CHASE

CONGRESS HEIGHTS
ANACOSTIA • ST. ELIZABETHS

CHASE NEIGHBORHOODS PATTERN BOOK

WITH DESIGN AND DEVELOPMENT GUIDELINES

District of Columbia Office of Planning

dhcd

ONE CITY

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OVERVIEW
WHY A PATTERN BOOK?

This *Pattern Book* represents one element of a larger effort by the District of Columbia Office of Planning to provide a strong basis for redevelopment within the Congress Heights, Anacostia, and Saint Elizabeths (CHASE) communities. It works in parallel with the *Design Guideline and Maintenance Handbook,* which provides information about typical architectural styles in the area and guidance on maintenance, repair, and replacement issues for existing housing. The *Pattern Book* is based on buildings in the Anacostia Historic District, but it has broad applicability in all the CHASE neighborhoods. It conforms to local zoning, which sets out the legal requirements for development, and it provides additional design guidance to encourage infill that respects existing neighborhood fabric. This document is intended primarily for developers planning to build infill housing on vacant lots, but it may also prove useful for homeowners interested in rehabilitating their homes.

The *Pattern Book* examines three representative building types in historic the CHASE neighborhoods:

- **Building type 1: Rowhouse**
- **Building type 2: Semi-detached**
- **Building type 3: Detached**

For each of these types the *Pattern Book* describes unit characteristics and provides sample floor plans and elevations that illustrate context-sensitive design principles for each type. It also discusses the potential benefits of modular construction for infill development on vacant lots.

The *Pattern Book* focuses on single-family houses and does not include multifamily and mixed-use types. A study of the existing neighborhood fabric found that the three building types described account for the great majority of neighborhood houses. These sample floor plans and elevations are intended to help shape designs for individual sites.

USING THE PATTERN BOOK

First, identify the neighborhood type and architectural style of the surrounding structures. Second, determine a building type (attached/row house, semi-detached/duplex, detached) for the infill site based on the surrounding neighborhood and street character. Use the site width and parcel location (corner or mid-block) to find a floor plan to adapt for your project. The *Pattern Book* should provide this guidance. For additional assistance, the *Pattern Book* contains a photo guide to the character of front doors, porches, and windows.

As early as possible in the project (ideally before developing conceptual architectural drawings), developers should consult the modular construction section to learn more about this building technique. Developers who decide to explore this time- and money-saving method should plan on early consultation with a modular builder in order to make the process go smoothly and realize its full benefits.

EXISTING NEIGHBORHOOD PATTERNS

This book describes characteristic housing types in the CHASE communities, and the designs it presents have been tailored to reinforce the neighborhoods' historic urban fabric. The models fit typical lot sizes in the CHASE communities (from short and narrow to long and wide) and serve a variety of household types, from couples to families to multigenerational configurations.

The parameters defining these models grew out of a detailed survey of existing residential buildings and parcel sizes in the CHASE neighborhoods. Survey techniques included GIS geometric analysis and site photography. The survey placed particular emphasis on vacant parcels, as they will likely serve as the primary sites for redevelopment under these guidelines.

OVERVIEW
NEIGHBORHOOD PATTERN & HOUSING INVENTORY

A Detailed Survey Shaped These Model Units

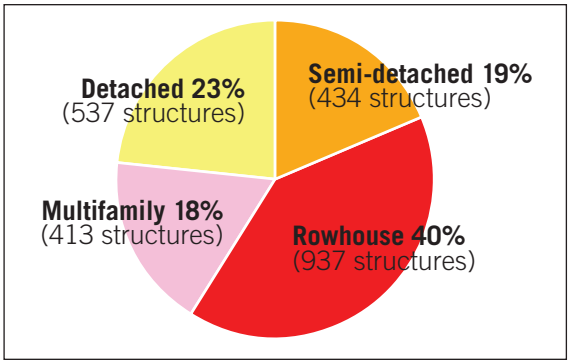
The *Pattern Book*'s model units for infill development reinforce the historic urban fabric of the CHASE neighborhoods. The models fit the area's typical lots; can serve many household types; meet zoning requirements; and reflect market demand.

The models grew out of a detailed survey of existing residential buildings and parcel sizes that combined GIS geometric analysis and site photography. The survey documented existing housing patterns and identified vacant parcels that can move quickly into redevelopment.

Existing Housing Types

A GIS inventory using data provided by the District of Columbia's Office of Planning shows that rowhouses are the most common housing type in the CHASE neighborhoods, constituting about 40% of all residential lots in the study area. Detached housing units account for 23% of all lots; semi-detached units account for 19%; and multi-family structures occupy the remaining 18% of residential lots. (Exhibit 1)

Exhibit 1 **Existing Housing Types Across The CHASE Neighborhoods**

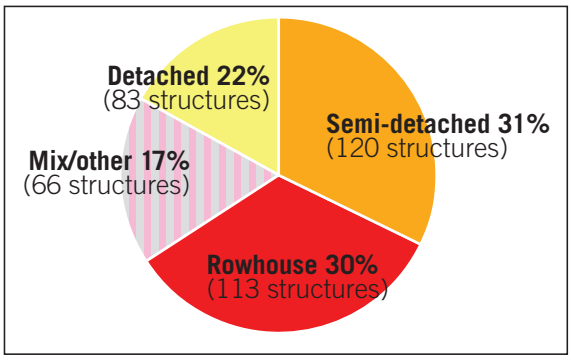


The map on the facing page suggests how these housing types vary in just one section of Anacostia. The appendix includes map tiles for the full CHASE study area, but the mix shown here is typical.

