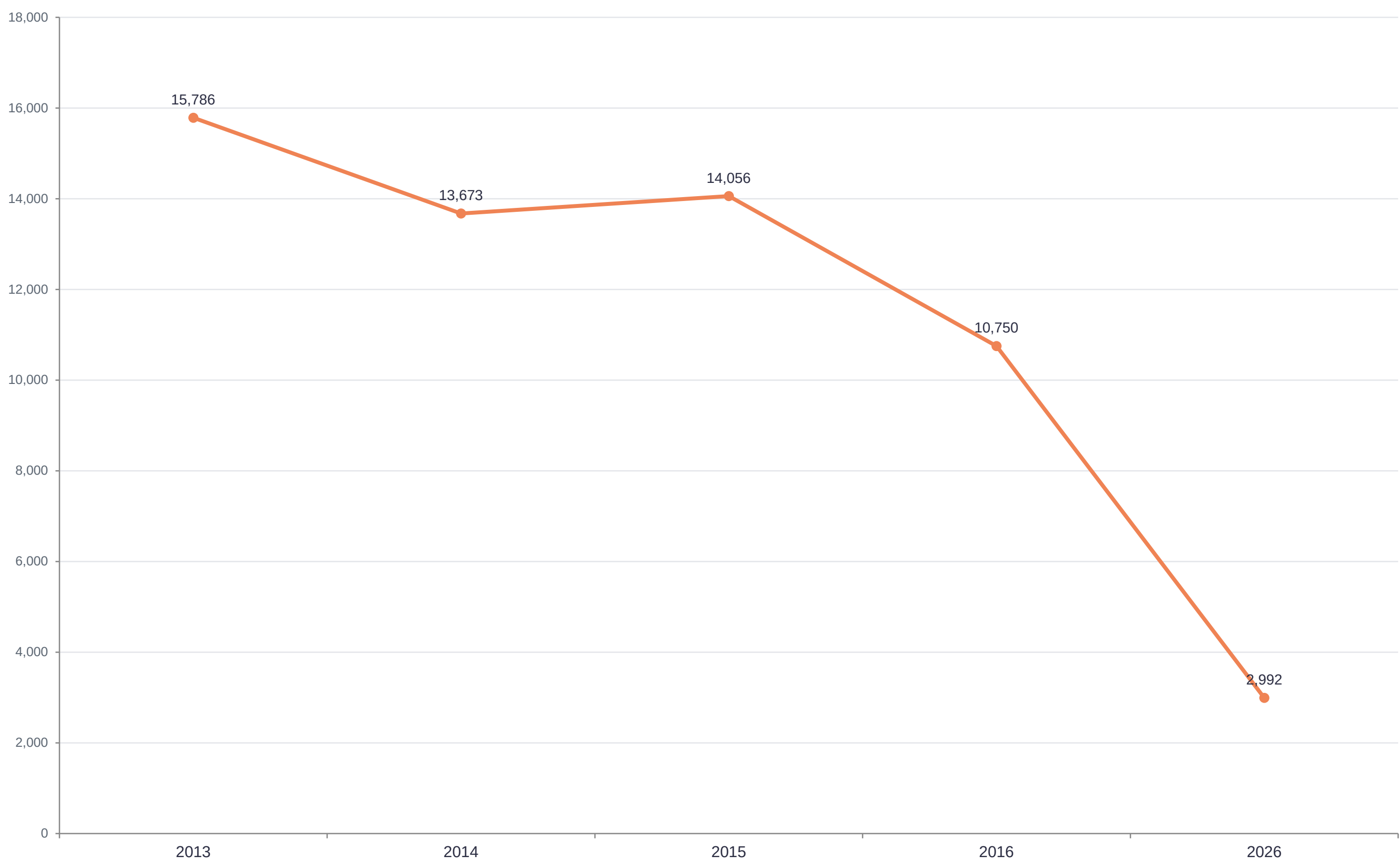
Of New Hampshire renters can afford to buy the median-priced home

NCSHA, 2025

After adjusting for inflation, New Hampshire home prices have risen 129% since 1998 — while inflation-adjusted household incomes rose just 19% over the same period.

A Decade of Vanishing Inventory

Homes for sale statewide, July of selected years



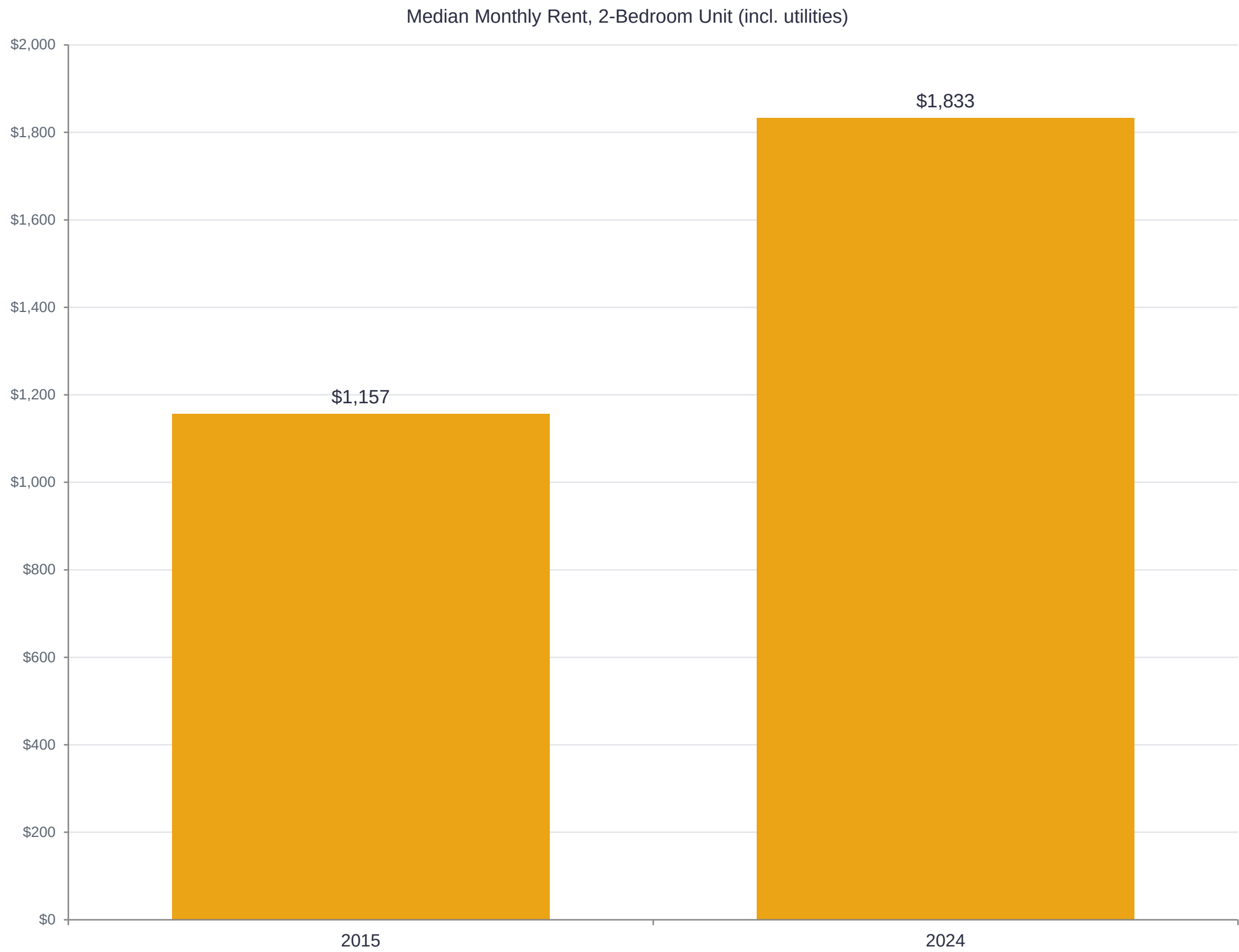
2,992

Homes listed for sale in July 2026 — fewer than one-fifth the number on the market in July 2013.

23,500 units

needed now to meet current demand, per NH Housing (the state's housing finance authority) — growing to 90,000 additional units needed by 2040.

Renters Are Being Squeezed Too



Rent is up 58.4% since 2015 — outpacing regional inflation of 3.3% per year over the same period.

51%
Of New Hampshire renters paid more than 30% of income on housing in 2023.
NHFPI, 2026

\$2,140
Average statewide monthly rent in 2026, still climbing on limited supply.
Innago market data, 2026

~4%
Statewide rental vacancy rate — tighter than most of the country.
U.S. Census Bureau, via Innago 2026

The Cost of Inaction — and the Case for Building

#1 concern

Housing has topped New Hampshire residents' list of concerns in successive statewide surveys — ahead of jobs, education, and taxes.

The Real Cost

- **Workforce Shortages and Employer Competitiveness**
 - Recruitment
 - Essential Services
 - Wage Pressure
- **Demographic Stagnation**
 - Youth move away
 - Aging Population
 - Diversity Constraints
- **Consumer Spending and Municipal Strain**
 - Reduced disposable income to support local economies.
 - Shrinking populations can't support infrastructure.



WHY IS IT SO HARD TO BUILD?

A look at the impediments to building new homes and places.

Materials and labor cost more than they used to — but they aren't the real problem



August 2026

The High Cost of Building

National trends and what they mean for New Hampshire

The National Picture

Construction costs have climbed sharply for both single-family and multifamily housing



Single-Family — Ownership

\$175–\$320

per sq. ft. — production / semi-custom build (2026)

\$300–\$600+ / sq. ft. for custom homes

\$162 / sq. ft. baseline hard cost — NAHB 2024 builder survey

\$414,000 median sale price, new single-family home
(Dec. 2025)

Source: NAHB Cost of Constructing a Home (2024); U.S. Census Bureau / HUD new home sales, Dec. 2025



Multifamily — Rental & Ownership

\$350–\$398

per sq. ft. — national average, apartments & condos

\$220–\$700 / sq. ft. range, low-rise to high-rise

Typical cost per unit:

Low-rise: \$150K–\$300K/unit

Mid-rise: \$200K–\$400K/unit

High-rise: \$350K–\$700K+/unit

Source: RSMeans/Gordian (2026); Janover Inc.; multifamily.loans Investor Guide (2026)

New Hampshire: Higher Costs, Tighter Supply

NH construction costs track — and in some cases exceed — national averages, while the state remains tens of thousands of units short



Single-Family (Ownership) — NH

\$238 /sq. ft.

statewide average, standard construction (range \$175–\$320)

\$717,500 median sale price, newly built home, May 2025

↑ 75% since 2020 (\$410,442)

Source: NH Realtors/PrimeMLS via NH Housing (Oct. 2025); Bean Group NH Cost-to-Build Guide (2025–26)



Multifamily (Rental) — NH

~\$250K–\$285K

total development cost per unit, recent NH Housing–financed apartment projects

\$1,993 median effective rent, all unit types (2024)

51% of NH renters are cost-burdened

Source: NH Housing FY2023 Funded Multifamily Projects Overview; NH Housing, "Who Can Afford to Live in NH?" (Oct. 2025)

Why it matters

Rising per-unit and per-square-foot costs are compounding New Hampshire's housing shortage — pricing out both homebuyers and the essential workforce that rents.

23,500

additional units needed
now statewide

90,000

additional units needed
by 2040

Source: NH Housing, 2023 Statewide Housing Needs Assessment

Costs of New Home

Non-Construction Related Costs:

- Land Cost
- Design & Soft Costs
- Costs of Approvals
- Financing Costs

Construction Related Costs:

- Site Construction costs
- Materials Cost
- Labor Cost

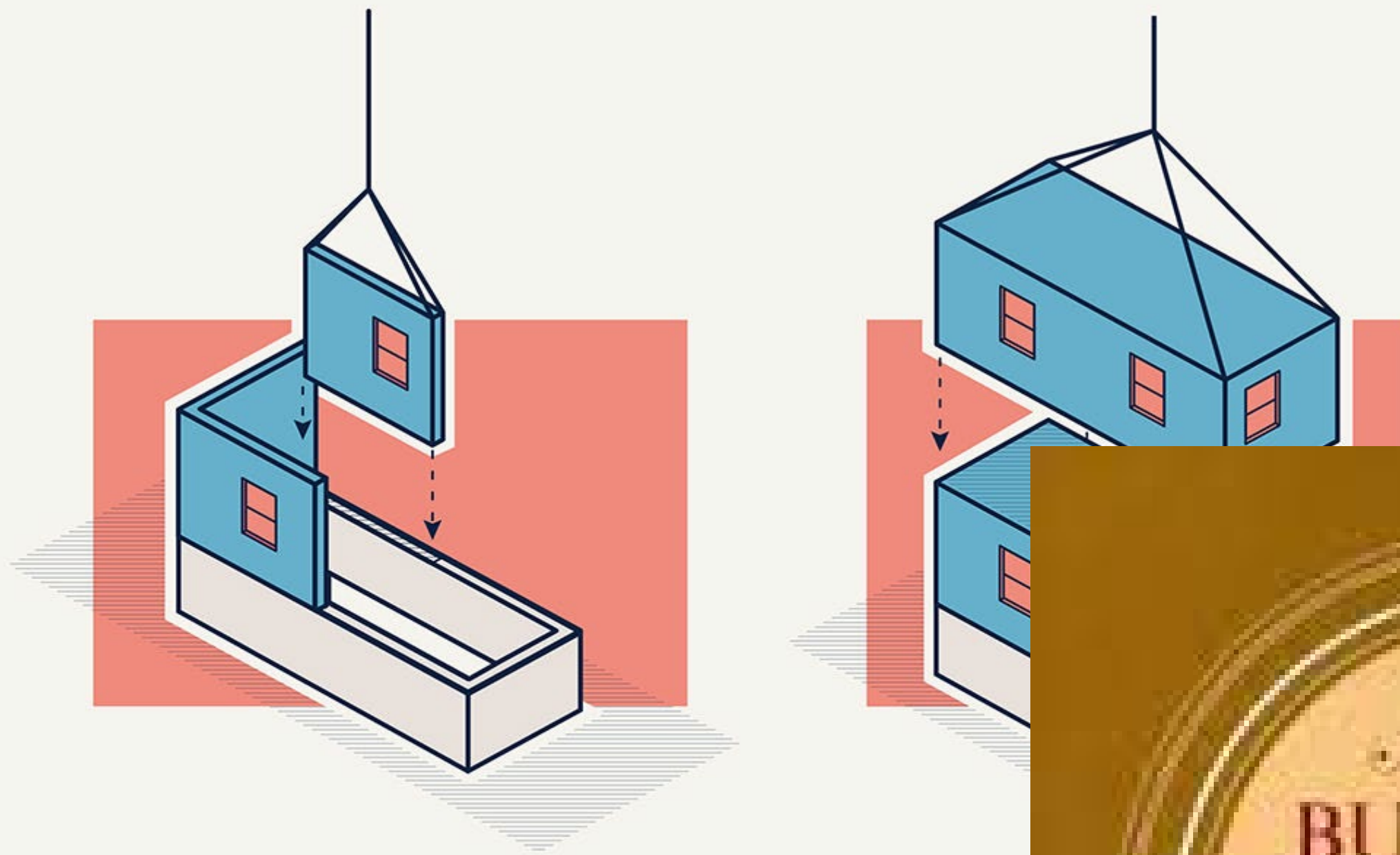


What We've Tried: Attack The Construction Related Costs

Pattern books to prefab — a century of attempts to build well for less



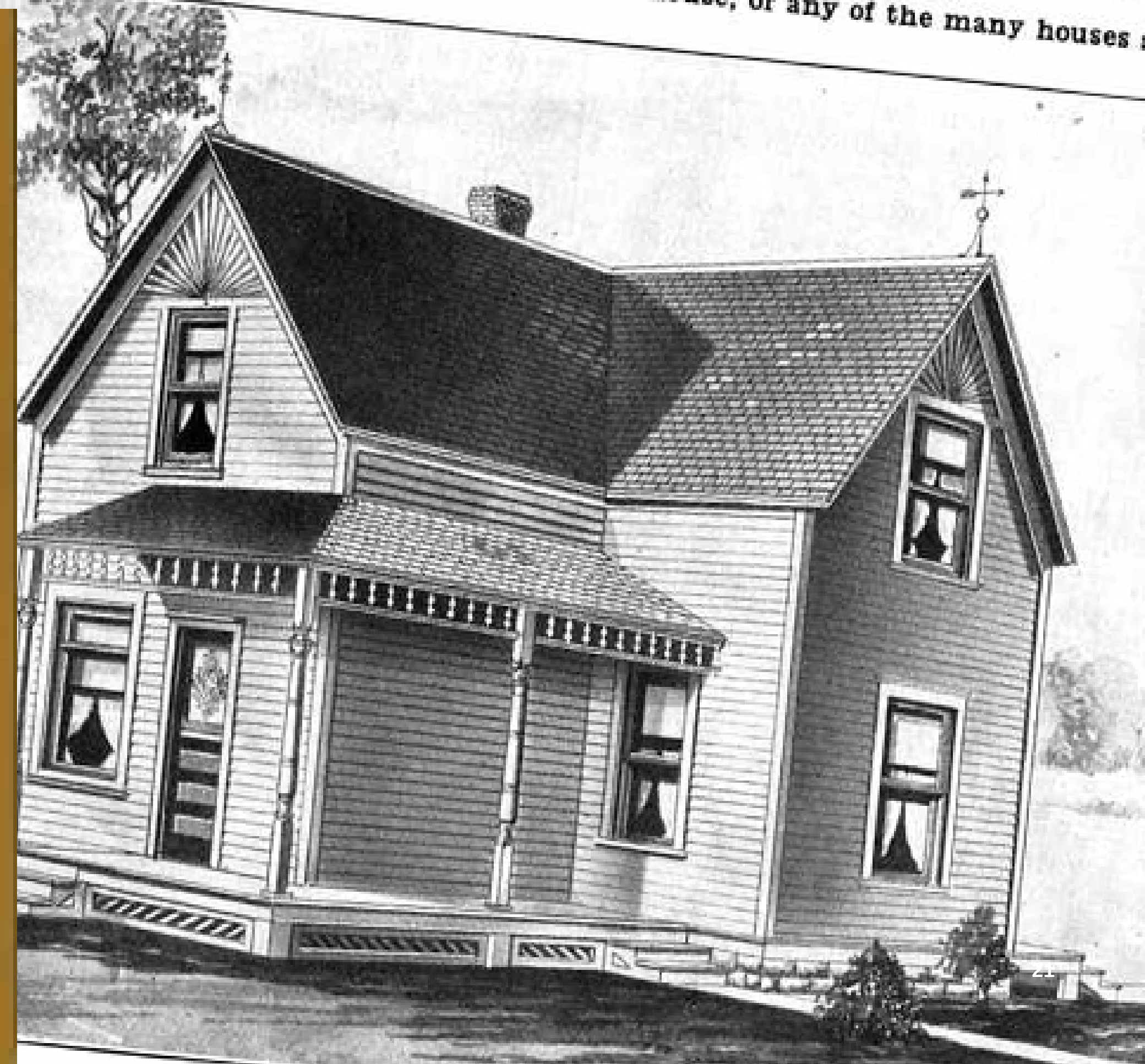
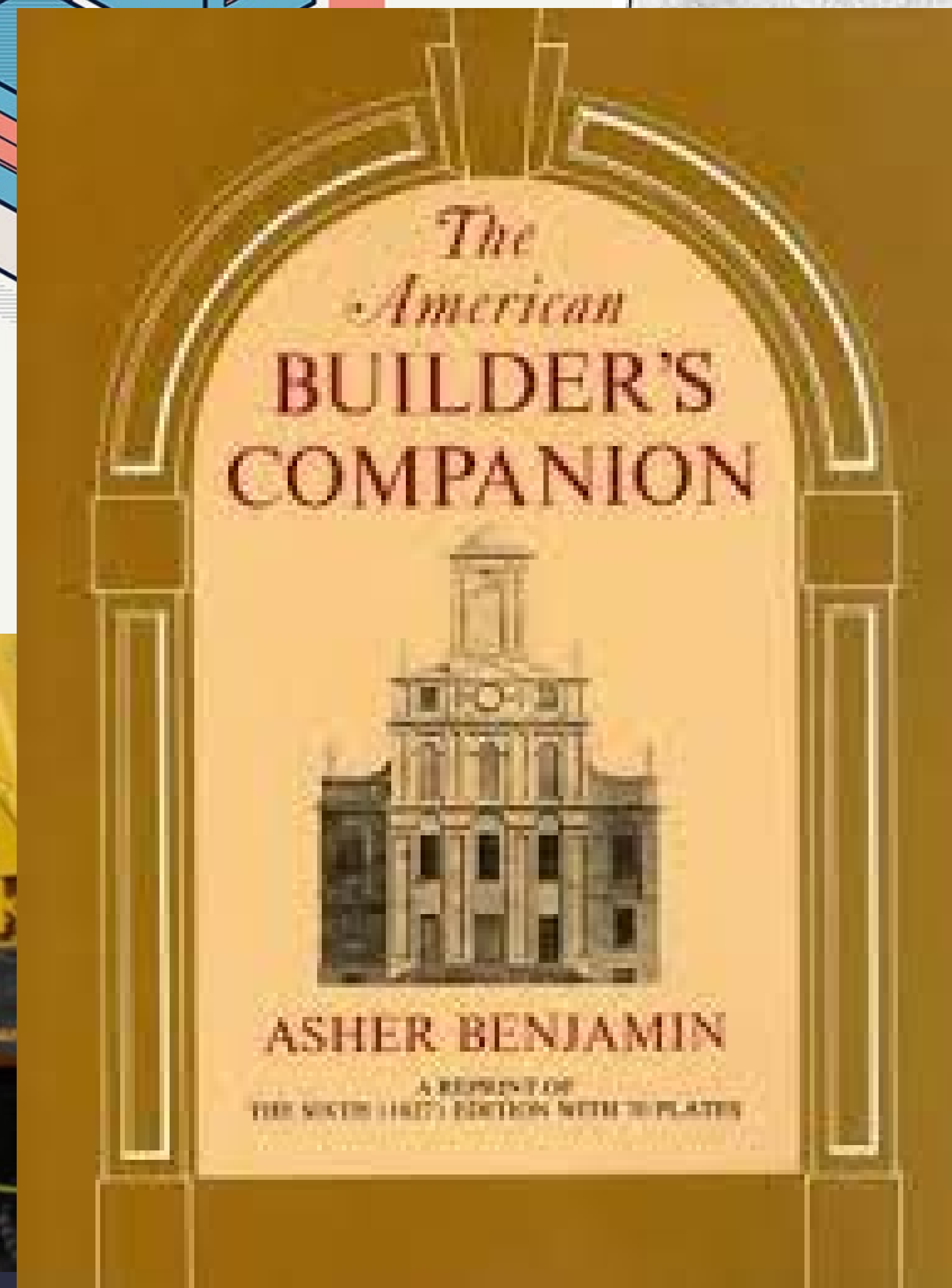
How Has Affordability Been Accomplished in the Past?