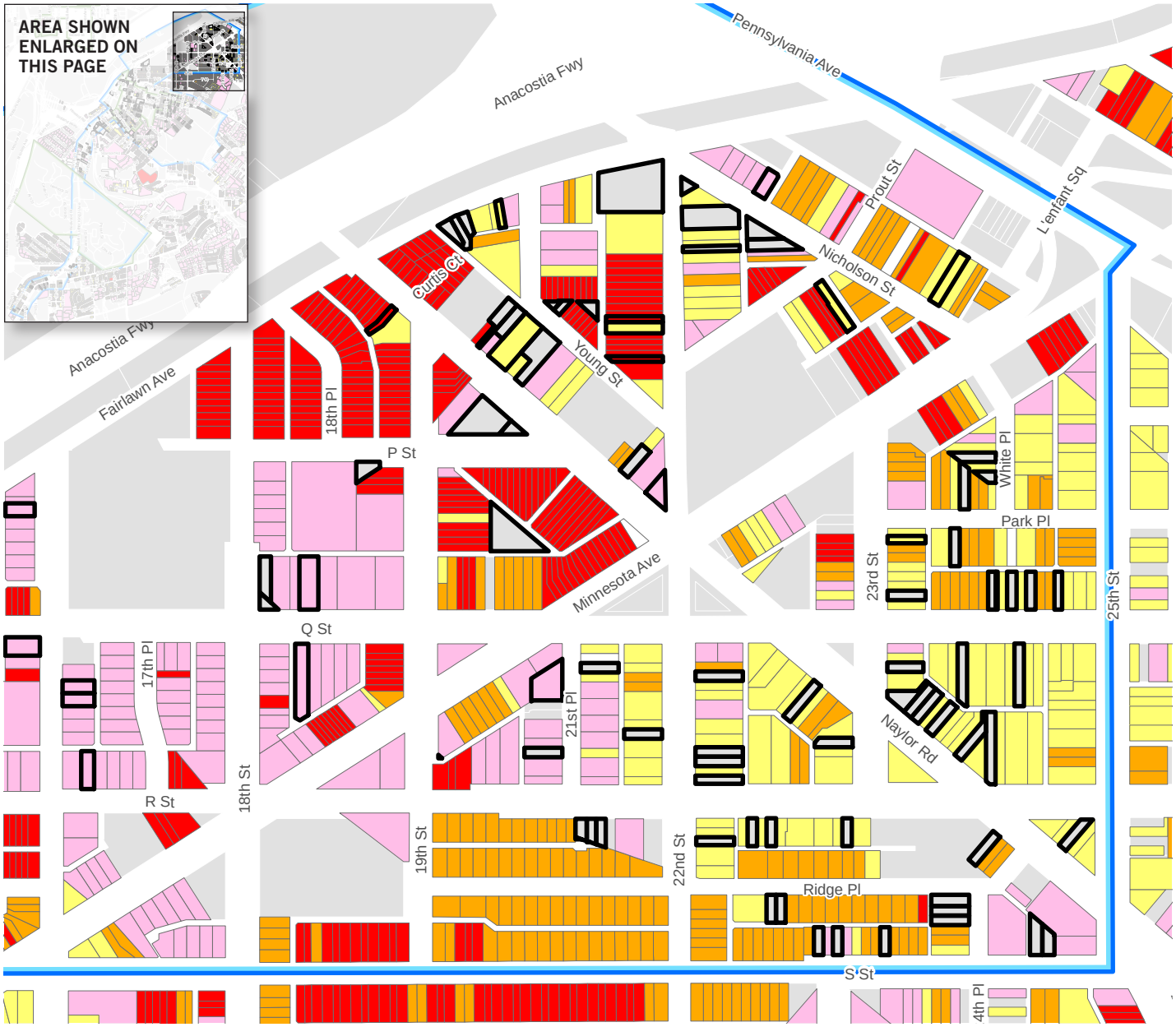
Opportunity Sites for Housing

This pattern book provides a range of housing prototypes that respond to different contexts and lot sizes throughout the CHASE neighborhoods. These prototypes can guide redevelopment of nearly 400 vacant and blighted opportunity sites in residential areas, especially in the near term. These opportunity sites vary in size, and different sizes can support different types of new housing construction: 30% could accommodate rowhouses; 31% could support semi-detached houses, and 22% are large enough for detached houses. The remaining 17% of sites could accommodate a range of housing types, from multiple detached houses to groups of semi-detached houses and rowhouses to multifamily structures.

Exhibit 2 **Suitable Housing Types Based on the Size of Vacant Parcels**



Parcels in the "Mix / other" category are large enough to accommodate may different housing types.



- Detached single-family
- Semi-detached single-family
- Rowhouse
- Multifamily
- Other housing
- CHASE Study Area
- Historic district
- Vacant/blighted property
- Unbuilt residential/other use

NOTE: *"Vacant" sites combines parcels designated vacant in the assessor's database; other unimproved sites potentially eligible for redevelopment; and sites (both exempt and non-exempt) designated vacant by the DC Office of Tax and Revenue (OTR). "Blighted" parcels include sites (both exempt and non-exempt) designated blighted by OTR.*

A Rich Mix of Housing Types And Lot Sizes

This map of part of the CHASE study area shows a rich and varied mix of existing housing types and lot sizes. Even within a single block, housing can range from detached houses to multifamily buildings. Vacant and blighted sites offer opportunities for development based on the prototypes in this pattern book. (The Appendix contains a complete set of maps for the entire CHASE study area.)

0 100 200 400 Feet

LOT SIZES & HOUSING TYPES

Analysis of Vacant Lots Yielded House Models Tailored for the CHASE Neighborhoods

This inventory of housing-lot dimensions draws on GIS data provided by the District's Office of Planning. Analyzing the data helped define the typical dimensions of parcels for each housing type, and these dimensions in turn shaped the housing models presented in this *Pattern Book.*

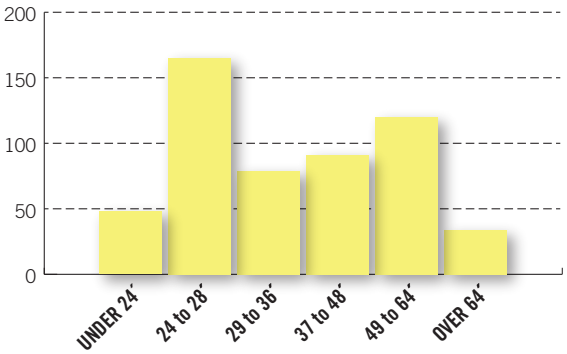
Lots for Detached Houses

Detached houses in the CHASE neighborhoods typically occupy lots that measure between 24 and 64 feet wide. Within that range, they follow no clear pattern; lot widths vary relatively evenly. Very few lots with detached houses measure less than 80 feet deep, and nearly three-quarters measure more than 100 feet deep (Exhibit 4).

Exhibit 3 **Dimensions of Lots With Detached Houses**

WIDTH	COUNT	DISTRIBUTION
Under 24′	48	9%
24′ to 28′	165	31%
29′ to 36′	79	15%
37′ to 48′	91	17%
49′ to 64′	120	22%
Over 64′	34	6%
DEPTH	**COUNT**	**DISTRIBUTION**
under 80′	32	6%
80′ to 99′	108	20%
over 99′	397	74%

Exhibit 4 **Distribution of Lot Widths**



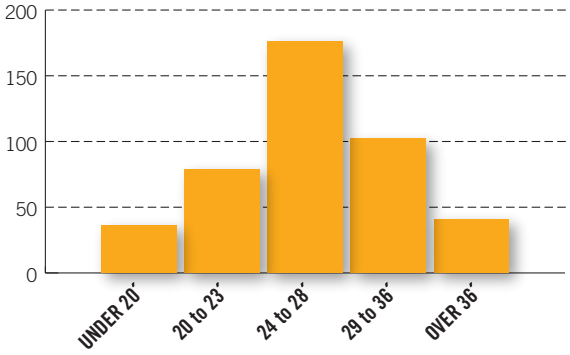
Lots for Semi-Detached Houses

Most semi-detached houses in the CHASE neighborhoods occupy lots between 20 and 36 feet wide, and most of those widths fall near the center of this range, as Exhibit 6 shows. Lot depths range more evenly, with about half above and half below 100 feet deep.

Exhibit 5 **Dimensions of Lots With Semi-Detached Houses**

WIDTH	COUNT	DISTRIBUTION
Under 20′	36	8%
20′ to 23′	79	18%
24′ to 28′	176	41%
29′ to 36′	102	24%
Over 36′	41	9%
DEPTH	**COUNT**	**DISTRIBUTION**
Under 70′	25	6%
70′ to 79′	94	22%
80′ to 99′	70	16%
Over 99′	245	56%

Exhibit 6 **Distribution of Lot Widths**



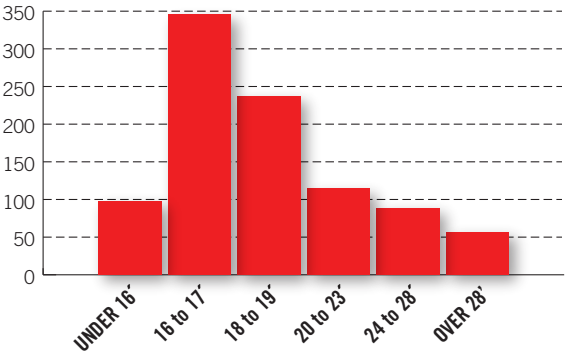
Lots for Rowhouses

About three-quarters of all rowhouse lots in the CHASE neighborhoods measure less than 20 feet wide, primarily because rowhouses often lack side yards, which means they can occupy narrow lots. About 60% of rowhouse lots measure between 70 and 100 feet deep.

Exhibit 7 **Dimensions of Lots With Rowhouses**

WIDTH	COUNT	DISTRIBUTION
Under 16′	97	10%
16′ to 17′	345	37%
18′ to 19′	237	25%
20′ to 23′	114	12%
24′ to 28′	88	9%
Over 28′	56	6%
DEPTH	**COUNT**	**DISTRIBUTION**
Under 70′	70	7%
70′ to 79′	193	21%
80′ to 99′	381	41%
Over 99′	293	31%

Exhibit 8 **Distribution of Lot Widths**



OVERVIEW SUSTAINABLE DESIGN

Lots for Detached Houses

Sustainable design principles for housing should emphasize the "triple bottom line." That means they should successfully address social, environmental, and economic needs and issues, including:

- Social
  - > A fair mix of affordable, workforce, and market-rate housing
  - > Universal design
  - > Safe and secure
- Environmental
  - > Resource efficiency
  - > Waste efficiency, meaning producing of minimal amounts of waste during construction and occupancy and maximum reuse or recycling of what is produced
  - > Maximize use of existing materials and infrastructure
- Economic
  - > Cost efficiency over time

Both rehabilitation of existing housing and new construction can reach even aggressive sustainability goals. For example, effective use of skylights can deliver more natural light to the interior of new construction, making these units more energy-efficient than historic prototypes without altering massing or façade composition. The use of skylights are particularly effective for row houses, which frequently share interior walls with adjacent units.

Rehabilitating an existing home takes advantage of materials already built into the structure (which are often of better quality than their modern replacements would be) and cuts down on of construction debris sent to landfills.

Skylights can deliver natural sunlight into the interior of a rowhouse, reducing the cost of interior lighting and improving summertime ventilation.

ARCHITECTURAL STYLES

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ARCHITECTURAL STYLES

Introduction

This section summarizes the major architectural styles found in houses in the Anacostia Historic District, but these styles appear throughout the CHASE neighborhoods. The table on this page notes basic construction patterns (attached, semi-detached, or detached) for each style and identifies the range of dates in which the styles flourished in the neighborhoods.

Uniontown and Griswold's Addition, the first areas settled in present-day Anacostia, were subdivided in 1854 and 1879, respectively. Establishment of transportation corridors to nearby neighborhoods and across the Anacostia River fueled the area's growth: a rebuilt and improved Navy Yard Bridge in 1874, a horse-drawn rail line in 1875, and an electrified streetcar line in 1898 all spurred development. As a result, most residential construction in what are now the CHASE neighborhoods took place in the last two decades of the nineteenth century and the first two of the twentieth.

Consistent with the area's modest and semi-urban character, the Cottage and Italianate styles enjoyed great popularity. Apart from decorative details, strong formal qualities defined these houses, often repeating across multiple units to create architecturally cohesive blocks. Later styles, like the Queen Anne and Washington Row, tended to appear only in larger and more elaborate houses. Parcels' sizes and immediate topographical features often dictated decisions about the size and organization of houses.

STYLE	ATTACHED/ ROW	SEMI-DETACHED	DETACHED	APPROXIMATE DATE RANGE
Cottage	x	x	x	1880s-1910s
Italianate Frame	x	x	x	1890s-1900s
Italianate Masonry	x	x	x	1890s-1910s
Villa Subtype			x	1850s-1870s
Washington Row	x	x		1910s-1920s
Queen Anne		x	x	1890s-1900s
American Foursquare			x	1910s-1920s
Craftsman			x	1910s-1920s

ARCHITECTURAL STYLES

COTTAGE

Characteristics

Cottage-style houses rank as the most common housing type in Anacostia. Borrowing from Gothic Revival, Stick, Eastlake, and Folk Victorian influences, Cottage-style frame houses defined the modest, vernacular character of the neighborhood.

SIZE AND ORGANIZATION

Two stories tall and two or three bays wide, depending on lot and house size.

ROOF FORM AND DETAIL

Cottage-style houses came in one of three plans:

1. Rectangular plan with front-facing gable
2. Rectangular plan with side-facing gable or mansard, usually with a small, centered gable on the main elevation
3. L-shaped plan with cross gables

Houses also usually featured one- or two-story rear extensions.

CLADDING

Cottage-style houses usually had clapboard siding. Shingles or board-and-batten siding were sometimes applied for a varied effect.

PORCH AND DETAILS

One-story porches spanning the entire width of the house were most common. On L-shaped examples, porches wrapped around to meet the recessed bay. Often the sole source of decoration on a building, porches sported a wide variety of detailing, including brackets, spindlework, turned or free classic columns, and railings with square-section, turned, or jigsaw-cut balusters.

DOORS

Located on end bays, doors usually featured upper transoms. Built of wood, doors featured four to six panels and occasionally incorporated glazing in their upper panels.

WINDOWS

Evenly spaced and set in rectangular openings, windows generally featured 1/1 or 2/2 glazing patterns. They rarely included ornate hoods or surrounds.

COTTAGE

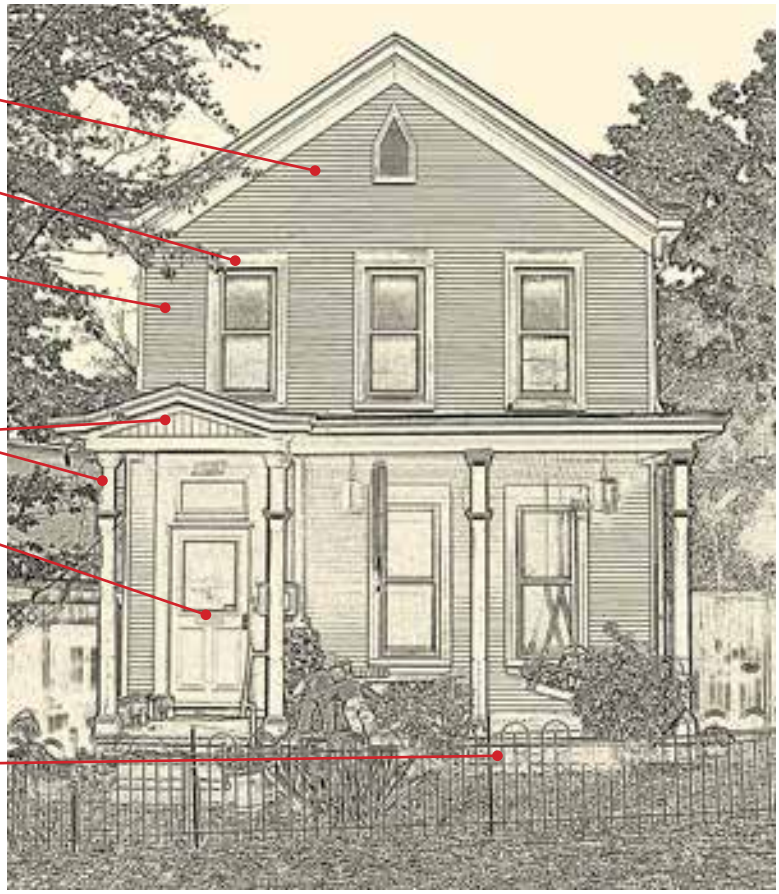
Layout with front-facing gable

Layout with L-shaped plan

Layout with side-facing gable, mansard roof, and front-facing center gables

Less-common masonry examples

What Makes It Cottage Style?



ARCHITECTURAL STYLES

WOOD/MASONRY ITALIANATE

Characteristics

The Italianate style enjoyed immense popularity in the second half of the nineteenth century. Highly adaptable in form and material, the style produced houses ranging from modest farmhouses to imposing villas to urban rowhouses.

The majority of Italianate-style houses in the Anacostia Historic District are modest, flat-fronted, frame examples, either in row, semi-detached, or detached configurations. The district also features several detached or semi-detached masonry examples.

The oldest Italianate-style houses in Anacostia also tend to be the largest and most ornate. Classified as villas, these houses were free-standing with hipped roofs (sometimes incorporating central gables or cupolas), symmetrical principal elevations, and more elaborate details.

Wood-Framed Italianate

SIZE AND ORGANIZATION

Two stories tall and two or three bays wide, depending on lot and house size.

ROOF FORM AND DETAIL

Projecting cornices conceal sloped roofs from the principle elevation so that Italianate-style houses appear nearly flat. Cornices—made of wood or sheets of metal—feature decorative brackets, modillions, and dentils. These roofs and cornices often stand out as the most highly articulated feature of a building's principal elevation.

CLADDING

Wood-frame Italianate houses usually had clapboard siding. Siding sometimes featured decorative profiles, but the main elevation rarely incorporated more than one material. Stucco, sometimes applied after construction, was not a typical feature.