Panelized



\$725⁰⁰ and Our **FREE BUILDING**
WILL BUILD, PAINT AND COMPLETE, READY FOR
THIS INVITING \$1,100.00 SIX-ROOM COTTAGE
We tell you on page 2 how we furnish, free, the plans for this house, or any of the many houses



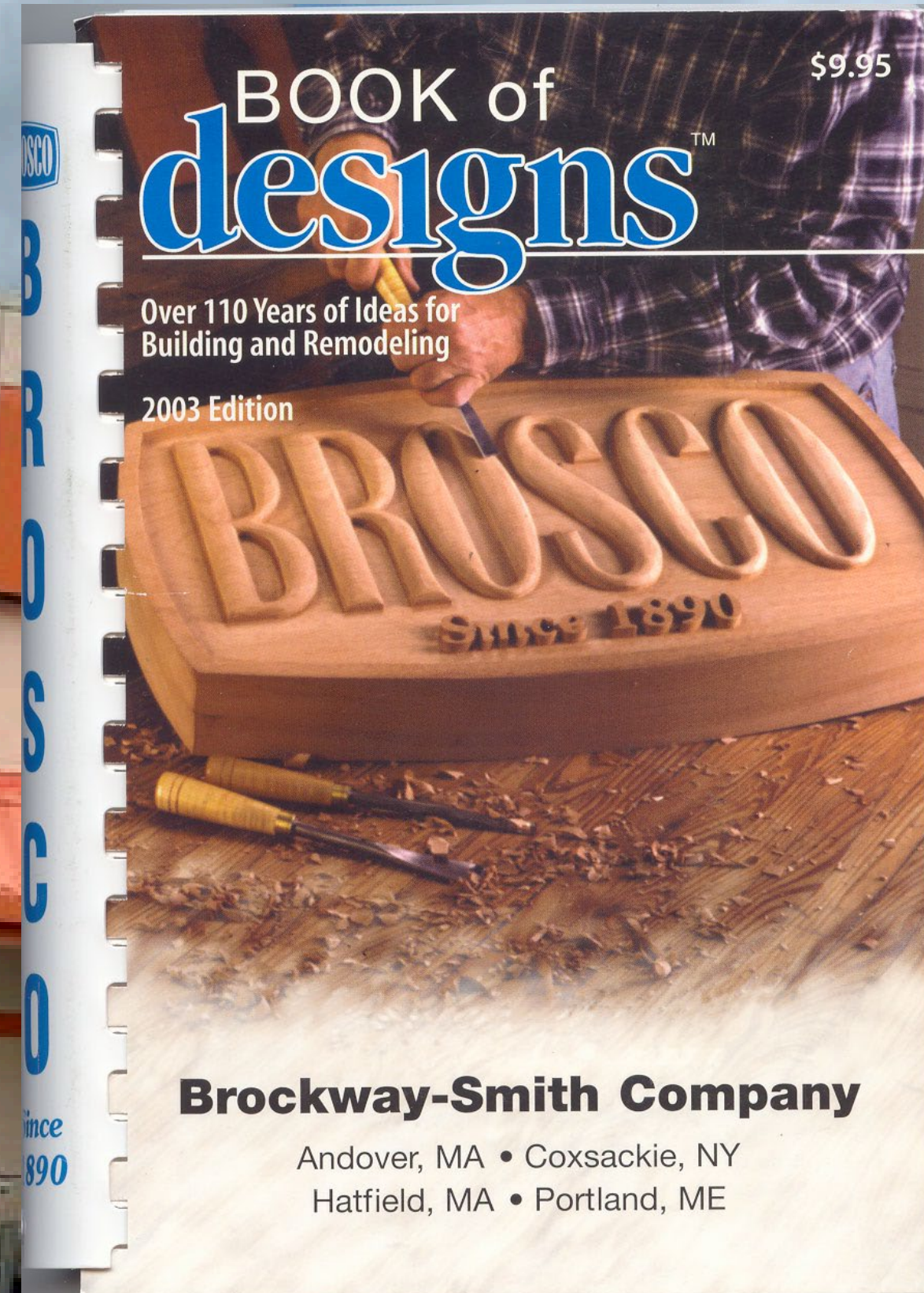


Heritage Sands
Dennisport, MA





What Are Rules for Building Affordably Now?

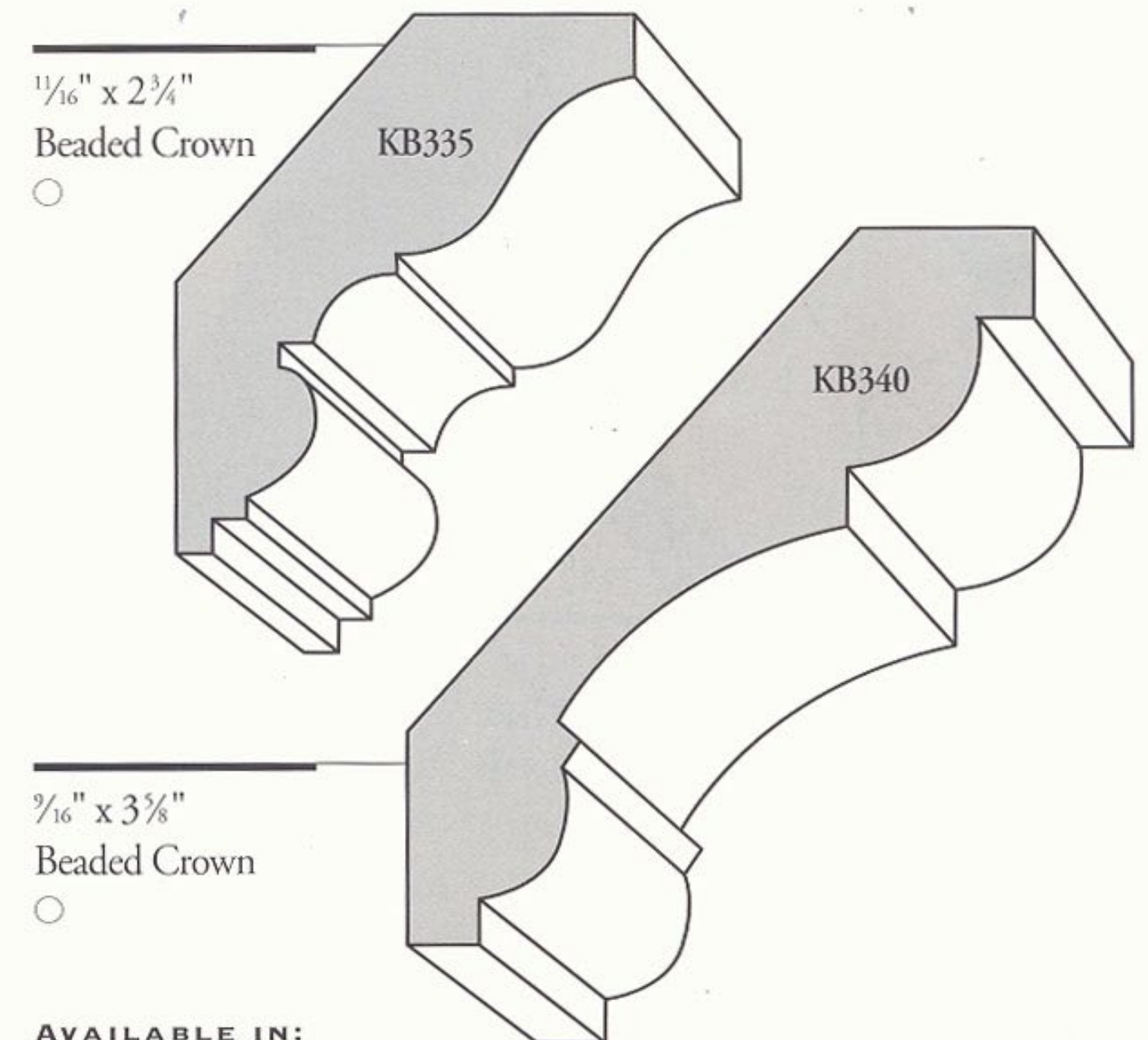


KUIKEN BROTHERS CO., INC. 

Crown Mouldings

Refer to the following chart for the **Pattern Projection (A)** and **Height (B)** of the crown mouldings.

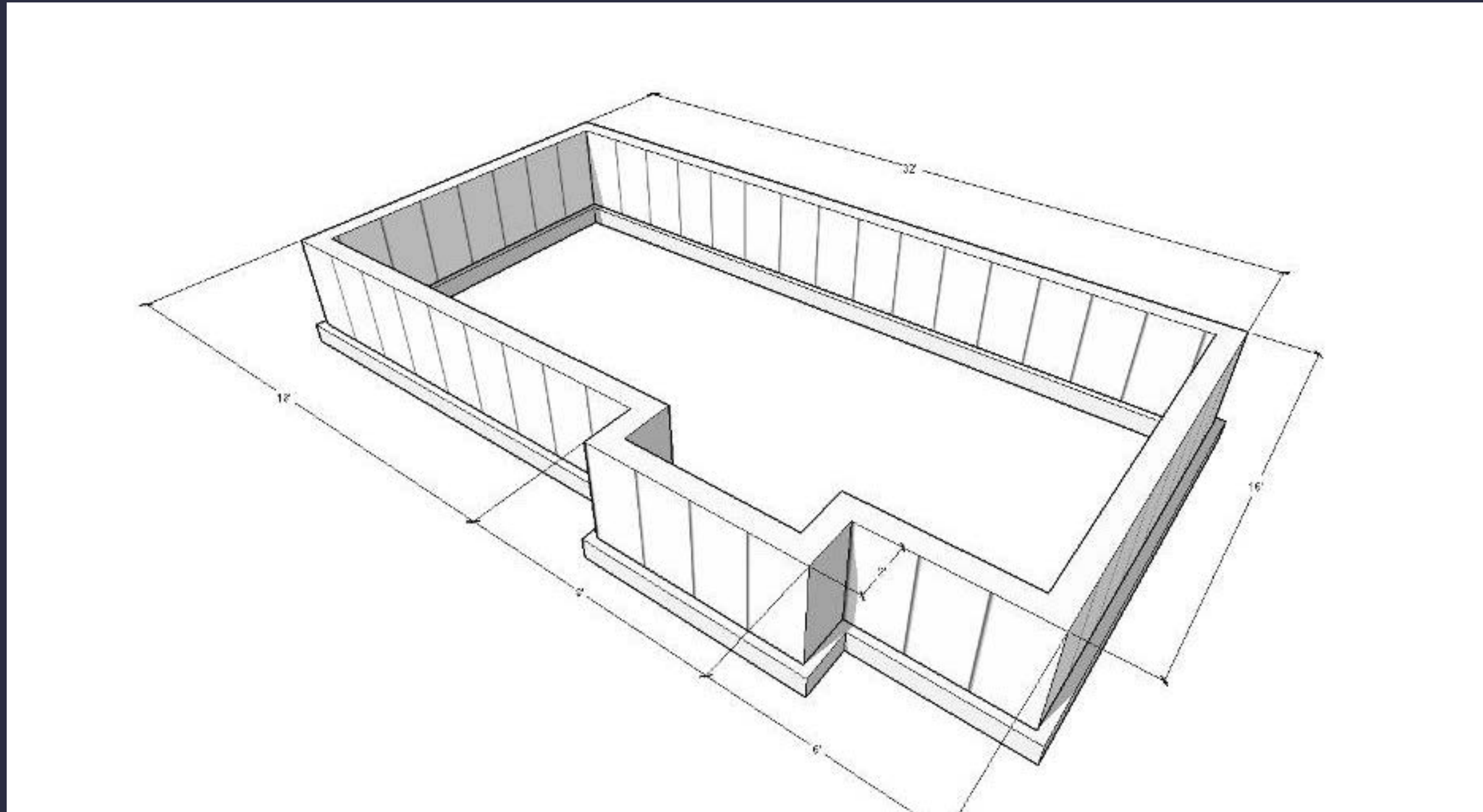
Pattern	A	B	Pattern	A	B	Pattern	A	B
KB307	$1\frac{1}{16}"$	$1\frac{1}{16}"$	KB317	$1\frac{7}{8}"$	$2\frac{5}{8}"$	KB340	$2\frac{1}{2}"$	$2\frac{5}{8}"$
KB308	$1\frac{1}{8}"$	$1\frac{1}{8}"$	KB320	$2\frac{1}{8}"$	$2\frac{13}{16}"$	KB345	$2\frac{7}{8}"$	$3\frac{1}{8}"$
KB310	$1\frac{1}{4}"$	$1\frac{1}{4}"$	KB325	$2\frac{5}{8}"$	$3\frac{3}{16}"$	KB350	$3\frac{3}{8}"$	$4\frac{1}{4}"$
KB312	$1\frac{1}{16}"$	$1\frac{1}{4}"$	KB330	$3\frac{1}{4}"$	$4\frac{1}{8}"$	KB352	$4\frac{5}{8}"$	$5\frac{1}{2}"$
KB315	$1\frac{1}{16}"$	$2"$	KB335	$1\frac{5}{8}"$	$2\frac{5}{16}"$	KB395	$2\frac{5}{8}"$	$2\frac{3}{4}"$



AVAILABLE IN:

● Clear Pine ○ Primed El Pine ▲ Oak △ Poplar ◆ Mahogany

CALL 1-888-KUIKENS (1-888-584-5367)



The Modular Logic Of American Light Frame Construction

Foundation formwork, floor and wall framing, and roof sheathing are all set out on 24" centers to match the standard 4'x8' plywood/OSB sheet — precut studs, standard sheet goods, and a fixed trade sequence are what make American light-frame construction fast and cheap.

When “affordability” is the only goal, the result is often visibly cheap and out of character.

How to design beautiful homes that can be built LESS expensively?



Understanding of Construction Sequence and Separation of Trades



Understanding of Construction Sequence and Separation of Trades



“Approximating”
traditional elements with
low-skill details to allow
visual interest with less
cost.

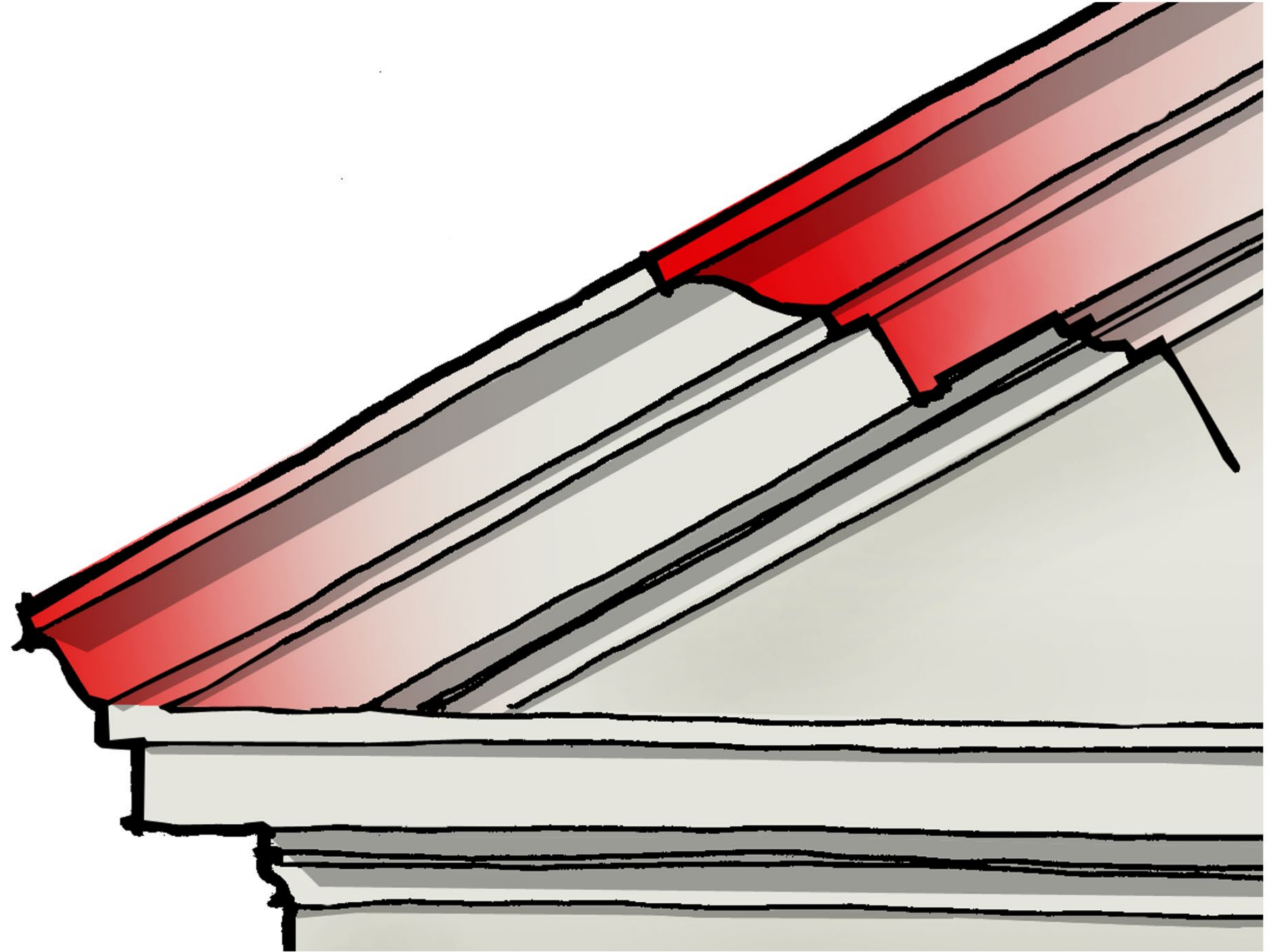


Delivering Higher
Quality Homes
Within A
Production System
of Delivery.



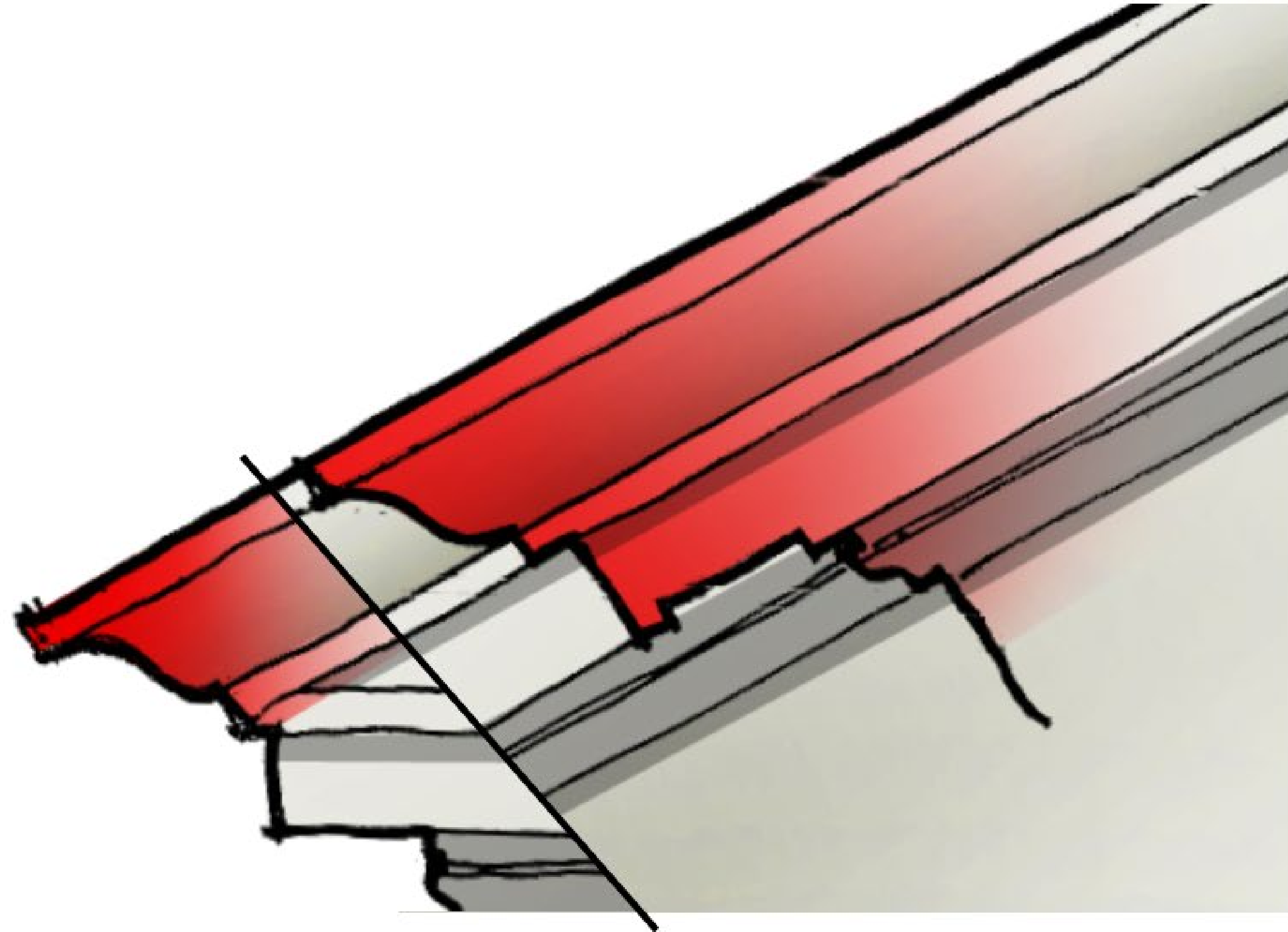
Understand and respect
the builder's trade and its
challenges.

Designing “Lower Skill”
details.



Understand and respect
the builder's trade and its
challenges.

Designing “Lower Skill”
details.

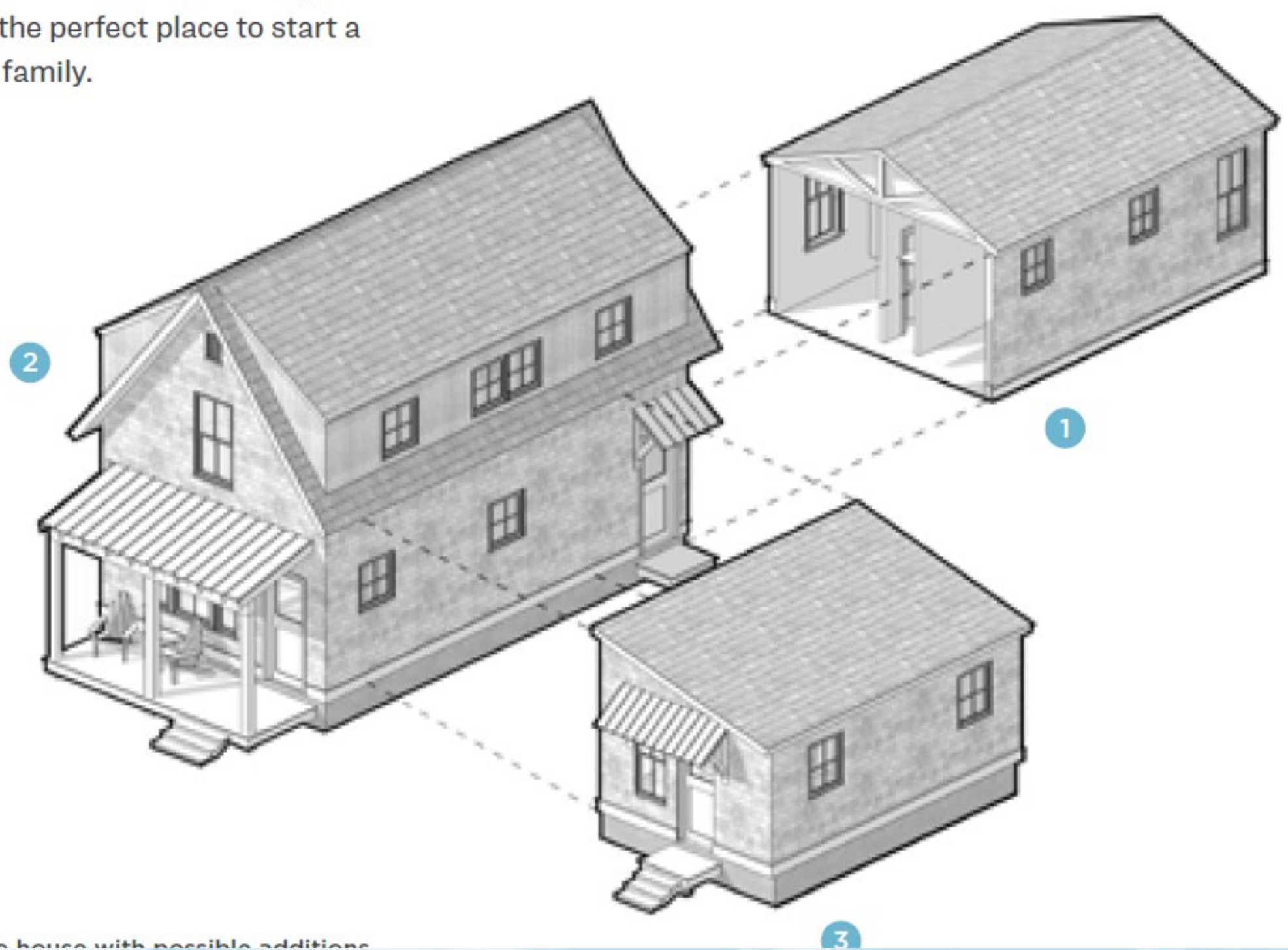


Non-Construction Routes To Affordability

There is only so far efficiency of design and construction can take you.



Side Hustle House can grow as you
make it the perfect place to start a
new family.



Side Hustle House with possible additions

Side Hustle House

Eastham, MA

Buying your first house used to be a rite of passage, but it is no longer a realistic option for many Americans. There are many things causing the current housing crisis; the Side Hustle House was created so that design isn't one of them.



Figure 7-6. Rear addition alternatives



Figure 7-7. Second floor alternatives



Prototype Built By Cape Associates with This Old House



East Dale Village, Poughkeepsie, NY

Incrementally built, developer partnered with each owner.



East Dale Village, Poughkeepsie, NY

Incrementally built, developer partnered with each owner.



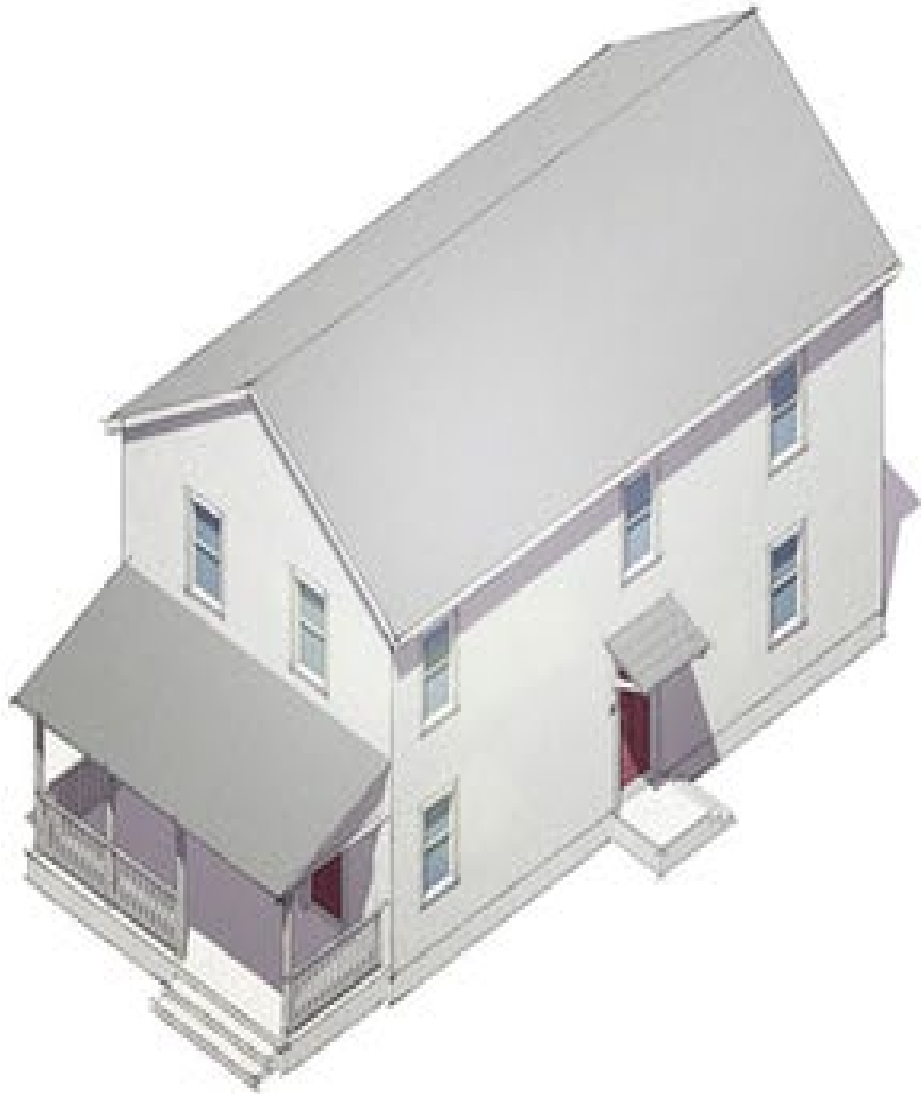
Pre-designed, pre-approved building plans.

- Helps empower small increment development.
- Removes substantial costs from design and permitting.
- More small developers = more housing

South Bend Neighborhood Infill | Stacked Duplex

The Stacked Duplex

The Stacked Duplex provides two identical 2-bedroom units that support a slight increase of density and the development on the city's most narrow infill lots with affordable housing options. The massing and elevation options fit within the scale and vernacular character of South Bend's oldest urban neighborhoods. An optional basement could provide storage or expansion of the ground floor unit.



ZONING DISTRICTS ALLOWED

S1 S2 U1 U2 U3 UF NC DT



Option A



Option B



Option C



Ground Floor



Second Floor

Building Type Overview

Building Dimensions	
Building Height	2 story
Building Width	22'
Building Depth (incl. porch)	48'
Program	
Unit Configuration	2 bed / 1 bath
Unit Size (finished gross)	1,760 sq. ft.
Basement (unfinished)	880 sq. ft.
Porch (unconditioned)	176 sq. ft.
1st Floor	880 sq. ft.
2nd Floor	880 sq. ft.
Lot Standards	
Lot Width (min.)	32'
Lot Width (max.)	70'
Cost Assumptions	
Preliminary Construction Estimates *	\$320,000 - \$370,000
Financing Options	30-yr mortgage

* Numbers shown are for basic estimation purposes only. Pricing is based on Fall 2021 cost assumptions and are subject to future market variation.



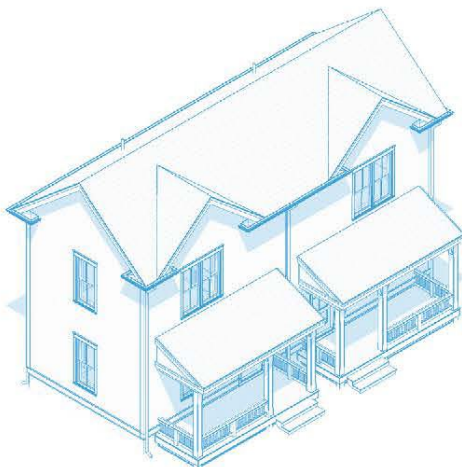


CAPE COD
COMMISSION

Pre-approved Housing Plans

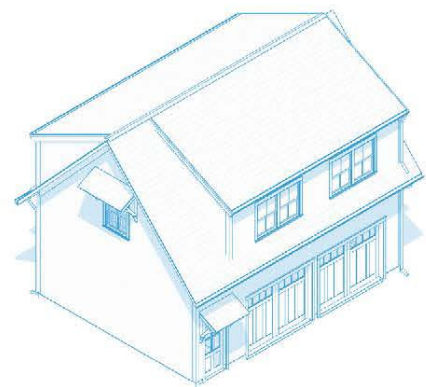
Housing Cape Cod: The Regional Strategy

OVERVIEW



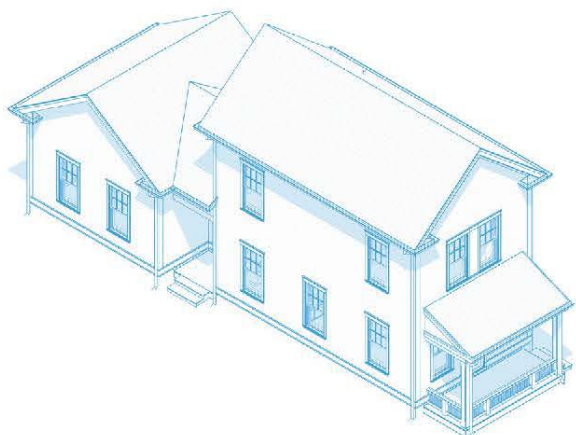
AZALEA TWO PACK

Unit Configuration 1 bed / 1 bath per unit
Unit A Size 570 SF
Unit B Size 570 SF
Stories 2
IRC



COACH HOUSE

Unit Configuration 1 bed / 1 bath
Unit Size 623 SF
Stories 2
IRC



CHICKADEE +

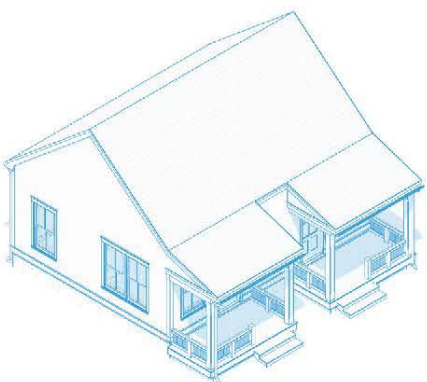
Unit Configuration A: 2 bed / 1.5 bath
B: 1 bed / 1 bath
Unit A Size 877 SF
Unit B Size 292 SF
Stories 2
IRC

OVERVIEW



LIA

Unit Configuration 1 bed / 1 bath
Unit Size 451 SF
Stories 2
IRC



BEGONIA TWO PACK

Unit Configuration 1 bed / 1 bath per unit
Unit A Size 273 SF
Unit B Size 273 SF
Stories 1
IRC

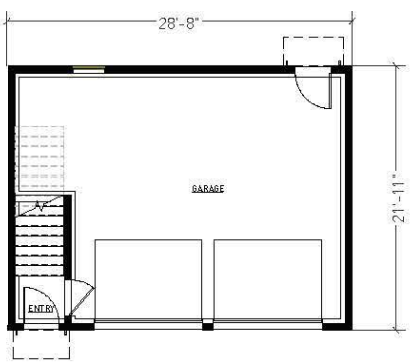


MINI

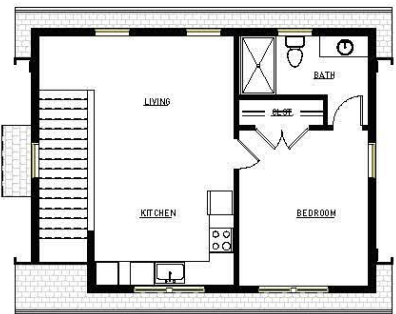
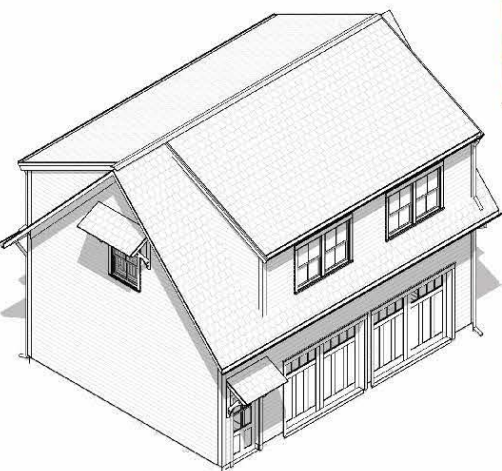
Unit Configuration 2 bed / 1 bath per unit
Unit Size 555 SF
Stories 1
IRC