PORCH FORM AND DETAIL

One-story porches most commonly spanned the entire width of the house. Porches rested on masonry piers but were built entirely of wood. Porch detailing included brackets, spindlework, turned or free classic columns, and railings with square-section, turned, or jigsaw-cut balusters.

WOOD-FRAME ITALIANATE

◀◀ *Window configurations range from simple to elaborate (two left images).* ◀ *Characteristic door configurations (two right images).*

DOORS

Located on end bays generally with transoms. Built of wood, doors featured four to six panels; upper panels occasionally incorporated glazing.

WINDOWS

Evenly spaced and set in rectangular openings, windows sometimes featured decorative hoods, surrounds, and louvered wood shutters. Sashes generally featured 1/1 or 2/2 glazing patterns.

Cornices concealed roofs and featured brackets and dentils.

Moderately elaborate cornice details

What Makes It Wood-Framed Italianate?

Detailing on three porches: Turned posts and carved brackets (top); jigsaw-cut balusters (middle); elaborate spoked brackets and spindlework frieze (bottom).

ARCHITECTURAL STYLES

MASONRY **ITALIANATE**

Semi-detached houses with projecting bays

Attached, flat-fronted houses

Masonry Italianate

SIZE AND ORGANIZATION
Two stories tall and usually three bays wide, some houses featured asymmetrically placed, rectangular projecting bays.

ROOF FORM AND DETAIL
Houses featured sloping roofs concealed behind masonry parapets. Houses without projections featured cornices similar to frame types. Houses with projections had parapets with decoratively corbelled brick.

CLADDING
Red brick (sometimes painted) laid in running or common bonds.

PORCH AND DETAILS
Porches on these houses included rounded columns, often with less detail. In some cases, houses featured open, cast-iron stairs that spanned only a single bay.

DOORS
Doors on these houses looked similar in to their frame counterparts. Houses with projecting bays had doors located in the recessed bay.

WINDOWS
Arranged singly or in pairs within a single masonry opening, windows often featured segmental arches and decorative hoods formed from beaded or molded brick.

MASONRY ITALIANATE

Typical window configurations. Paired windows may sit in a single opening with brick detailing above or below

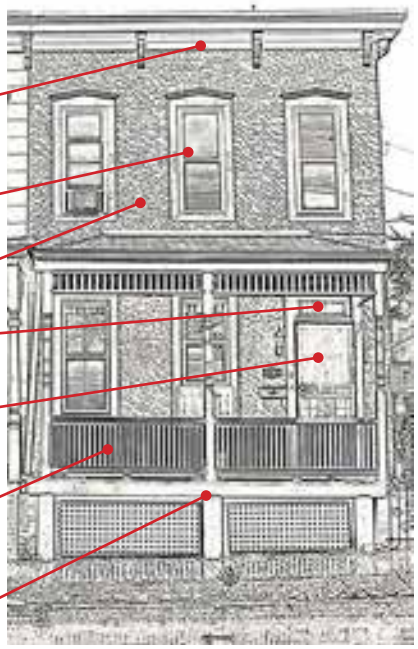
Masonry Italianate houses sometimes featured decorative corbelling at the cornice.

These houses have asymmetrical projecting bays.

Some masonry Italianate houses retain cast-iron entry stairs that are a single bay wide.

What Makes It Masonry Italianate?

ASIDE FROM BRICK ON THE EXTEIOR, THIS STYLE CLOSELY RESEMBLES WOOD-FRAMED ITALIANATE. SOME HOUSES HAVE CORBELS AND SOME HAVE A PROJECTING BAY.



QUEEN ANNE

Characteristics

Popular in the late nineteenth century, the Queen Anne style eschewed flat surfaces and symmetry and embraced irregular forms with a multitude of decorative details.

SIZE AND ORGANIZATION

Two stories tall and multiple bays wide, these houses often featured three-sided bay windows. Gabled roofs sometimes incorporated habitable attic spaces.

ROOF FORM AND DETAIL

Queen Anne-style houses usually featured central hipped roofs with lower cross gables. Nearly always asymmetrical, these roofs also sometimes incorporated towers or dormers.

CLADDING

Queen Anne houses in Anacostia featured a mix of wood cladding, usually clapboard and shingles.

PORCH AND DETAILS

Houses most often featured partial or wraparound porches built of wood members, including turned or free classic columns and spindlework.

DOORS

Doors generally had incised panels and a single, large pane of glass in the upper portion. Sidelights and transoms were common.

WINDOWS

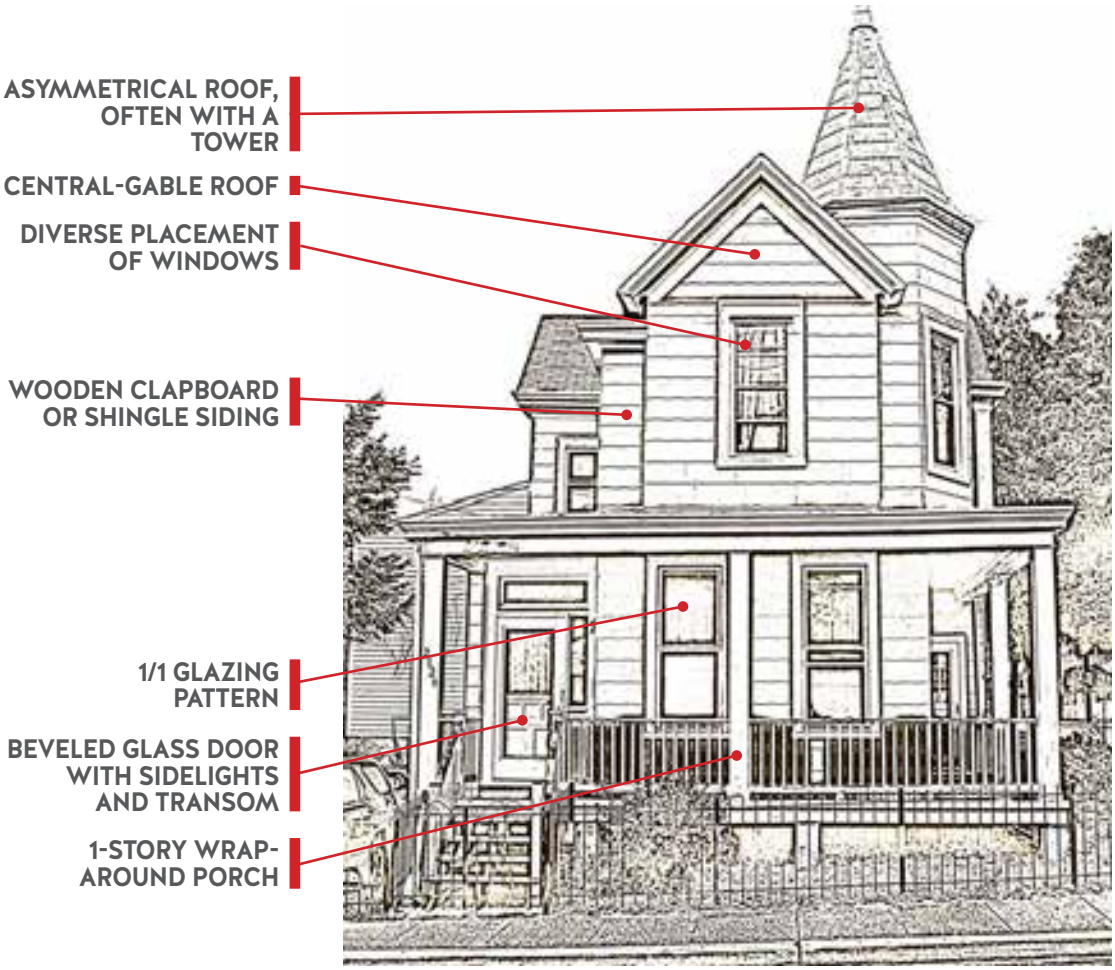
Windows tended to combine simple decoration with diverse sizing and placement. Common elements included beveled glass, stained glass, and arched and Palladian windows.