COACH HOUSE*

*indicates unit is compliant with 2024 Mass ADU definition



FIRST FLOOR



SECOND FLOOR

GARAGE COTTAGE

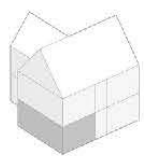
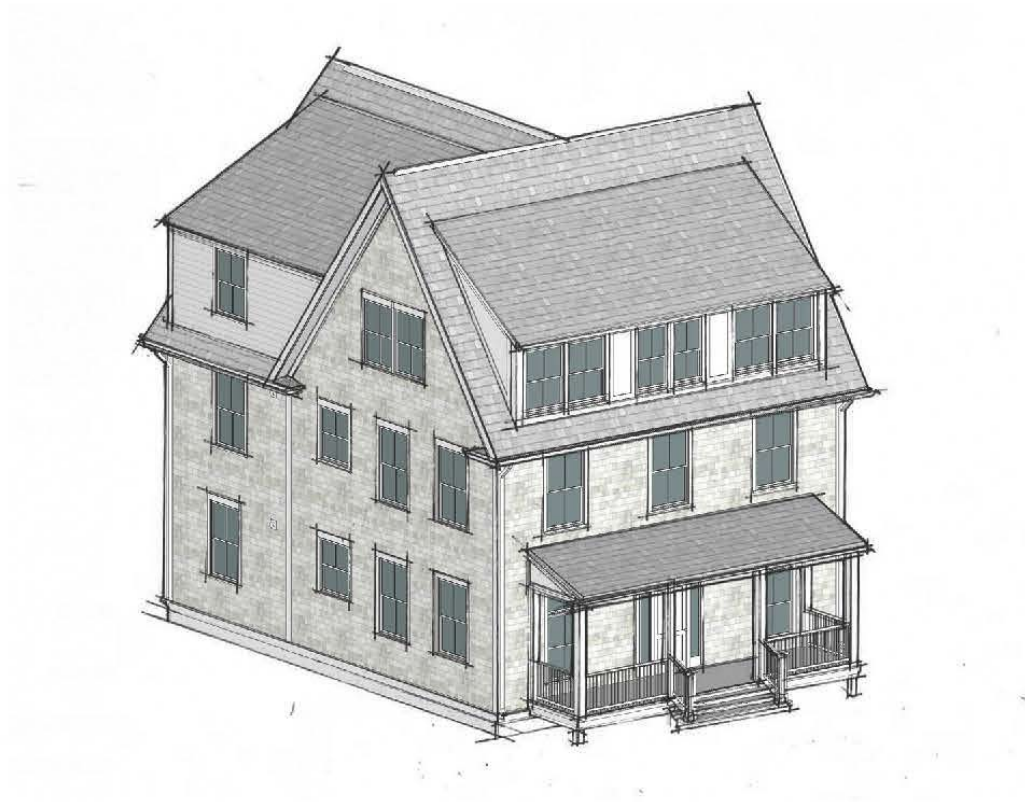
Unit Configuration 1 bed / 1 bath
Unit Size 623 SF
Stories 2
Overall Height 25'-3"
Financing Options 10 year mortgage

0' 40'



Appropriate for accessory structures and single-family infill to small multi-family.

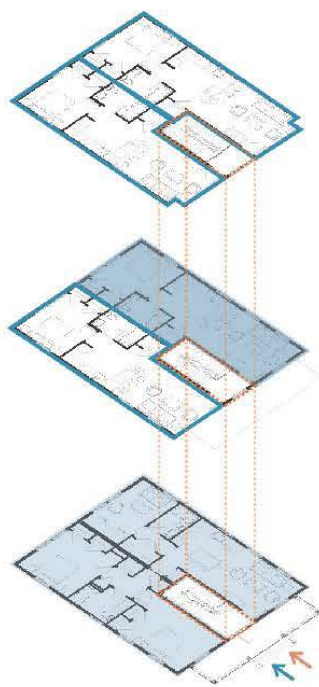
UNION STUDIO
BUILDING TYPE:



Manor House

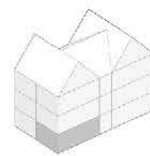
A manor house is a small-scale multi-family that looks like a large home.

- **Typical Size:** Usually 1.5 to 3 stories
- **Considerations:** Usually a large family home converted to smaller units.
- **Density:** 4 to 6 units per building / 5 to 12 dwelling units per acre



Single Level Residence
Multi Level Residence
Circulation

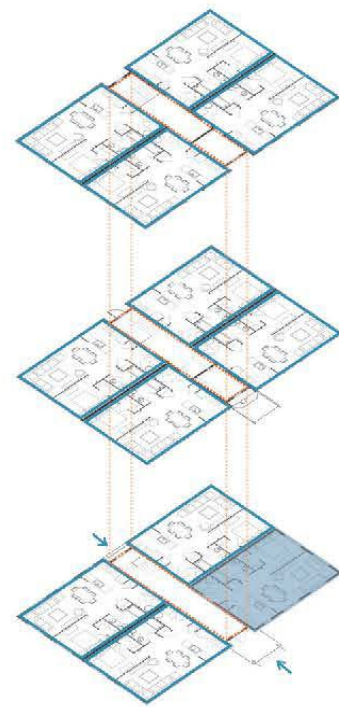
UNION STUDIO
BUILDING TYPE:



Walk-Up

Walk-ups are small scale multi-family buildings, which are commonly comprised of a series of flats with shared circulation

- **Typical Size:** Usually 2 to 3 stories
- **Considerations:** Typically comprised of studio and 1-bedroom units. Can be comprised of single-room occupancy or micro-units to achieve higher density.
- **Density:** 8 to 12 units per building / 5 to 25 dwelling units per acre

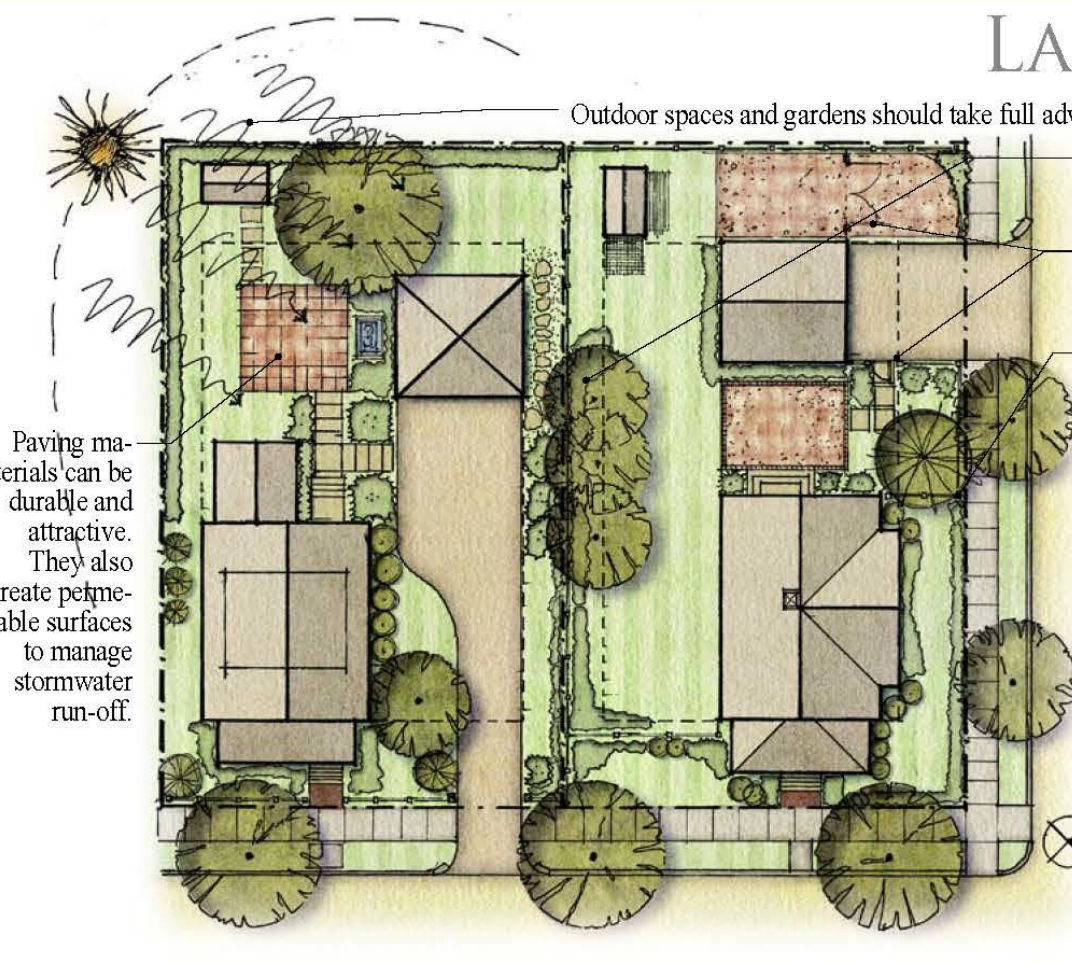


Single Level Residence
Multi Level Residence
Circulation



Construction documents, combined with pre-approved generic site placement this would drastically simplify small scale new construction

LANDSCAPING



Outdoor spaces and gardens should take full advantage of solar orientation.

Smaller trees provide visual screening between neighbors.

Fences and gates offer more opaque screenings and can help define outdoor areas.

A hedge defines an edge between the public and private realms.

Paving materials can be durable and attractive. They also create permeable surfaces to manage stormwater run-off.

Discussion

- Traditional neighborhood patterns in the United States rely heavily on the landscape to connect the edges and to define a satisfying public realm. Vegetation, walls, fencing and paving materials, and light constructions (i.e., trellises) can define edges, carve out outdoor spaces and enhance privacy.



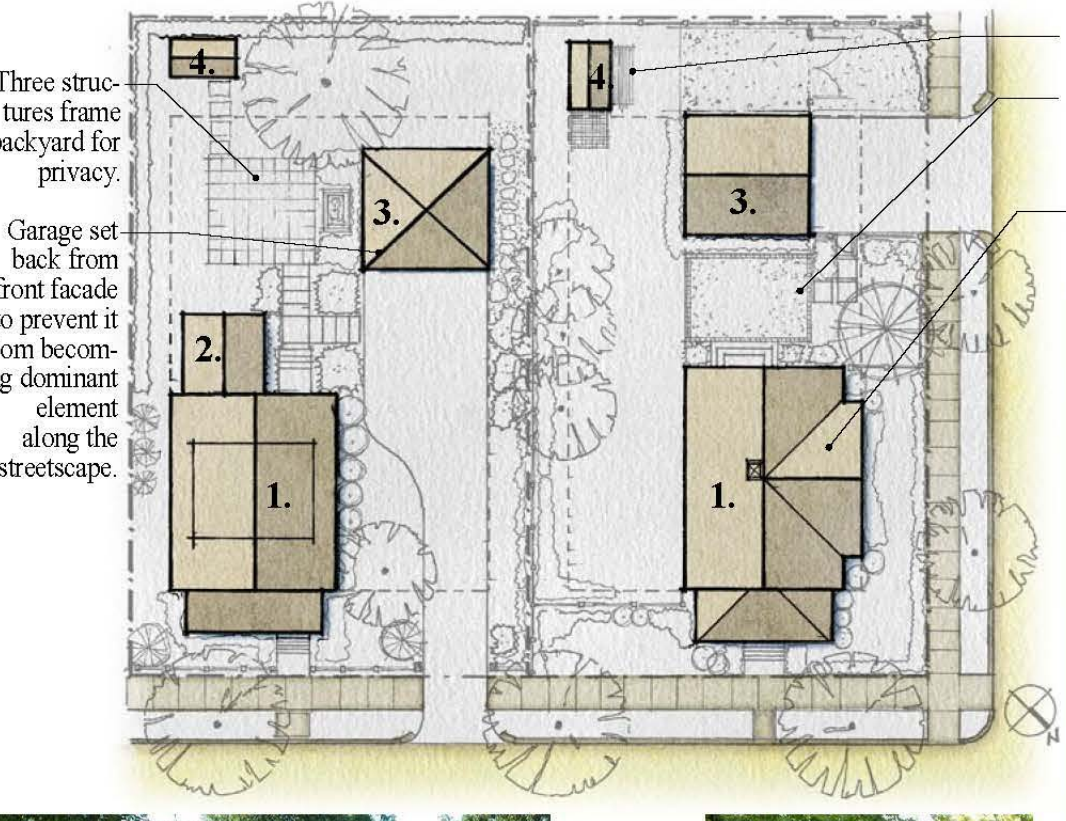
6.1 Simple fences, plantings and walls create small or large sanctuaries outside. A brick wall of a garage can be utilized as a backdrop for gardens. While an attractive masonry wall acts as an edge between neighbors, a well placed gate invites visitors inside.

AVOID

6.2 The lack of landscaping, both hard and vegetated, is visually unappealing and creates ill-defined spaces where nothing really takes place.



LOCATING STRUCTURES



Three structures frame backyard for privacy.

Garage set back from front facade to prevent it from becoming dominant element along the streetscape.

Easy access to shed and utility area.

Courtyard between house and garage.

At corner lots, principal building anchors street corner.

Legend

- Principal Building
- Back Building
- Out Building
- Auxiliary Structure

Discussion

- The location of various buildings on a lot helps to create a variety of public, semi-private and private spaces. Principal structures located along the front setback line define a continuous building edge along each block. Outbuildings and auxiliary structures can help frame private spaces on the interior of each lot.



4.1 Auxiliary structures, although small, can be elegantly constructed and placed in a yard to complement the landscaping and other structures of the property. The garden shed (above right) was designed to complement the principal building since it was in a visible location from a busy sidewalk.

AVOID

4.2 Locating the garage doors in the same plane as the principal structure creates a very uninviting presence. The garages and homes become indistinguishable from one another.



4.3 Conversely, the lack of structures on lots can create large voids and exposures between dwellings. Without these smaller structures, the lot may lack the sense of privacy that well-placed outbuildings can provide.



The Best Route To Affordability

Construction efficiencies and empowering small developers will only go so far if land use patterns don't change.



Costs of Development

Non-Construction Costs:

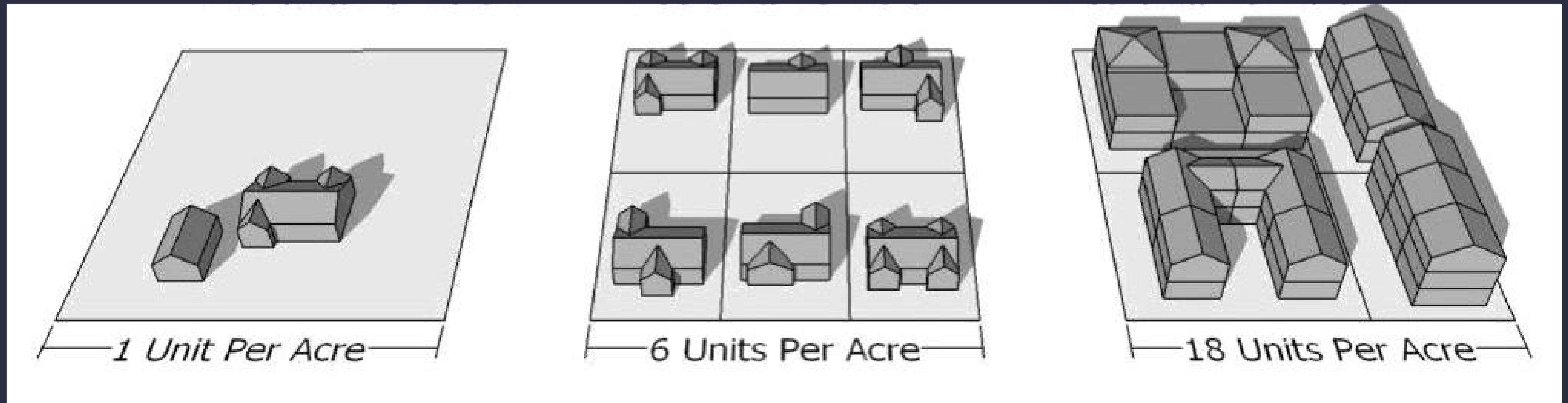
- Land Cost
- Design & Soft Costs
- Costs of Approvals
- Financing Costs

Construction Related Costs:

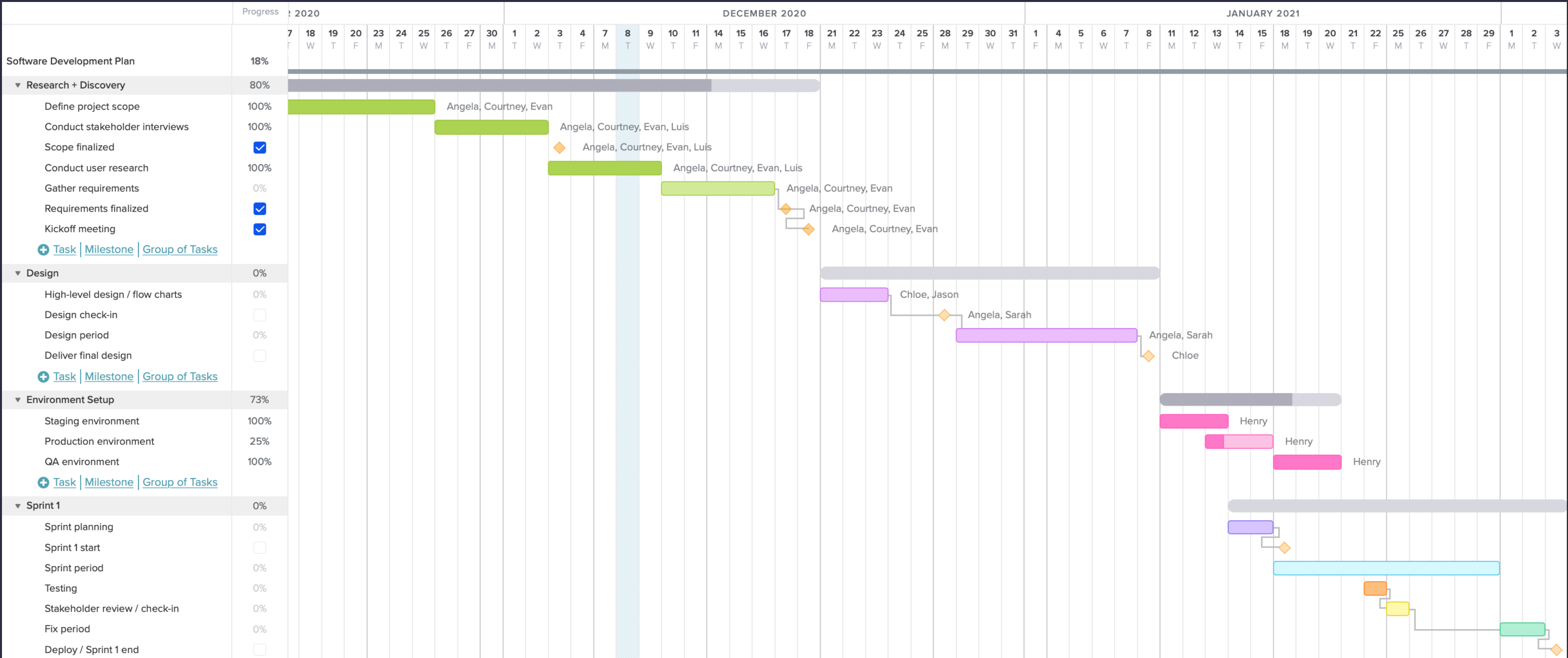
- Site Construction costs
- Materials Cost
- Labor Cost



Land cost as component of DU cost can only be lowered by
allowing more density
(*less land cost per unit*).



Cost of approvals and entitlement as a component of DU cost can only be lowered by making them more predictable and less time consuming.



Lower land cost
(*increase density*) and
lower cost of
approvals (*more predictability*)
are both
encouraged
through better
design.:



Why do
Municipalities and
neighbors resist
“density” (and
development
generally)?

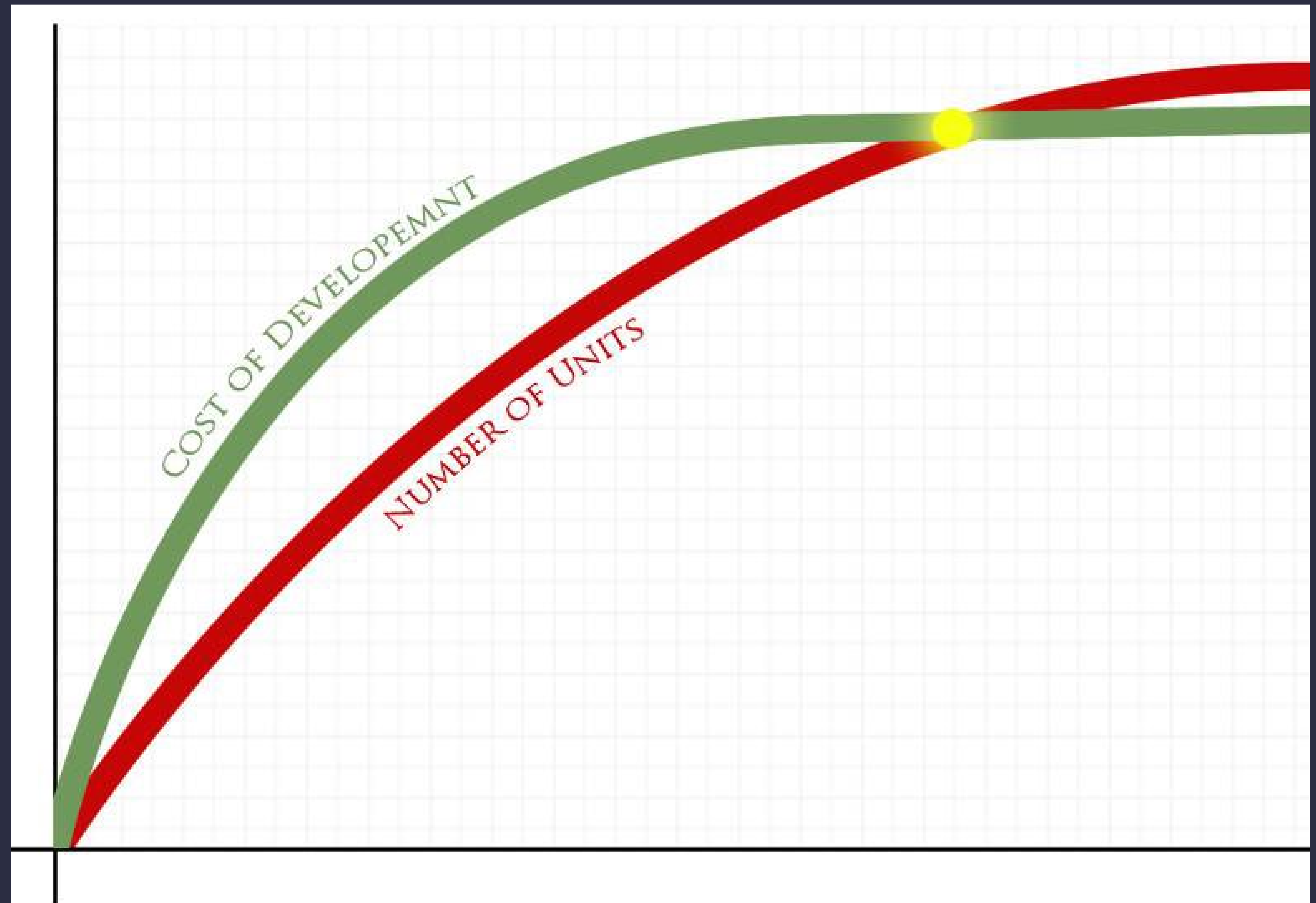


Most recent
experience
suggests their life
will not be better
with whatever
development is
being proposed.

Not a fair trade.



Costs of entitlement encourage larger projects, which then inspires greater resistance and fear in community

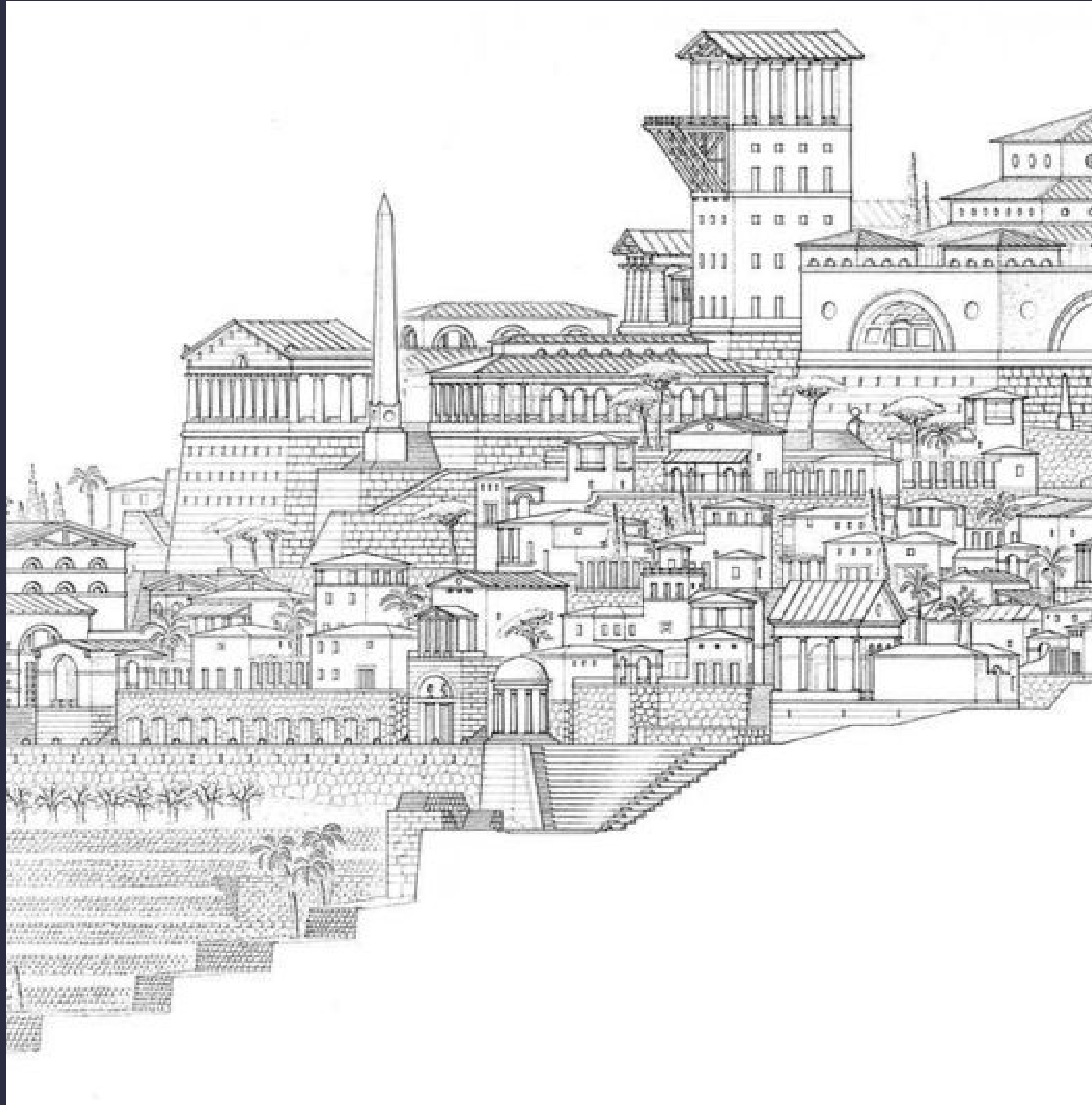




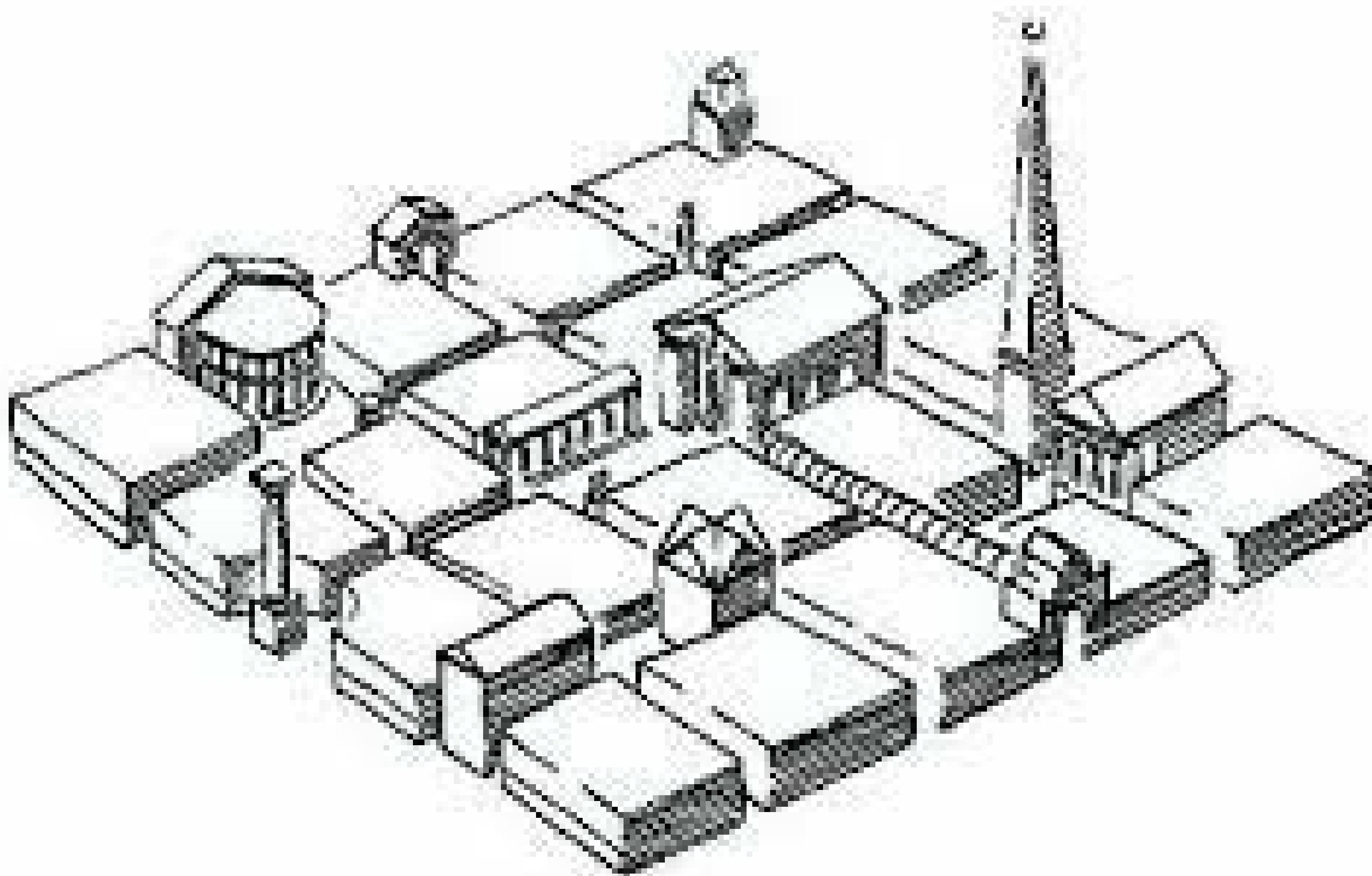
But not all densities are created equal.

Pruitt-Igoe, and the social factors that led to its eventual destruction

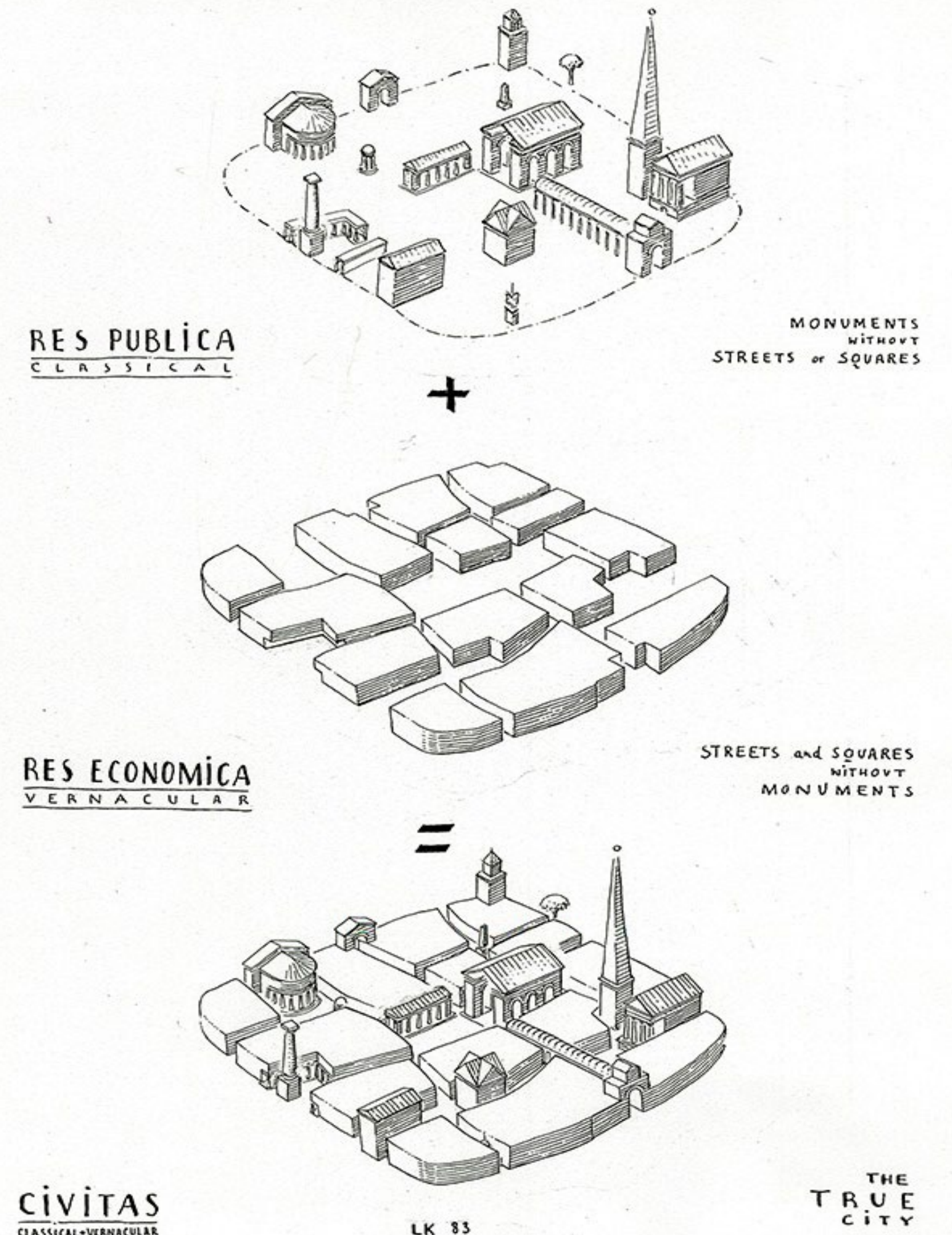
Traditional urbanism and good design are the route to making density a “fair trade” with what we give up.