QUEEN ANNE

A rare, semi-detached masonry example

Houses usually featured three-sided bays and partial or wraparound porches.

What Makes It Queen Anne?



ARCHITECTURAL STYLES

WASHINGTON ROW

Characteristics

A distinctively Washingtonian style, these houses began appearing in many neighborhoods during the early twentieth century. A developer would commonly build several units at once.

SIZE AND ORGANIZATION

Two stories tall and three bays wide. Dormers, a common feature, were decorative and did not lead to habitable floors.

ROOF FORM AND DETAIL

Houses featured sloping roofs, often concealed behind false mansards. Mansard roofs featured slate shingles, twin gables, and projecting cornices, sometimes with decorative brackets or dentils.

CLADDING

Red or brown brick laid in Flemish or common bond.

PORCH AND DETAILS

One-story porches commonly ran the full width of the house. Unlike those on Italianate houses, these porches sat on masonry foundations and often featured concrete slab flooring. Porches had masonry piers or free classic columns and otherwise spare detail.

DOORS

Located on end bays and built of wood, doors usually featured glazed transoms and sidelights.

WINDOWS

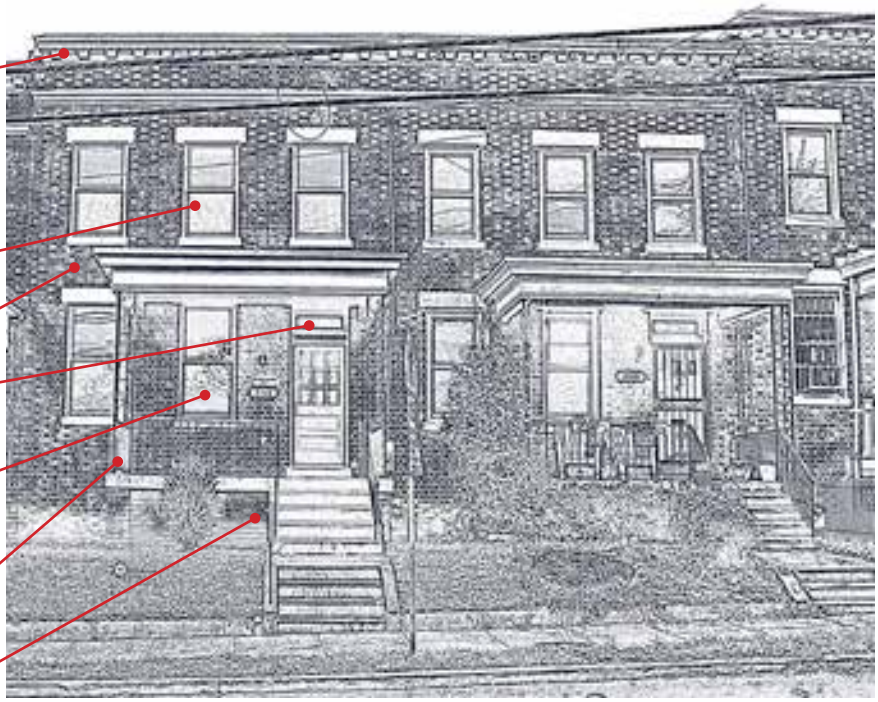
Set in rectangular openings, windows had flush lintels and sills. Sashes generally featured 1/1 or 6/1 glazing patterns. Windows only rarely featured shutters.

WASHINGTON ROW

Developers usually built houses of this style in multi-unit rows, creating architecturally continuous blocks.

Projecting cornices with prominent decorative brackets.

What Makes It Washington Row?



AMERICAN FOURSQUARE

Characteristics

The American Foursquare is generally considered a building type that differs in form, not style, borrowing from diverse influences that include the Craftsman and Colonial or Georgian Revival styles. This very recognizable type appeared throughout the CHASE neighborhoods.

SIZE AND ORGANIZATION

As the name suggests, houses generally had a 2x2 configuration of rooms. Exteriors were two stories tall and three or four bays wide.

ROOF FORM AND DETAIL

Roofs were hipped, almost always incorporating dormers on the main elevation.

CLADDING

Cladding was simple, generally brick, clapboard, or stucco, depending on the house's construction type.

PORCH AND DETAILS

Porches spanned the entire width of the house and had shallow, hipped roofs. Square or free classic columns rested on squat masonry piers.

DOORS

Doors were located on end bays, and their appearance varied to match a house's style.

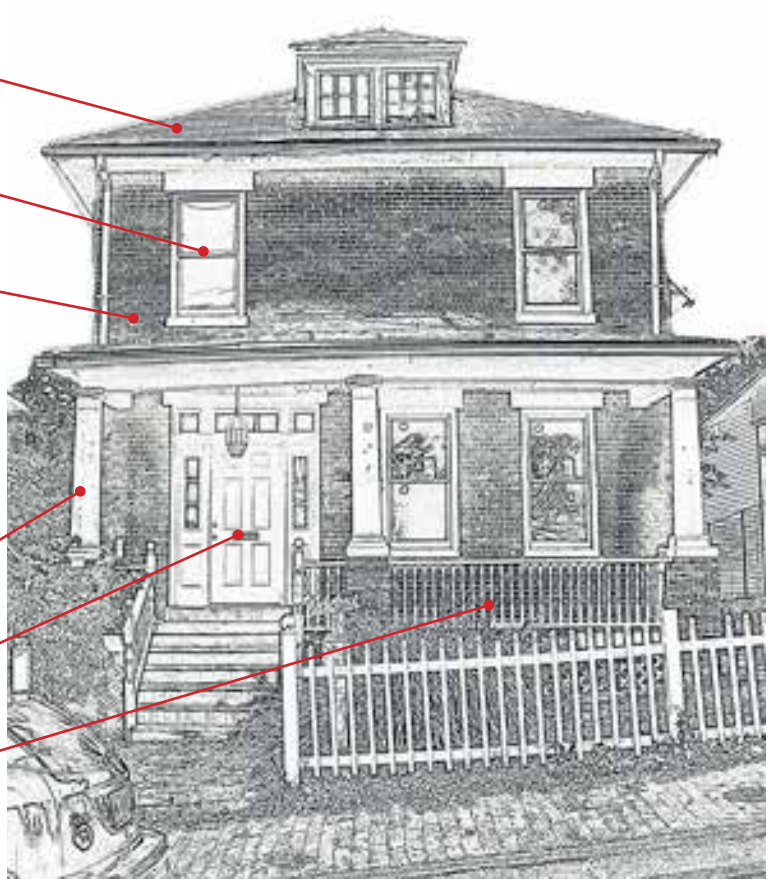
WINDOWS

Windows featured simple surrounds and 1/1 or 6/1 glazing configurations. Windows were either arranged singly or in symmetrical pairs.

AMERICAN FOURSQUARE

Despite stylistic differences, the strong formal qualities of Foursquare houses distinguish them as a recognizable type.

What Makes It American Foursquare?



ARCHITECTURAL STYLES

CRAFTSMAN

Characteristics

Popular in the first decades of the twentieth century, Craftsman-style houses are less common in the CHASE neighborhoods. Although they took a wide variety of forms, the most recognizable was the single-story bungalow.

SIZE AND ORGANIZATION

One or two stories, often with no clearly defined bays. Craftsman-style houses also tended to have greater front-yard setbacks than their earlier counterparts.

ROOF FORM AND DETAIL

Usually simple in form, roofs often featured single or cross gables and exposed rafters.

CLADDING

Wood clapboard and shingles were popular. More than other styles in the neighborhood, Craftsman-style homes mixed masonry and wood cladding.

PORCH AND DETAILS

Wide, deeply sheltered porches were a defining style characteristic. Porch supports, usually masonry, extended directly to the ground. Porch roofs often simply continued the main roof surface.

DOORS

Doors were wood with multi-unit glazed openings in the upper portion.