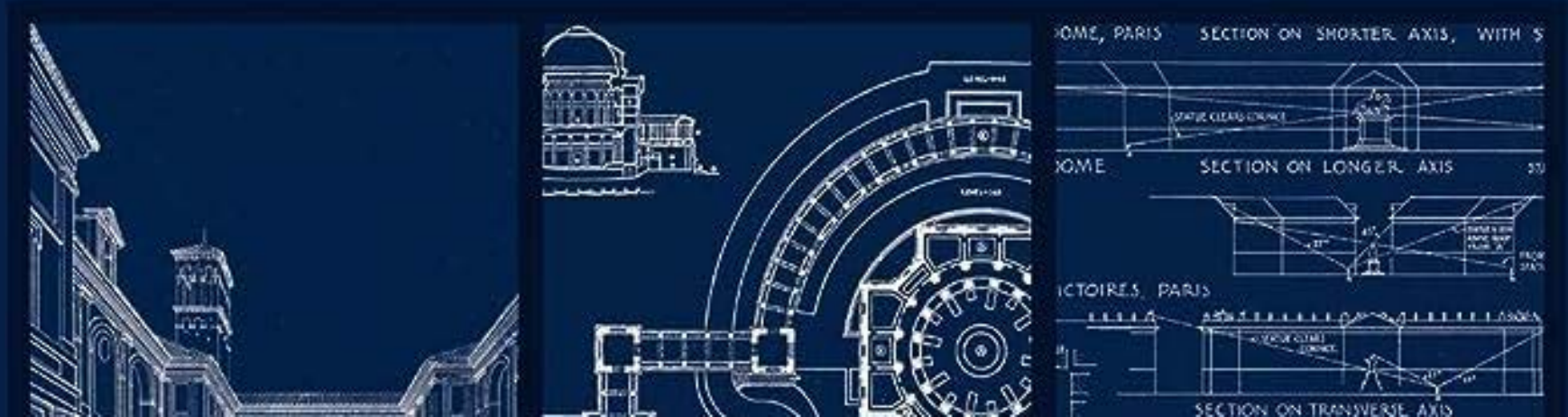
Aristotle to Leon Krier – the key to the Good Life is the “polis”, or community



CIVITAS



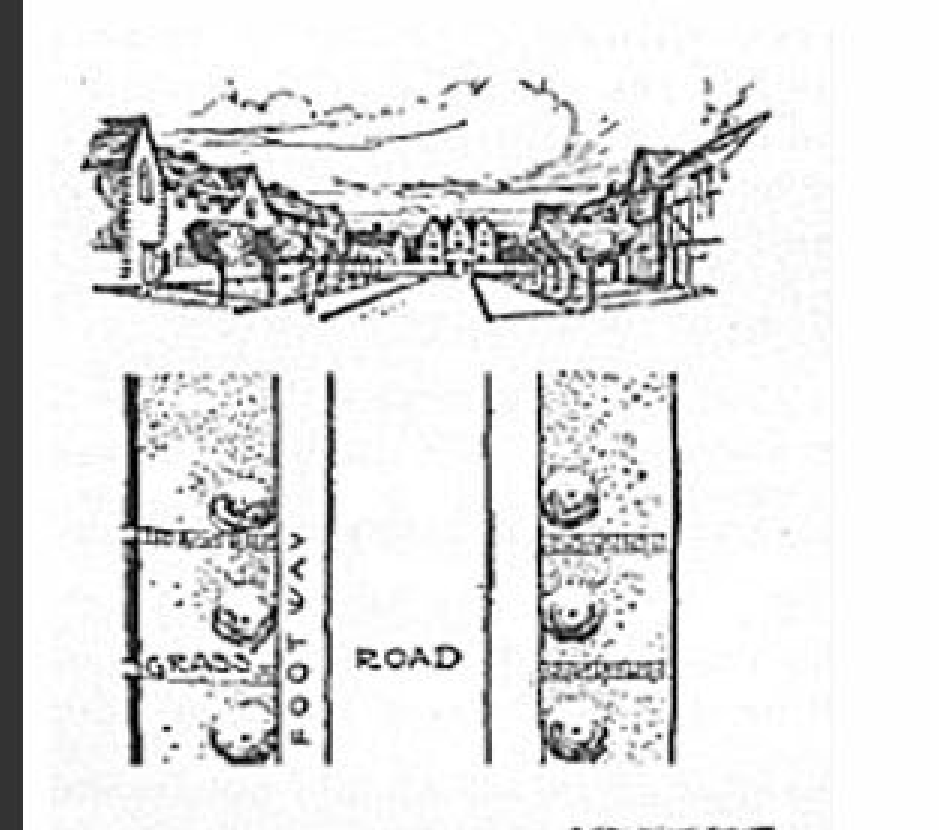
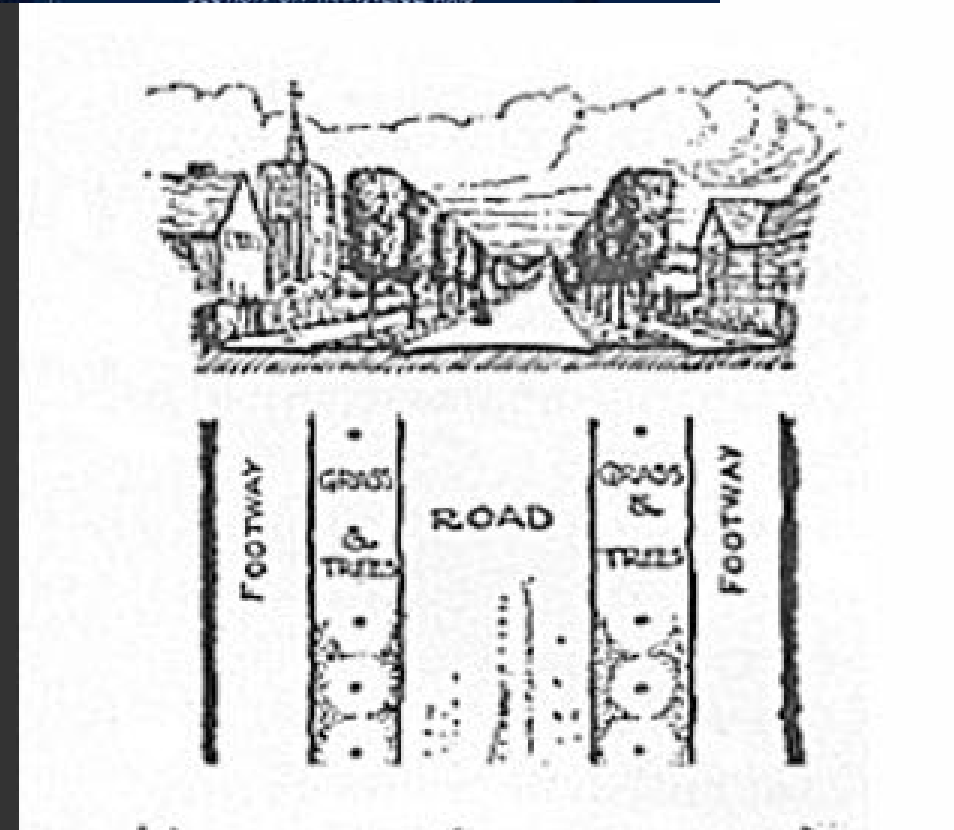
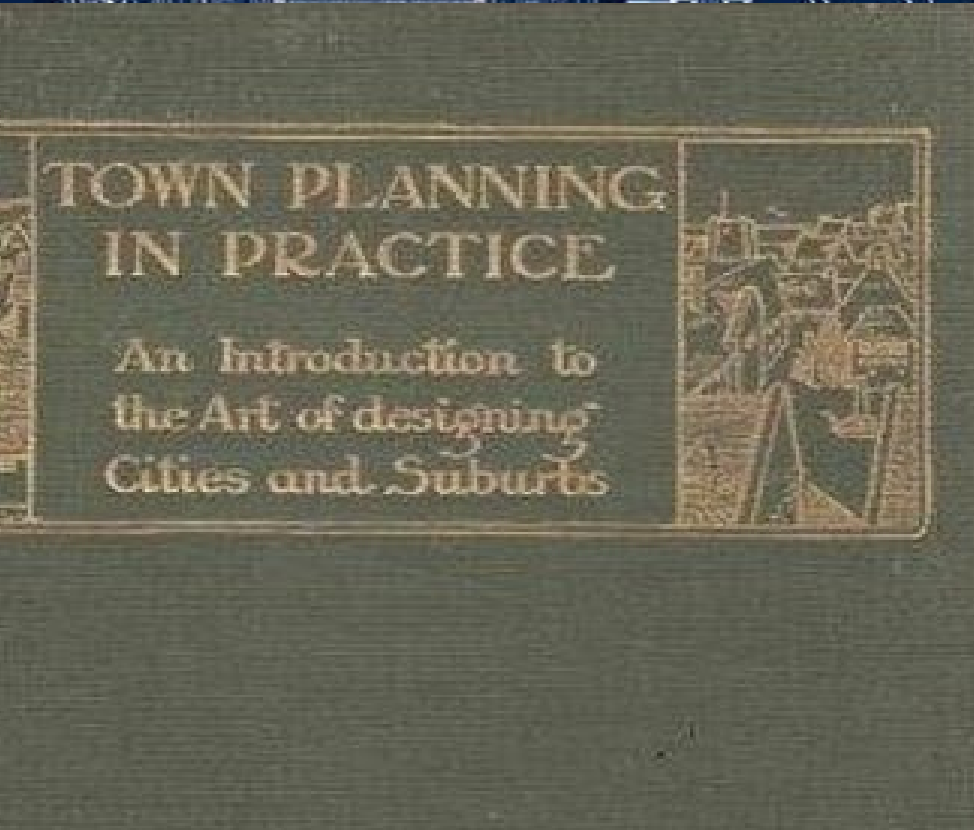
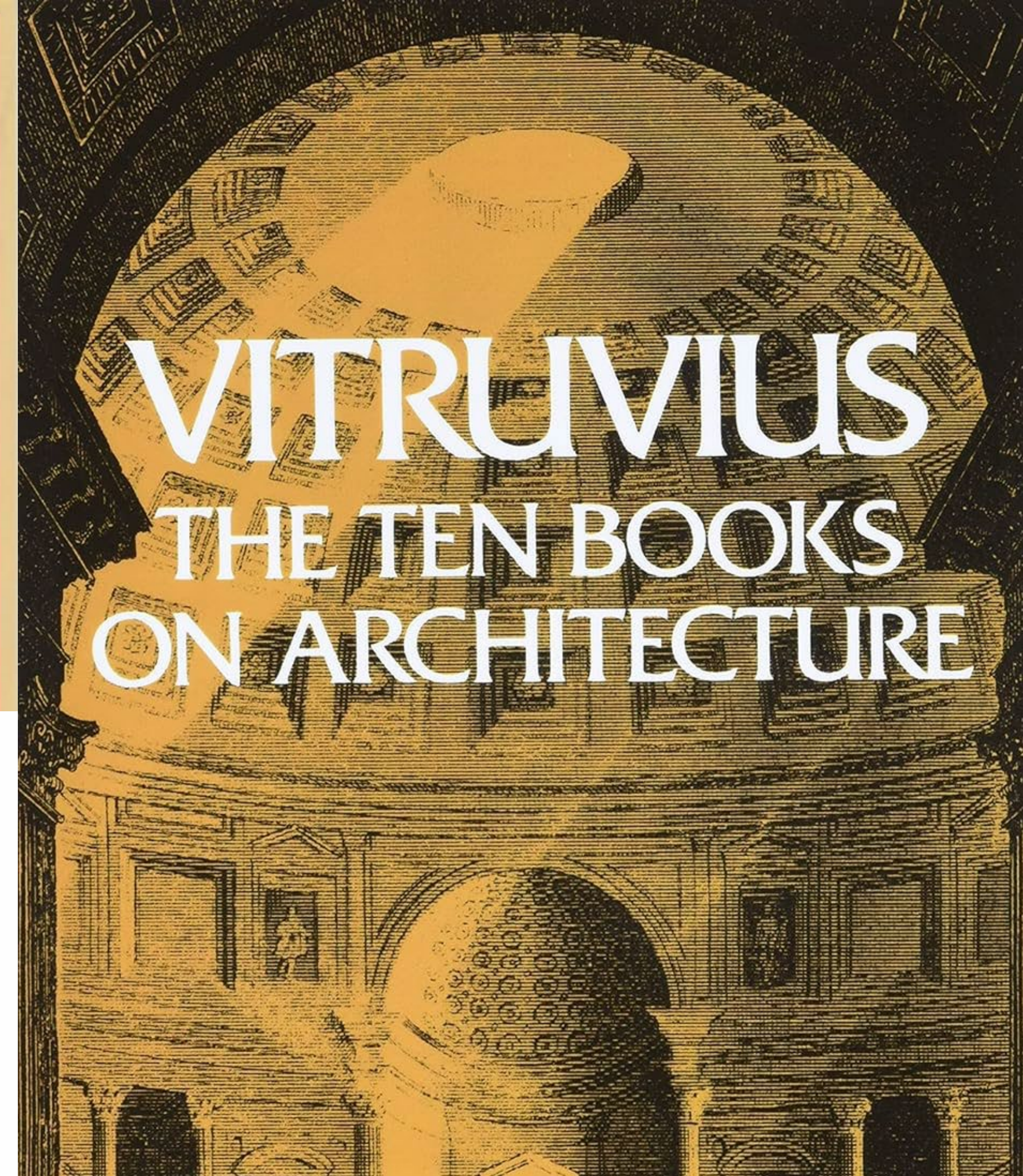
THE AMERICAN VITRUVIUS:
AN ARCHITECTS' HANDBOOK OF
CIVIC ART
HEGEMANN & PEETS



A Pattern Language
Towns • Buildings • Construction

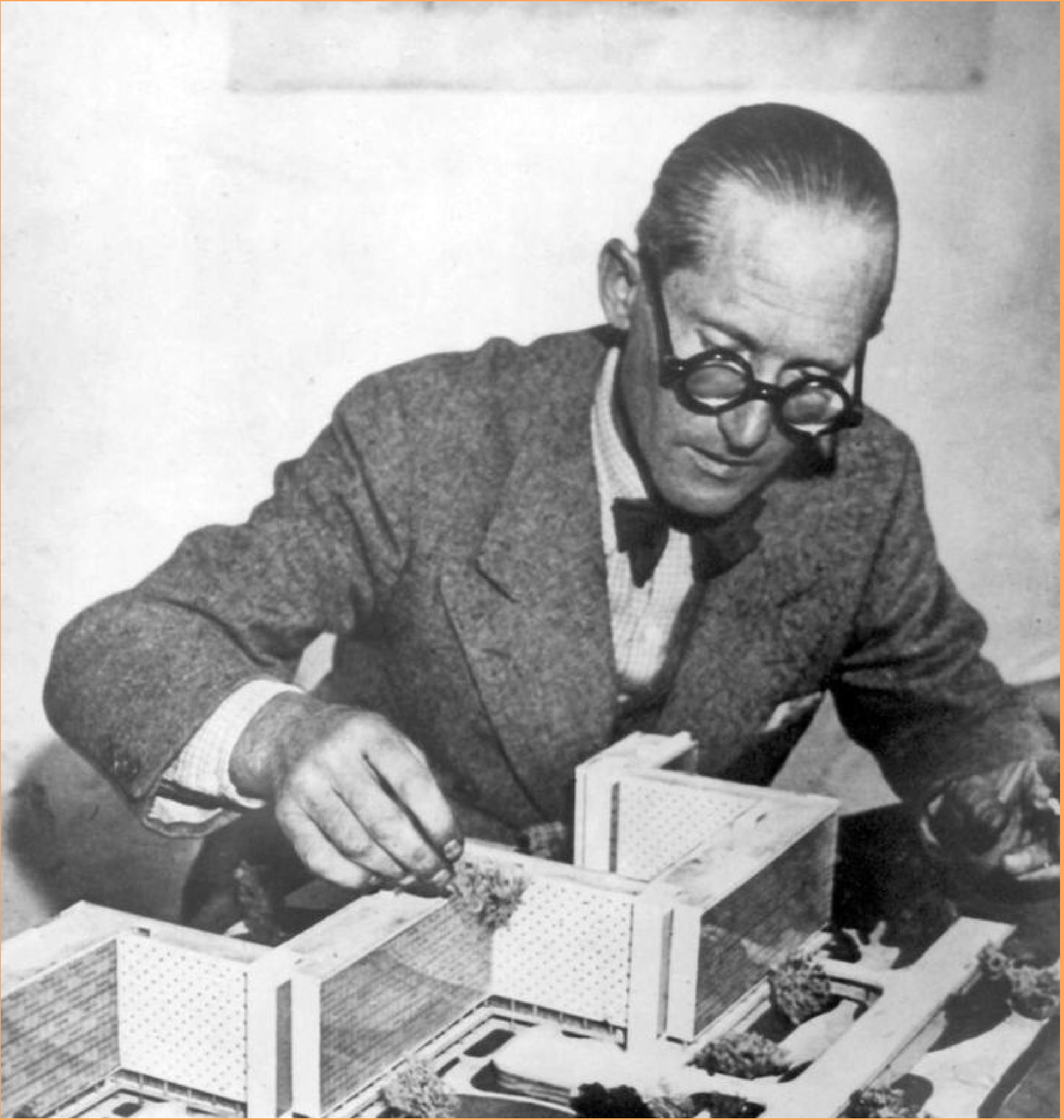
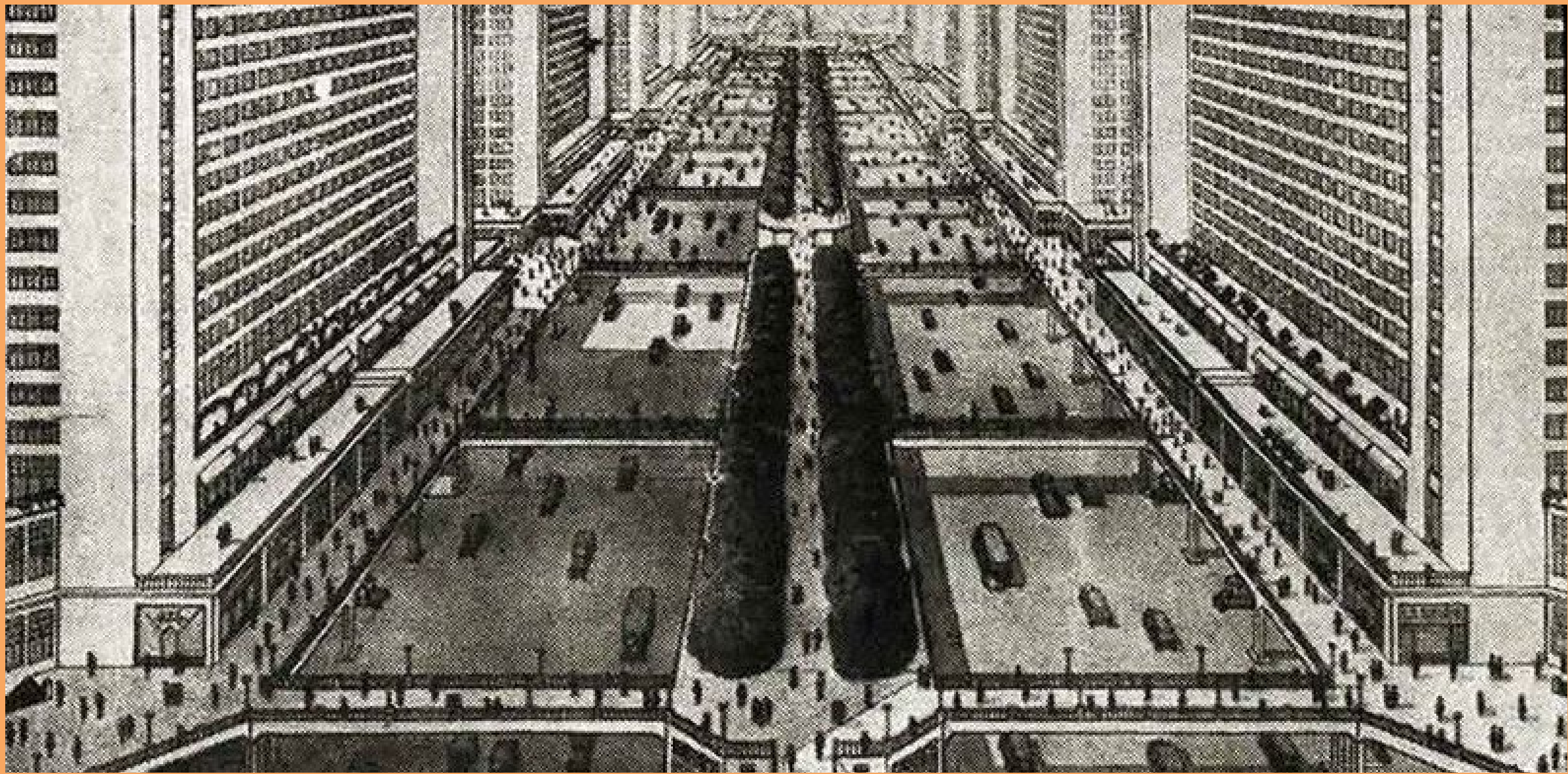


VITRUVIUS
THE TEN BOOKS
ON ARCHITECTURE



Town planning and urbanism were lost to the Modernists.

RELEARNING the principles of making genuine places that can grow and change.



Urbanism is
placemaking:

*“the process of
building a
unique identity
and strong
community
spirit for a
neighborhood or
entire city”.*

Portsmouth, NH
Market Sq.



Urbanism is
placemaking:

*“the process of
building a
unique identity
and strong
community
spirit for a
neighborhood or
entire city”.*

Haverhill, NH

Town Green



Examples of Urbanism In Action

Urbanism vs Anti-Urbanism



Better design
often can
overcome
residents' fears
and speed up
approval.



***The Cottages on Greene,
East Greenwich, RI***

Comprehensive plan and zoning called for “high density housing”.

15 Units/.9 acres



***The Cottages on Greene,
East Greenwich, RI***

15 units is not
just 15 units

15 Units/.9
acres



*The Cottages on Greene,
East Greenwich, RI*

15 units is not
just 15 units

15 Units/.9
acres

*The Cottages on Greene,
East Greenwich, RI*



While not a traditional pattern found in town, where the project met the public realm, it matched the scale and style.

The Cottages on Greene, East Greenwich, RI



While not a traditional pattern found in town, where the project met the public realm, it matched the scale and style.

*The Cottages on Greene,
East Greenwich, RI*



What they had
feared:



*The Cottages on Greene,
East Greenwich, RI*

What they were
shown:



*The Cottages on Greene,
East Greenwich, RI*

What they got:



*The Cottages on Greene,
East Greenwich, RI*

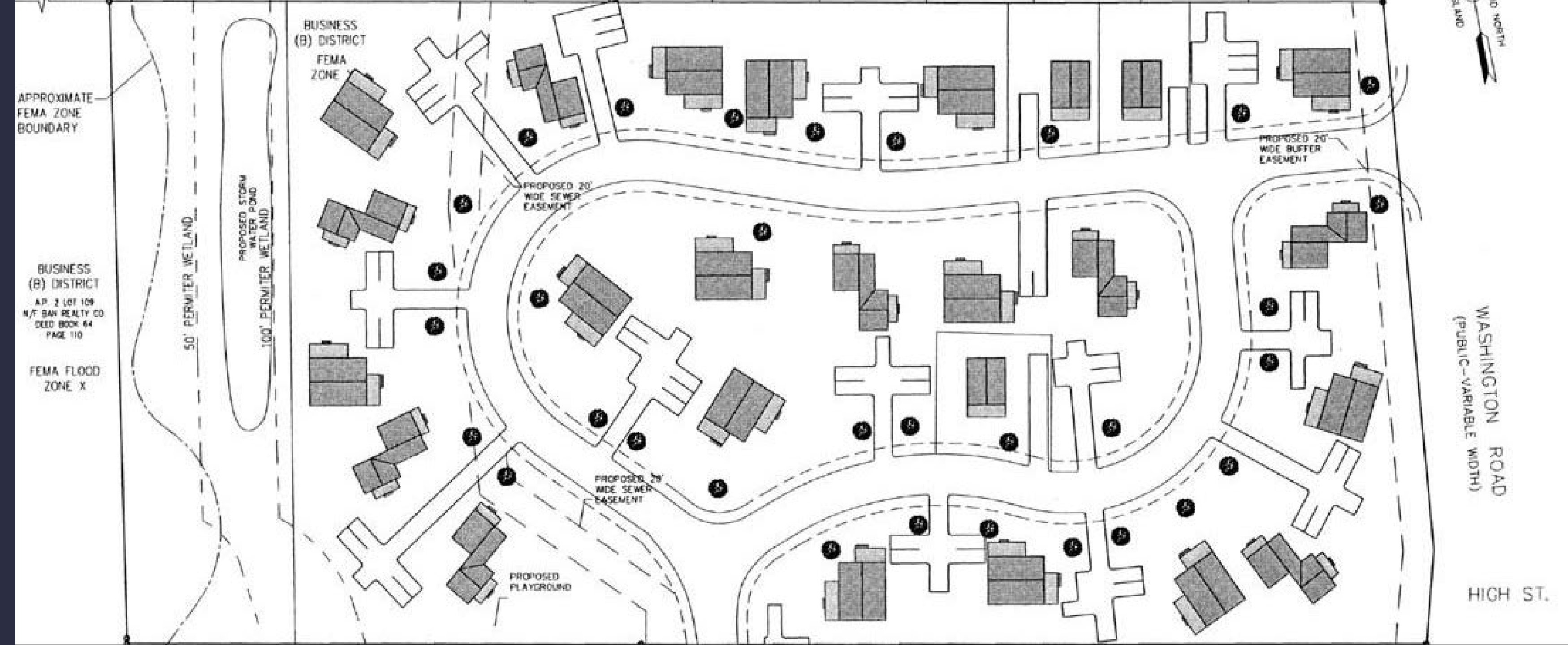
Sweetbriar, Barrington, RI

Redesign of anti-urbanist plan neutralized opposition and delivered privacy and a genuine public realm.



Sweetbriar, Barrington, RI

Redesign of anti-urbanist plan neutralized opposition and delivered privacy and a genuine public realm.



*Sweetbriar,
Barrington, RI*

Redesign of anti-urbanist plan neutralized opposition and delivered privacy and a genuine public realm.





*Sweetbriar,
Barrington, RI*



*Sweetbriar,
Barrington, RI*



Some Relevant Principles of Urbanism – “Good Density”

Urbanism vs Anti-Urbanism



Reflect Local Context

Goal is to feel like a natural extension of the local community – residents don't want to be stigmatized, helps with local approvals



SEA CAPTAINS ROW HYANNIS, MA



Include Features that Foster Community

This includes not only common features like green spaces and community buildings, but also sidewalks and front porches that promote interaction

BREWSTER LANDING BREWSTER, MA

Compensate For Loss Of Privacy With Greater Social Connection

To help connect to the broader community, it's important to maximize visual, pedestrian, and vehicular connections



COTTAGES ON GREENE EAST GREENWICH, RI

Urbanism Appropriate To Its Context

Common unit types and details can be used to create a strong sense of community, but balance with a mix of building compositions, colors, etc. to create visual interest.



Sense of Ownership and Address

Individual entries and defined yards allow residents to feel sense of ownership and a pride of place



TRINITY PLACE PROVIDENCE, RI

Dignified Design, Based on Local Patterns

Use simple, traditional, construction friendly details built with durable and sustainable materials – seeking balance of good design, healthy living, cost effectiveness, and maintenance friendliness



Provide a Variety of Types and Tenures Including Mixed Use and Rental

Single Family housing is but one component of creating complete communities –
integrated variety is always preferable
to monoculture



CAPITOL SQUARE PROVIDENCE, RI

PART 5

But How to Get Better Design?

Codes, guidelines, pre-approved plans, and public pre-development





Figure 4-1. Density Diagram

Source: Union Studio

Density? Yes, in my backyard!

*Is all density the same?
Can we find options
that feel “right” for the
community?*

THE DENSITY DISPUTE

Applying smart growth strategies and turning communities away from unrestricted urban growth requires creative approaches to achieve moderate density. When discussing housing, density is typically described in terms of how many residential units are located per acre of land, often expressed by dwelling units per acre (DU/acre). Density is most commonly associated with high-rise apartment buildings but this is a narrow understanding of its definition. Instead, density functions on a scale from low to high with moderate density as the idealized condition for many of Cape Cod’s village centers. Developing a clear understanding of density helps ease community concern and the common misconceptions that come with it. Cape Cod retail spaces, restaurants, offices, institutional buildings, and residential areas can all benefit from higher density, higher quality, and a vertical mix of uses that help foster public activity and communal life.

New housing, ranging from market-rate to basic workforce housing, should be the predominant upper floor use in new mixed-use projects.⁷⁸ Moderate density residential types, such as medium-scale apartment buildings or a manor house, can serve as appropriate development on the outskirts of village centers, helping to ease the transition between denser downtowns and more sparse residential neighborhoods.

Communities are often wary of neighborhood change, especially when density is mentioned. But density does not always have to mean the high rise buildings that people often fear. Initial studies in Falmouth, Eastham, and Orleans focused on the main commercial areas for each community -- the “transitional” areas at the edge of single family districts -- whereas in Hyannis the focus was on “context appropriate infill” in a historic residential district adjacent to “main street”.

DENSITY CAN COME IN MANY FORMS...

Similar densities can occupy the same amount of space in many ways. Although they look quite different, both images to the right demonstrate 15-unit configurations upon a 3/4 acre lot (20 DU/acre). The left image was what the zoning regulations called for, while the image on the right is what was built by getting various waivers from the town.



Cottages on the Greene (East Greenwich, Rhode Island)

1 unit on 0.25 - 0.5 acres =
2 - 4 DU/acre



Typical Single-Family Home | Cape Cod

2 units on 0.12 acres =
16 DU/acre



Duplex | Pleasant Street, Sandwich

5 units on 0.27 acres =
18 DU/acre



Manor House | Main Street, Sandwich

3 units on 0.29 acres =
10 DU/acre



Manor House | Pleasant Street, Sandwich

11 units on 0.49 acres =
22 DU/acre



Walk Up | South Street, Hyannis

8 units on 0.4 acres =
20 DU/acre



Stacked Flats | Glenwood Ave & Chancery Lane, Falmouth

MISSING MIDDLE

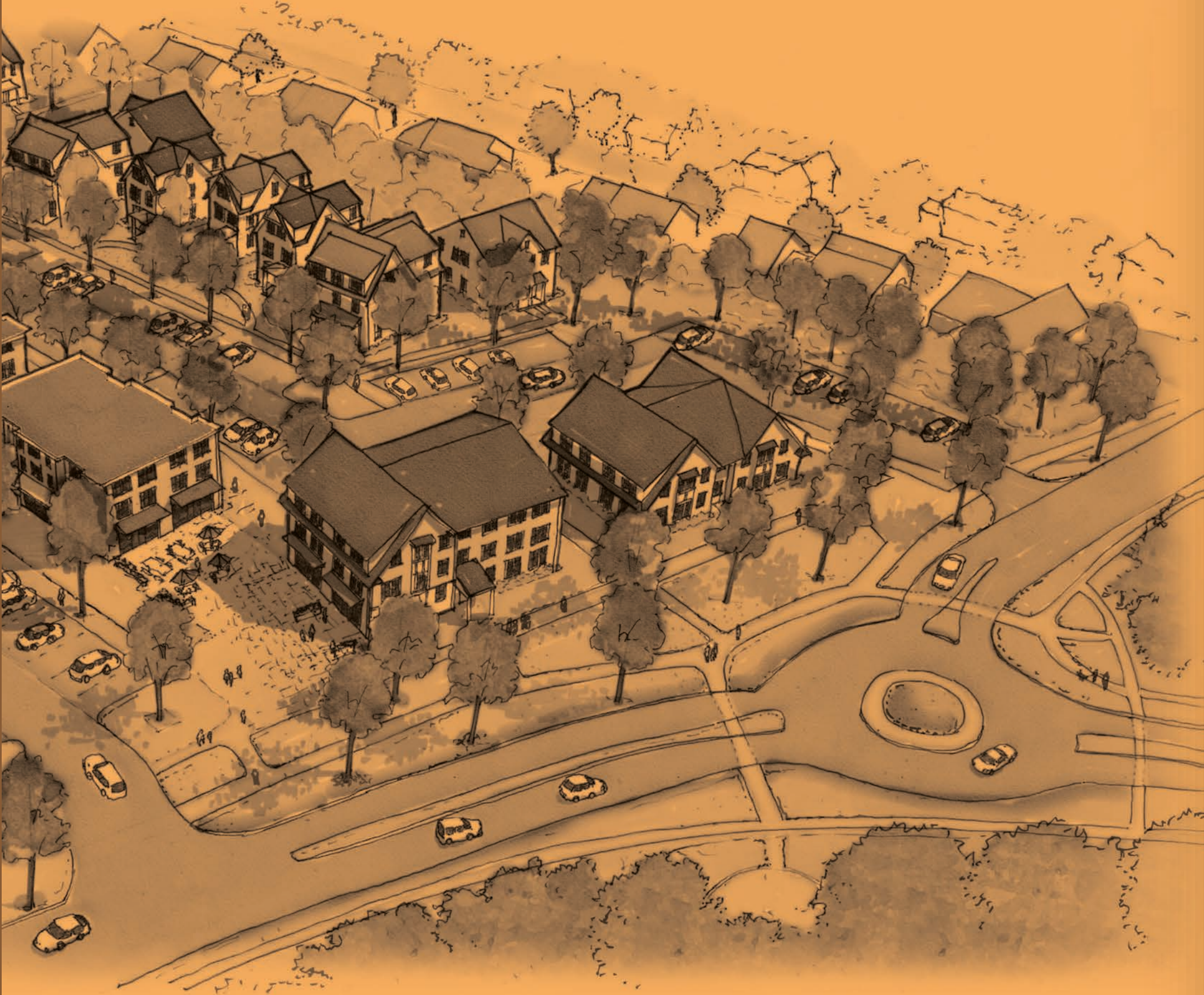


Figure 3-1. Major causes of Cape Cod's housing shortage

Source: Quinn and Cox, "Housing on Cape Cod: The High Cost of Doing Nothing," Housing Assistance Corporation, 2018.

Can Missing Middle Housing Save the day?

According to a 2017 report by the Cape Cod Commission, there is a need for an additional 4,441 rental units.⁵¹

THE MULTI-FACETED ROLE OF MISSING MIDDLE HOUSING

Missing Middle housing can provide several benefits to a region, including the addition of housing choice. Housing choice is crucial in providing ample housing for diverse communities with a range of income and familial compositions. Missing Middle housing is not synonymous with affordable housing but it can help alleviate an affordable housing shortage by increasing supply and providing a myriad of building types. The following section explores the role of Missing Middle housing in an affordable context, but keep in mind that Missing Middle housing is most successful when it is able to support a mixed-income community. Although Cape Cod is currently experiencing an affordable housing crisis, the cost

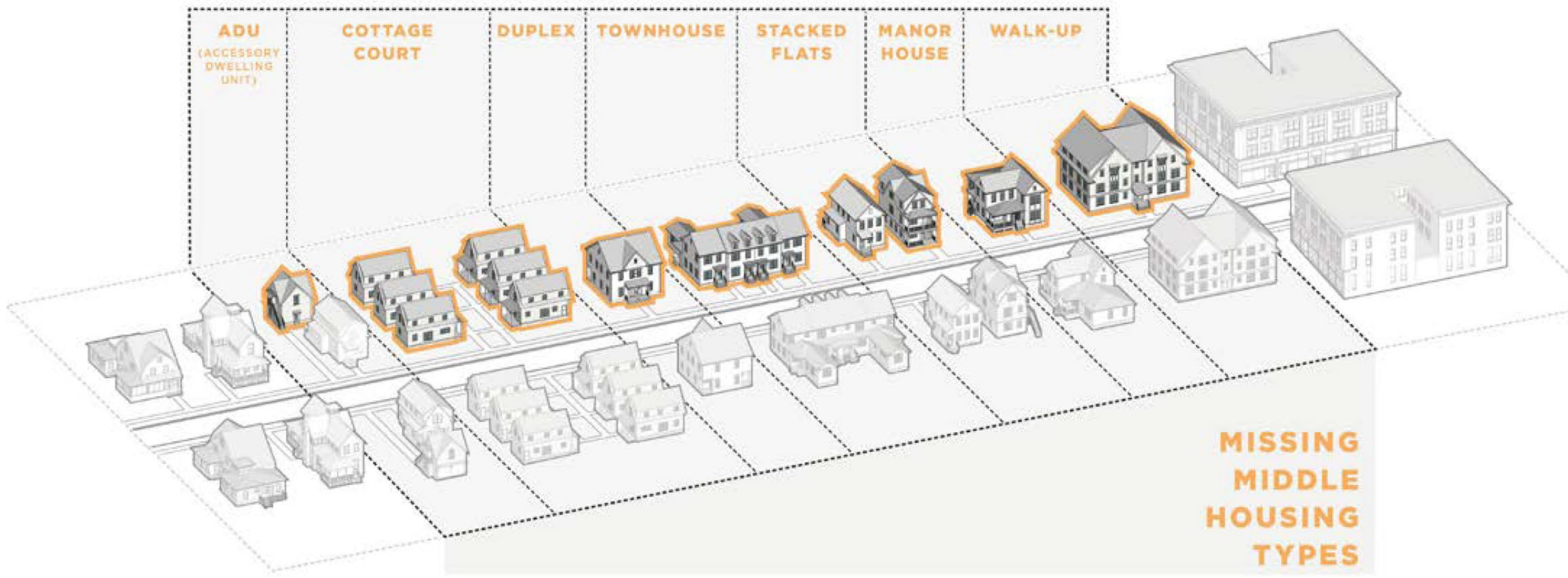
of housing is steadily increasing, affecting more households every year and creating a greater urgency for housing choice.

CONVENTIONAL ZONING AND VACATION RENTALS HAVE EXASPERATED CAPE COD'S AFFORDABLE HOUSING CRISIS

The forces behind Cape Cod's affordable housing shortage are multifarious, interdisciplinary, and undeniably complex. However, there are two factors that are recognized to have had a significant impact on the lack of affordable housing on Cape Cod - traditional and outdated euclidean zoning combined with the region's seasonal vacation culture.⁵²

Our Approach to Missing Middle Housing

The following diagram illustrates the local range of Missing Middle housing types that Union Studio developed for the New England region. The types range in scale and density and can be used individually or in combination, depending on the size of the project. Here, the types are ordered approximately by dwelling units per acre. Types can additionally be clustered together, like with the cottage court, to achieve higher density. Each type is discussed in more detail on the following pages.



Form-Based Codes seem to promise a way of getting appropriate design, but often too vague – and hard to implement.

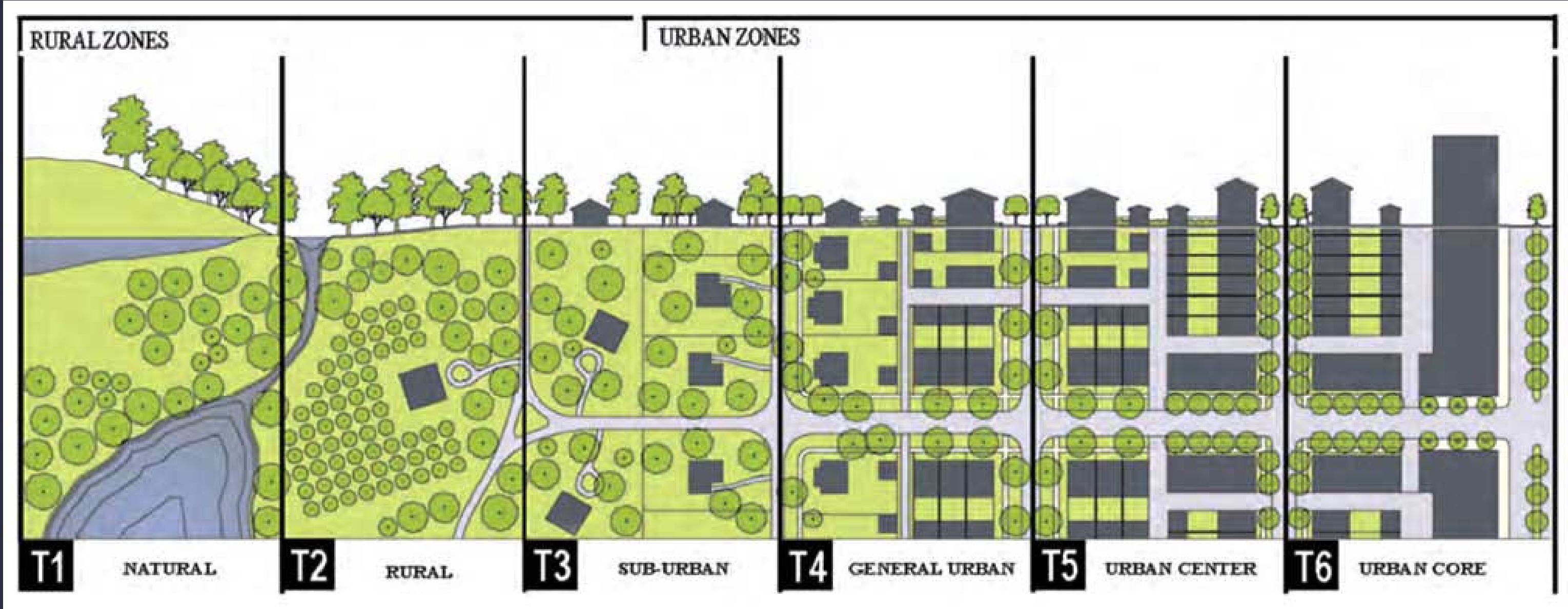


TABLE 7. PRIVATE FRONTAGES

SMARTCODE
Municipality

TABLE 7: Private Frontages. The Private Frontage is the area between the building Facades and the Lot lines.