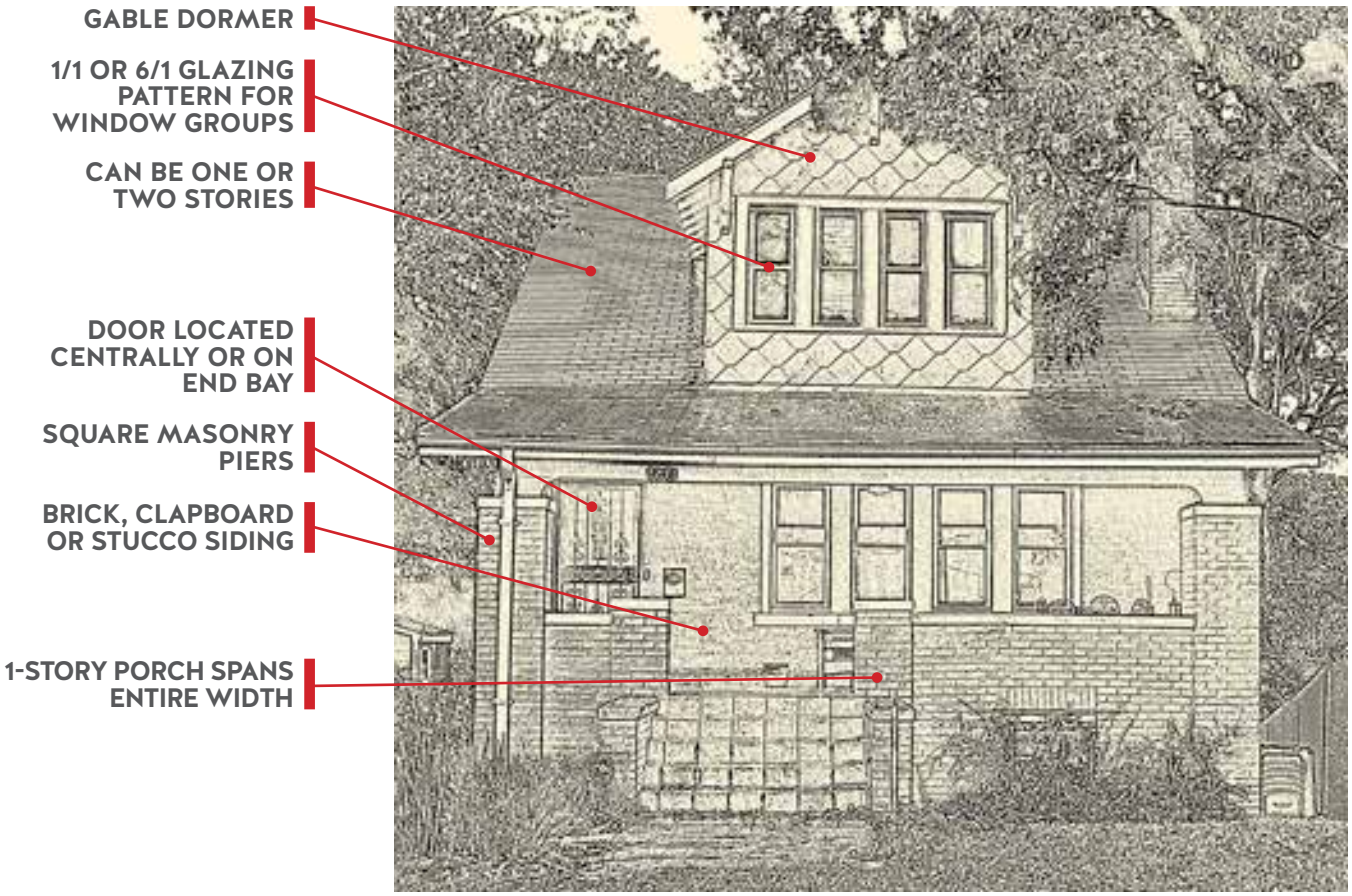
WINDOWS

Individual, 1/1 windows often combined in row of multiple units.

CRAFTSMAN

Relatively few Craftsman-style houses were built in the CHASE neighborhoods.

What Makes It Craftsman Style?



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HISTORIC FLOORPLANS

PLANS FOR HISTORIC HOUSE TYPES IN THE CHASE NEIGHBORHOODS, WITH IDEAS FOR WAYS OWNERS CAN UPDATE HISTORIC LAYOUTS TO MEET THE NEEDS OF TODAY'S HOUSEHOLDS.

HISTORIC FLOORPLANS

INTRODUCTION

The design of houses in the Anacostia Historic District depended on many factors: the availability of funds, the size and orientation of each building lot, the method of construction, the lifestyles of the inhabitants, and the period in which a particular house was built. Given the slim footprint of most building sites (some parcels were only fourteen feet wide) and the modest nature of the houses built on them, there existed little variation in the size and orientation of rooms. Most houses were two rooms wide and two deep, with off-center entrances leading directly to stair halls. Public and gathering rooms (living and dining spaces) were placed near the front of the house; kitchens and pantries were placed near the rear; and bedrooms (between two and four, with a single bathroom) were located on the second story. Only in rare cases did houses have occupied basement or attic stories.

CONFIGURATION AND ILLUMINATION

Many houses were built in rows or semi-detached pairs, limiting the potential for natural light to the front and rear elevations. Even for freestanding buildings, narrow lots and privacy concerns precluded extensive glazing on side elevations. In an era before electricity was common, builders of these houses were forced to give great care to the placement and orientation of rooms. Skylights and glazed transoms often supplemented exterior fenestration and helped light interior corridors. Larger, freestanding houses on more spacious lots were more likely to feature windows on all sides. The distribution of rooms throughout these houses was more organic and more closely tied to the style of the house and orientation of its site rather than to dependence on natural light.

ADDITIONS AND RECONFIGURATIONS

Small building parcels made expansion difficult. However, where additions were made to existing buildings, they overwhelming occurred at the rear. Some houses were originally built with rear ells, named for the L-shaped configuration they gave a building in plan. An ell could be easily added to a house built without one without completely obscuring existing light sources at the rear. Similarly, confined spaces made reconfiguration of rooms uncommon, although most houses have been updated over time to reflect changes in tastes, convenience, and technology.

Note that the floorplans and elevations shown on these pages are prototypical samples, derived from relevant literature and based on the average building and lot size for the most common house styles found in Anacostia. They are not intended as precise or exhaustive representations of houses found in the neighborhood.

SOURCES

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- Jennings, Jan and Herbert Gottfried. *American Vernacular Design, 1870-1940.* Ames: Iowa State University Press, 1988.
- Jennings, Jan and Herbert Gottfried. *American Vernacular Interior Architecture, 1870-1940.* New York: Van Nostrand Reinhold Company, 1988.
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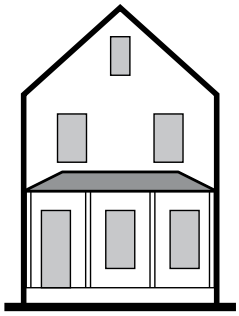
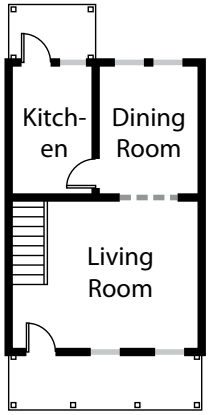
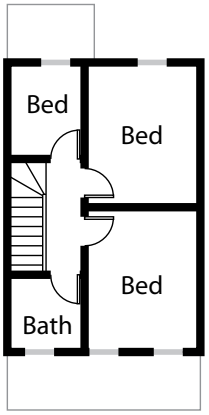
COTTAGE

FLAT FRONT WITHOUT REAR ELL

Freestanding
Open gable roof
16–20′ wide
3 bays
2–3 bedrooms
1 bathroom
full-width porch