	SECTION	PLAN	
	LOT PRIVATE FRONTAGE R.O.W. PUBLIC FRONTAGE	LOT PRIVATE FRONTAGE R.O.W. PUBLIC FRONTAGE	
a. Common Yard: a planted Frontage wherein the Facade is set back substantially from the Frontage Line. The front yard created remains unfenced and is visually continuous with adjacent yards, supporting a common landscape. The deep Setback provides a buffer from the higher speed Thoroughfares.			T2 T3
b. Porch & Fence: a planted Frontage wherein the Facade is set back from the Frontage Line with an attached porch permitted to Encroach. A fence at the Frontage Line maintains street spatial definition. Porches shall be no less than 8 feet deep.			T3 T4
c. Terrace or Lightwell: a Frontage wherein the Facade is set back from the Frontage line by an elevated terrace or a sunken Lightwell. This type buffers Residential use from urban Sidewalks and removes the private yard from public Encroachment. Terraces are suitable for conversion to outdoor cafes. Syn: Dooryard.			T4 T5
d. Forecourt: a Frontage wherein a portion of the Facade is close to the Frontage Line and the central portion is set back. The Forecourt created is suitable for vehicular drop-offs. This type should be allocated in conjunction with other Frontage types. Large trees within the Forecourts may overhang the Sidewalks.			T4 T5 T6
e. Stoop: a Frontage wherein the Facade is aligned close to the Frontage Line with the first Story elevated from the Sidewalk sufficiently to secure privacy for the windows. The entrance is usually an exterior stair and landing. This type is recommended for ground-floor Residential use.			T4 T5 T6
f. Shopfront: a Frontage wherein the Facade is aligned close to the Frontage Line with the building entrance at Sidewalk grade. This type is conventional for Retail use. It has a substantial glazing on the Sidewalk level and an awning that may overlap the Sidewalk to within 2 feet of the Curb. Syn: Retail Frontage.			T4 T5 T6
g. Gallery: a Frontage wherein the Facade is aligned close to the Frontage line with an attached cantilevered shed or a lightweight colonnade overlapping the Sidewalk. This type is conventional for Retail use. The Gallery shall be no less than 10 feet wide and should overlap the Sidewalk to within 2 feet of the Curb.			T4 T5 T6
h. Arcade: a colonnade supporting habitable space that overlaps the Sidewalk, while the Facade at Sidewalk level remains at or behind the Frontage Line. This type is conventional for Retail use. The Arcade shall be no less than 12 feet wide and should overlap the Sidewalk to within 2 feet of the Curb. See Table 8.			T5 T6



Design Guidelines
can be effective if
written correctly

Difficult to legally
implement.

Can be a “soft
ordinance” which
encourages
improved design



SHANNOCK HISTORIC MILL VILLAGE



Photo: Aerial circa 1942 (The Hartford Courant, 1984)

DESIGN GUIDELINES FOR BUILDING IN THE VILLAGE

OCTOBER 30, 2010

 **Horsley Witten Group**
Sustainable Environmental Solutions
90 Route 6A • Sandwich, MA 02563 • 508-833-6600 • fax 508-833-3150
30 Green Street • Newburyport, MA 01950 • 978-499-0601 • fax 978-499-0602
370 Ives Street • Providence, RI 02906 • 401-272-1717 • fax 401-439-8368

 **DPA**
DONALD POWERS ARCHITECTS
140 UNION STREET
PROVIDENCE, RHODE ISLAND 02903-1714
T 401.272.4724 F 401.272.4825
WWW.DONALDPOWERSARCHITECTS.COM

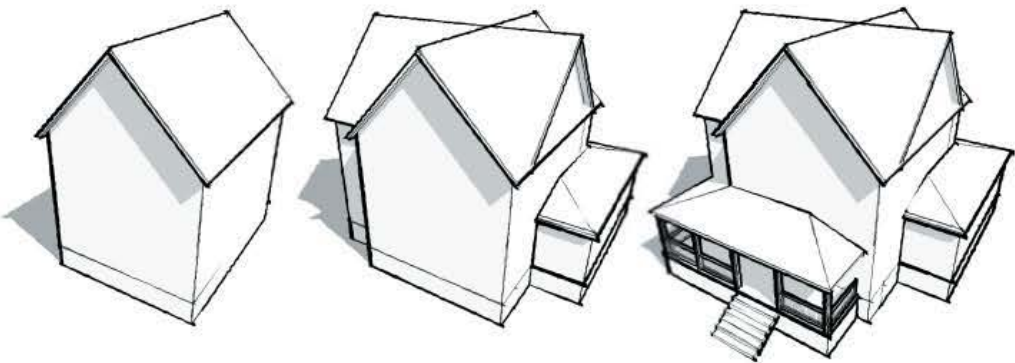
SHANNOCK HISTORIC MILL VILLAGE DISTRICT

BUILDING FORM

SECONDARY MASSING

ADDITIONAL FORMS CAN
ADD INTEREST AND SPACE
TO A SIMPLE BUILDING.

Traditional buildings change over time to accommodate the needs of new generations. Additions may provide for an expanding family, but always defer to the mass of the original home.



The transformation of a simple primary volume with a succession of secondary elements.

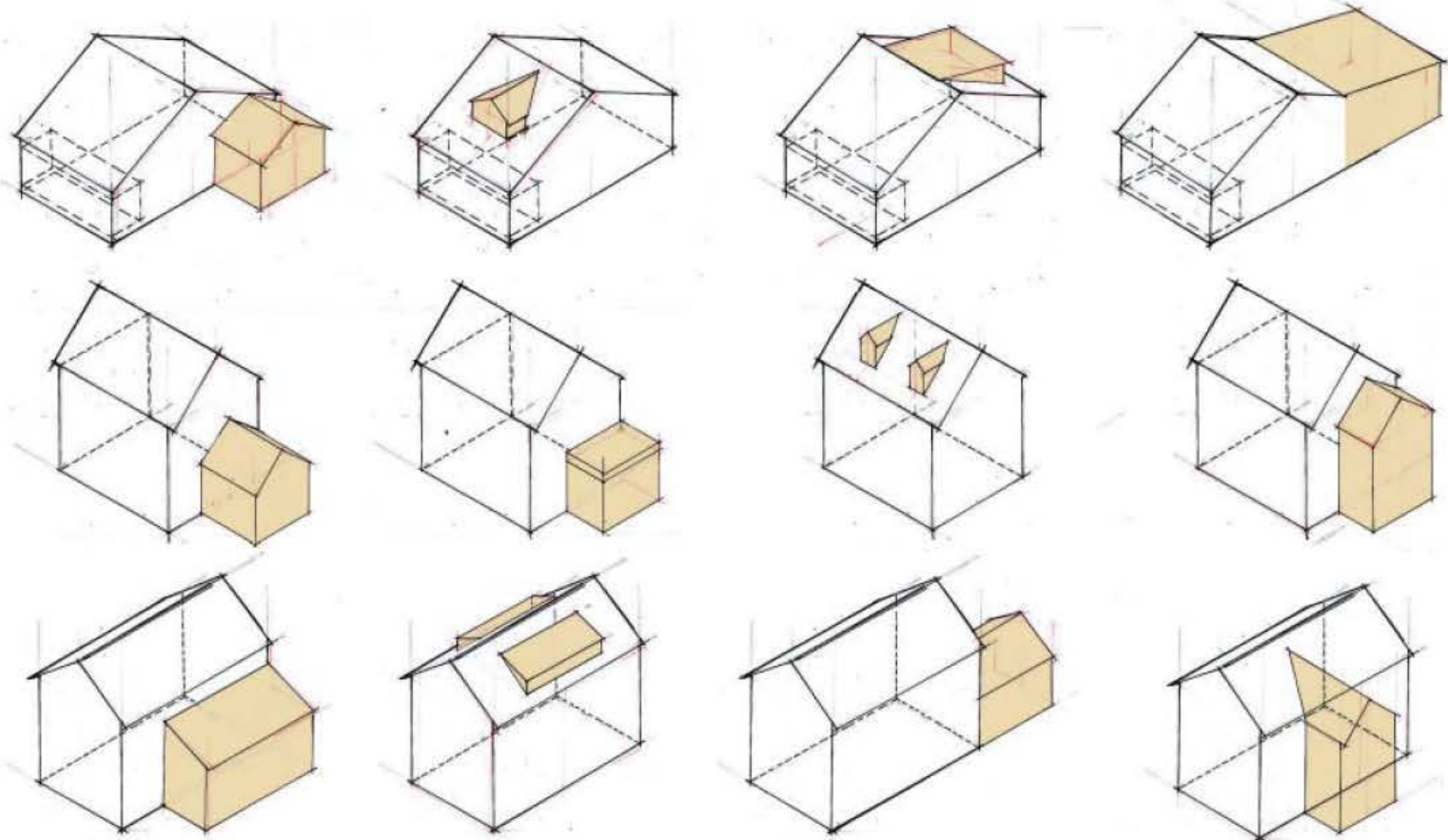
DO



Key Points

- Smaller homes may be one single clear form - larger homes may incorporate a second or a third volume.
- The scale and treatment of secondary massing features should remain secondary to the main form.

Historic homes in the village have a variety of additions, including new porches, wings and dormers. The new spaces provide room for growth of the changing inhabitants or trends in residential amenities.



Various ways to expand and transform an existing home. Additions are most successful when they defer in scale and proportion to the primary form of the original building. Secondary masses may also be used to compose a new building to create a modern structure with the character of a traditional home that has been around for generations.

DESIGN GUIDELINES

-33-

Helping communities take ownership of their growth BEFORE the developer shows up.

Missing Middle

A CASE STUDY: HOUSING ON CAPE COD



unionstudioarch.com



Falmouth, MA

ILLUSTRATIVE CASE STUDY

In Falmouth, the focus of the Community Resiliency by Design effort was the Davis Straits area. The Town identified this currently auto-centric, mostly commercial zone as a good location to promote future mixed-use, moderate-density redevelopment in keeping with the more historic core to which this area serves as an extension. As with many other locations on the Cape, one challenge of is the lack of transition from the high-intensity commercial core to the adjacent low-intensity, single-family residential neighborhoods. To address this, the illustrative plan proposes infilling a corner of an existing retail center with several of the Missing Middle types that provide denser and are two to three stories in height. Three-story Walk-Ups,

including several with commercial uses on the ground floor, line the main street and primary access to the retail area. Further back into the site, the types transition to smaller scale two-and-a-half story Manor Houses, Stacked Flats, and Townhouses, with two-story Duplexes included along the edge adjacent to the existing single-family homes. The resulting density for this illustrative case study is roughly 20 dwelling units (DU) to the acre.



BEFORE



AFTER



Public comment
and review
happens
without the
developer at
the table.

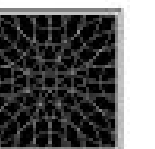
More public
confidence in
the output.



NEWBURYPORT WATERFRONT REDEVELOPMENT

ILLUSTRATIVE SITE PLAN

SEPTEMBER 12, 2012



UNION STUDIO
ARCHITECTURE & COMMUNITY DESIGN



But:

Must prove its economical feasibility with realistic cost assumptions and development proforma



SUMMARY PUBLIC IMPROVEMENT COST ESTIMATES - 3/22/17			
	Phase 1 & 1A (2)	Phase 3	Total
PARK IMPROVEMENTS	\$3,056,000	\$1,502,000	\$4,558,000
NON-PARK IMPROVEMENTS	\$5,947,000	\$1,915,000	\$7,862,000
DREDGE CELL CLOSURE	\$400,000	\$0	\$400,000
TOTAL PUBLIC IMPROVEMENTS	\$9,403,000	\$3,417,000	\$12,820,000
Note: All costs in unescalated 2017 dollars Does not include costs of E-W Internal Mid-Block Park, South Bluff-top land improvements, assumed to be borne by developer(s) * Cost of paddle boat dock offset by grant = \$150,000 ** Pre-construction Engineering & Soft Cost factor not applied to South Riverfront Earthwork & Walls (Bluff Excavation)			

The Numbers Work

\$14.87M public improvements bond, funded FY2018–FY2025

Private development delivered FY2021–FY2027

TIF revenue covers bond at ~1.8–2.0x, rising through 2042

Land sales provide additional upside revenue

PUBLIC IMPROVEMENT COST ESTIMATES - 3/22/17			
	Phase 1 & 1A (2)	Phase 3	Total
PARK IMPROVEMENTS			
ADA ACCESSIBLE PADDLE BOAT DOCK*	\$0	\$0	\$150,000
BOAT DOCKS	\$128,500	\$194,800	\$323,300
PARK INFRASTRUCTURE	\$1,909,950	\$0	\$1,909,950
PARK AMENITIES	\$0	\$335,000	\$335,000
PARK BUILDINGS	\$440,000	\$246,400	\$686,400
MAGLARAS PARK CONNECTOR	\$0	\$362,000	\$362,000
SOUTH PARK ELEMENTS	<u>\$26,250</u>	<u>\$0</u>	<u>\$26,250</u>
SUB TOTAL	\$2,504,700	\$1,138,200	\$3,792,900
7% DESIGN AND CONSTRUCTION OVERSIGHT	\$175,329	\$79,674	\$255,003
15% CONTINGENT	\$375,705	\$170,730	\$546,435
12% PHASING PREMIUM (DESIGN AND MOBILIZATION)	<u>\$0</u>	<u>\$113,820</u>	<u>\$113,820</u>
TOTAL PARK IMPROVEMENTS	\$3,055,734	\$1,502,424	\$4,708,158
<i>less Grant Funding for Paddle Boat Dock</i>	<i>\$0</i>	<i>\$0</i>	<i>-\$150,000</i>
TOTAL PARK NET OF GRANT	\$3,055,734	\$1,502,424	\$4,558,158
NON-PARK IMPROVEMENTS			
NORTH			
Streets & Utilities: Riverfront Street	\$1,585,000		\$1,585,000
Streets & Utilities: Washington Street Extension	\$755,000	\$0	\$755,000
Streets & Utilities: Hillside Street		\$701,000	\$701,000
Parking Lot	\$35,000	\$258,000	\$293,000
Shoreline Improvements	\$180,000	\$60,000	\$240,000
Earthwork & Walls	<u>\$643,000</u>	<u>\$258,750</u>	<u>\$901,750</u>
North Subtotal	\$3,198,000	\$1,277,750	\$4,475,750
Pre-construction Engineering & Soft Costs (10%)	\$319,800	\$127,775	\$447,575
Contingency (25%)	\$799,500	\$319,438	\$1,118,938
Phasing Premium (12%)		<u>\$153,330</u>	<u>\$153,330</u>
Total with Soft Costs and Contingencies - North	\$4,318,000	\$1,879,000	\$6,197,000
SOUTH RIVERFRONT			
Streets & Utilities: River Street Rebuild	\$497,000		\$497,000
Shoreline Improvements	\$70,500	\$23,500	\$94,000
Earthwork & Walls	<u>\$862,000</u>		<u>\$862,000</u>
South Subtotal Riverfront	\$1,430,000	\$24,000	\$1,454,000
Pre-construction Engineering & Soft Costs (10%)**	\$56,800	\$2,400	\$59,200
Contingency (25%)*	\$142,000	\$6,000	\$148,000
Phasing Premium (12%)		<u>\$2,880</u>	<u>\$2,880</u>
Total with Soft Costs and Contingencies - South Riverfr	\$1,629,000	\$36,000	\$1,665,000
TOTAL NON-PARK IMPROVEMENTS	\$5,947,000	\$1,915,000	\$7,862,000
DREDGE CELL CLOSURE	\$400,000	\$0	\$400,000
TOTAL PUBLIC IMPROVEMENTS	\$9,402,734	\$3,417,424	\$12,820,158
Note: All costs in unescalated 2017 dollars Does not include costs of E-W Internal Mid-Block Park, South Bluff-top land improvements, assumed to be borne by developer(s) * Cost of paddle boat dock offset by grant = \$150,000 ** Pre-construction Engineering & Soft Cost factor not applied to South Riverfront Earthwork & Walls (Bluff Excavation)			

“Pre-development”
of the
community’s
most
important
sites.

Cocheco
Waterfront,
Dover, NH



“Pre-development”
of the
community’s
most important
sites.



COCHECHO WATERFRONT

SITE LAYOUT

MAY 19, 2017

SCALE: 1"=100'-0"

0 50' 100' 150' 200' 250' 300'

PAGE 3


Ironwood
Landscape Architecture • Planning



UNION STUDIO
ARCHITECTURE & COMMUNITY DESIGN



The City intended to construct the public improvements themselves to add value and lock in the vision.



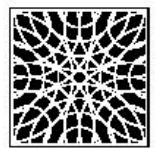
COCHECHO WATERFRONT

PERSPECTIVE VIEW #2

MAY 19, 2017

NOT TO SCALE

PAGE 5



UNION STUDIO
ARCHITECTURE & COMMUNITY DESIGN



Extensive
public process
at community
expense.

Less risk and
cost to
developer,
more
consensus on
result.



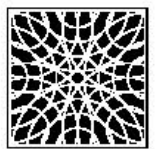
COCHECHO WATERFRONT

PERSPECTIVE VIEW #1

MAY 19, 2017

NOT TO SCALE

PAGE 4



UNION STUDIO
ARCHITECTURE & COMMUNITY DESIGN

Final Result is
in effect a
partnership
between
developer and
City, balancing
each others
interests within
a shared
framework and
vision.



- We have a desperate need to build.
- The cost of construction is not likely to move considerably.
- The only real lever we have is to build more compactly and to reduce the costs of approvals.
- The key to those two goals is traditional urbanism and better contextual design.
- The most effective way to encourage better design is for educated communities to become real partners in their future, co-creating a positive, realistic vision.



Thank You



UNION

Places of Value. *Value of Place.*

www.unionstudioarch.com

Sources

- National Low Income Housing Coalition, “The Gap 2026: A Shortage of Affordable Homes,” nlihc.org
- Harvard Joint Center for Housing Studies, “State of the Nation's Housing 2026,” jchs.harvard.edu
- National Association of Home Builders, “2026 Housing Outlook,” nahb.org
- Center on Budget and Policy Priorities, “Addressing the Housing Affordability Crisis,” cbpp.org
- McKinsey & Company, “Nationwide Housing Crisis,” mckinsey.com
- New Hampshire Fiscal Policy Institute, “High Prices and Low Supply Continue to Impact Housing Affordability in NH,” nhfpi.org
- NH Journal / Josiah Bartlett Center for Public Policy, “New 2026 Home Price Record Reflects Ongoing Supply Shortage”
- National Council of State Housing Agencies, “Who Can Afford to Live in New Hampshire?” ncsha.org
- New Hampshire Business Review, coverage of NH housing polling and NHAR price data
- Innago, “New Hampshire Housing Market Trends & Forecast 2026”

OUR THESIS

Traditional Urbanism Makes Density Welcome

Good, human-scaled design is the only proven way to deliver the housing New Hampshire needs in a form communities will accept — and even embrace.