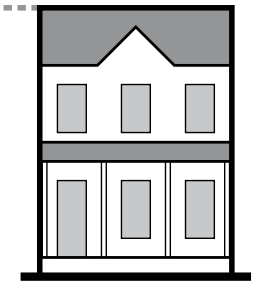


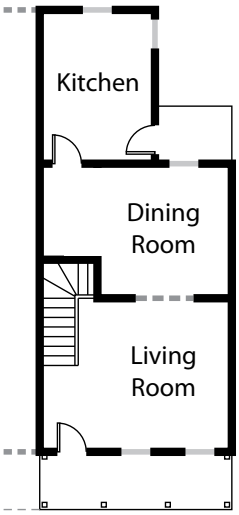


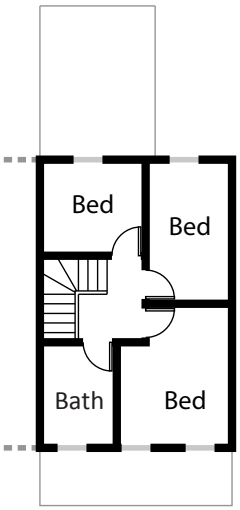
COTTAGE

FLAT FRONT WITH REAR ELL

Freestanding/semi-detached
Mansard roof, usually with center gable
16–20′ wide
3 bays
2–3 bedrooms
1 bathroom
full-width porch

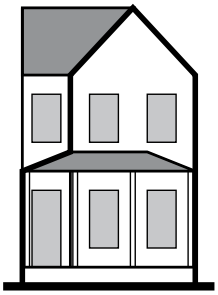


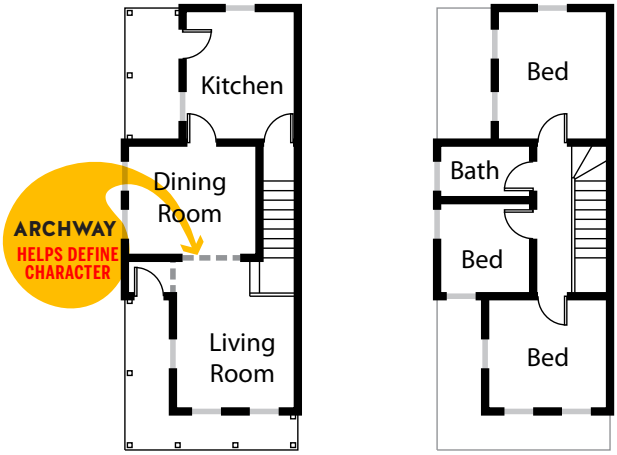




COTTAGE

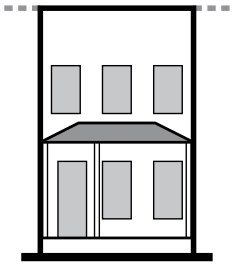
GABELED ELL
Freestanding
Intersecting gabled roof
16–20′ wide
3 bays
3 bedrooms
1 bathroom
full- or partial-width porch

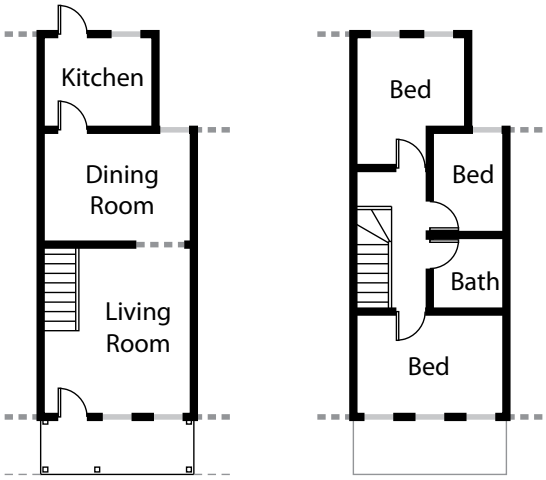




ITALIANATE

WOOD FRAME WITH FLAT FRONT
Row/Semi-detached
Sloping roof behind parapet
14–18′ wide
3 bays
2–3 bedrooms
1 bathroom
Full-width porch

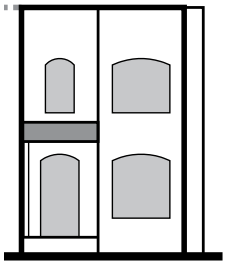


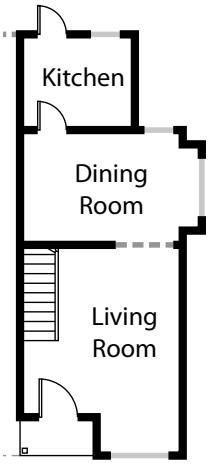


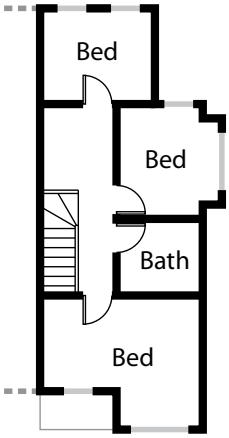
ITALIANATE

ASONRY WITH PROJECTING BAY

- Row/Semi-detached
- Sloping roof behind parapet
- 14–18´ wide
- 2 bays
- 2-3 bedrooms
- 1 bathroom
- Partial-width porch

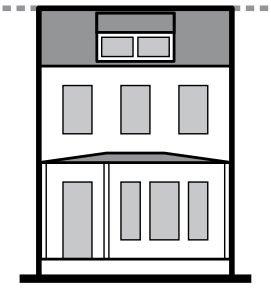


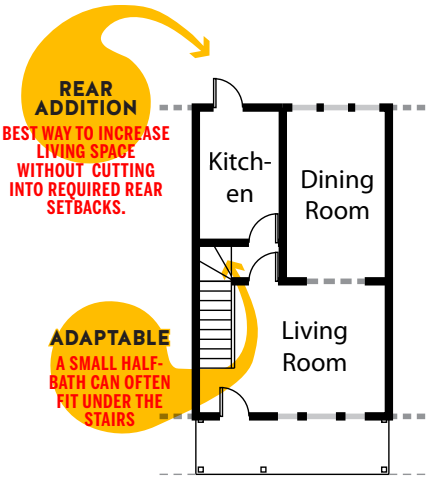


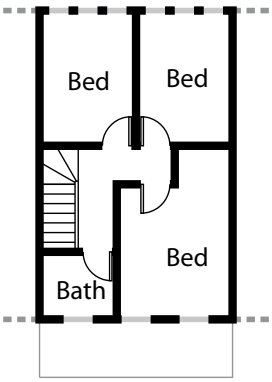


WASHINGTON ROW

- Row
- Mansard roof
- 18–22´ wide
- 3 bays
- 3 bedrooms
- 1 bathroom
- full-width porch

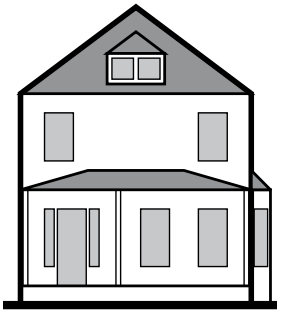


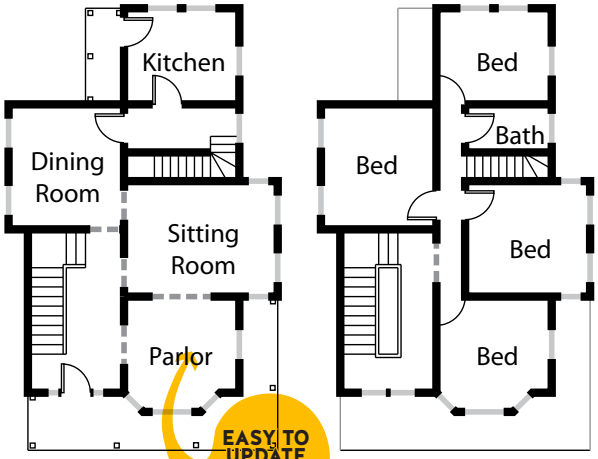




QUEEN ANNE
Freestanding
Mixed roof types
Irregular, asymmetrical form
24–32′ wide
3–4 bedrooms
1–2 bathrooms
Full- or partial-width porch

AMERICAN FOURSQUARE
Freestanding
Hipped roof
20–22′ wide
2–3 bays
3 bedrooms
1–2 bathrooms
full- or partial-width porch



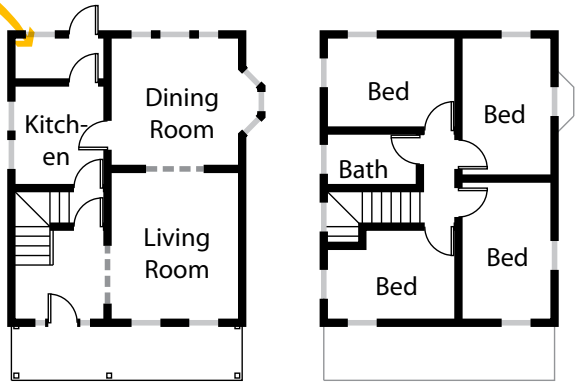


EASY TO UPDATE

QUEEN ANNE-STYLE HOUSES ARE WELL-LAID OUT TO CREATE A FIRST-FLOOR BEDROOM

OPEN DINING/ KITCHEN

AMERICAN FOURSQUARES ADAPT WELL TO A MORE OPEN KITCHEN/DINING ROOM LAYOUT



BUILDING TYPES

AN OVERVIEW OF COMMON TYPES OF HOUSING, DESIGNED TO HELP DEVELOPERS OF NEW HOUSING UNDERSTAND WHAT WORKS BEST IN THE CHASE NEIGHBORHOODS.

BUILDING TYPES ROWHOUSE

Skylights can boost energy efficiency by bringing natural light to the interior of long rowhouse units with no side windows

Characteristics

Attached single-family units are part of a connected row with shared dividing walls between units. This highly flexible unit type is directly adaptable to fill in lots as narrow as 16´ and as wide as 30´across, with depths of at least 80´.

HEIGHT

Rowhouses are typically two stories tall, although some existing buildings are 28´ to 30´ tall due to factors such as topography, a raised first floor, or a large floor-to-ceiling dimension. Floor levels for proposed infill houses should always match adjacent units, although the need to create accessibility from the sidewalk may sometimes require a lower first-floor height to accommodate an entrance ramp.

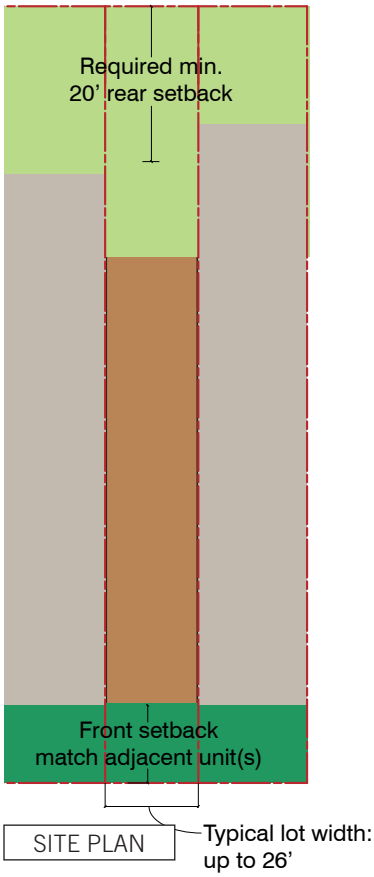
SETBACKS

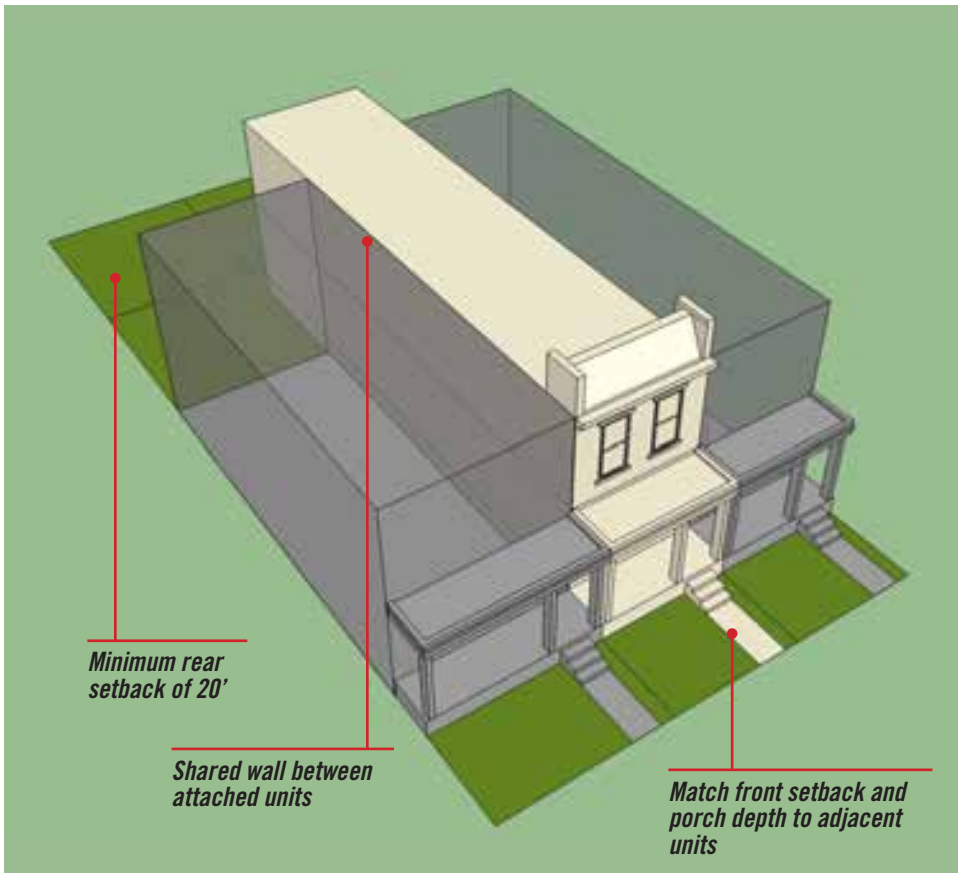
- The front setback on a new unit should fall within the range of existing setbacks on the same side of the street in the block where the building is proposed.
- Existing zoning requires a minimum rear setback of 20´ in existing R-2 and R-3 zones.
- Parcels at the end of a row must also have a side setback, which should fall within the range of the front setbacks of adjacent units.

BUILDING ELEMENTS AND COMPOSITION

Ideally, buildings should maintain compatibility with the overall architecture of the street. The location and composition of doors, windows and porches should reflect the architectural character of the street. On corner units, the front porch should wrap around the structure to address both streets. Acceptable roof forms include flat roofs with parapets, gable roofs, and mansard roofs, depending on the street character. Consider providing roof-accessed terraces for units with flat roofs.[1] Stretches of blank walls without openings should be less than 8´ along street-facing facades.

[1] *Roof terraces may not be visible from the street in historic districts.*





PARKING

Where rear alleys exist, a rowhouse may provide off-street parking behind the building. Where alleys do not exist, parking may be limited to available on-street parking spaces. The front of the building or the front setback should never include parking.

GREEN DESIGN

- Because rowhouses share side walls in most cases, only the front and back rooms get full natural lighting and ventilation, particularly in houses more than 36´ deep. Skylights or light-wells, however, can deliver natural light to the central portion of the house, making new construction more energy-efficient than historic prototypes without altering massing and facade composition.
- The same shared walls that limit interior lighting also greatly improve insulation, making heating and cooling easier and cheaper in a rowhouse than in a semi-detached or fully detached unit.

Units with flat rooftops can include rooftop terraces with access from the unit, if the terraces are properly concealed.

ROWHOUSE

Typical Layout

A typical three-bed, three-bath unit on a 16- to 19-foot-wide lot is one room wide and ranges from 40´ to 60´ deep. The first floor contains the living room, the kitchen and dining space, and one bedroom, with two bedrooms located on the second floor. Three-bed units wider than 14´ can be converted to accessible units without any need for stair lifts.

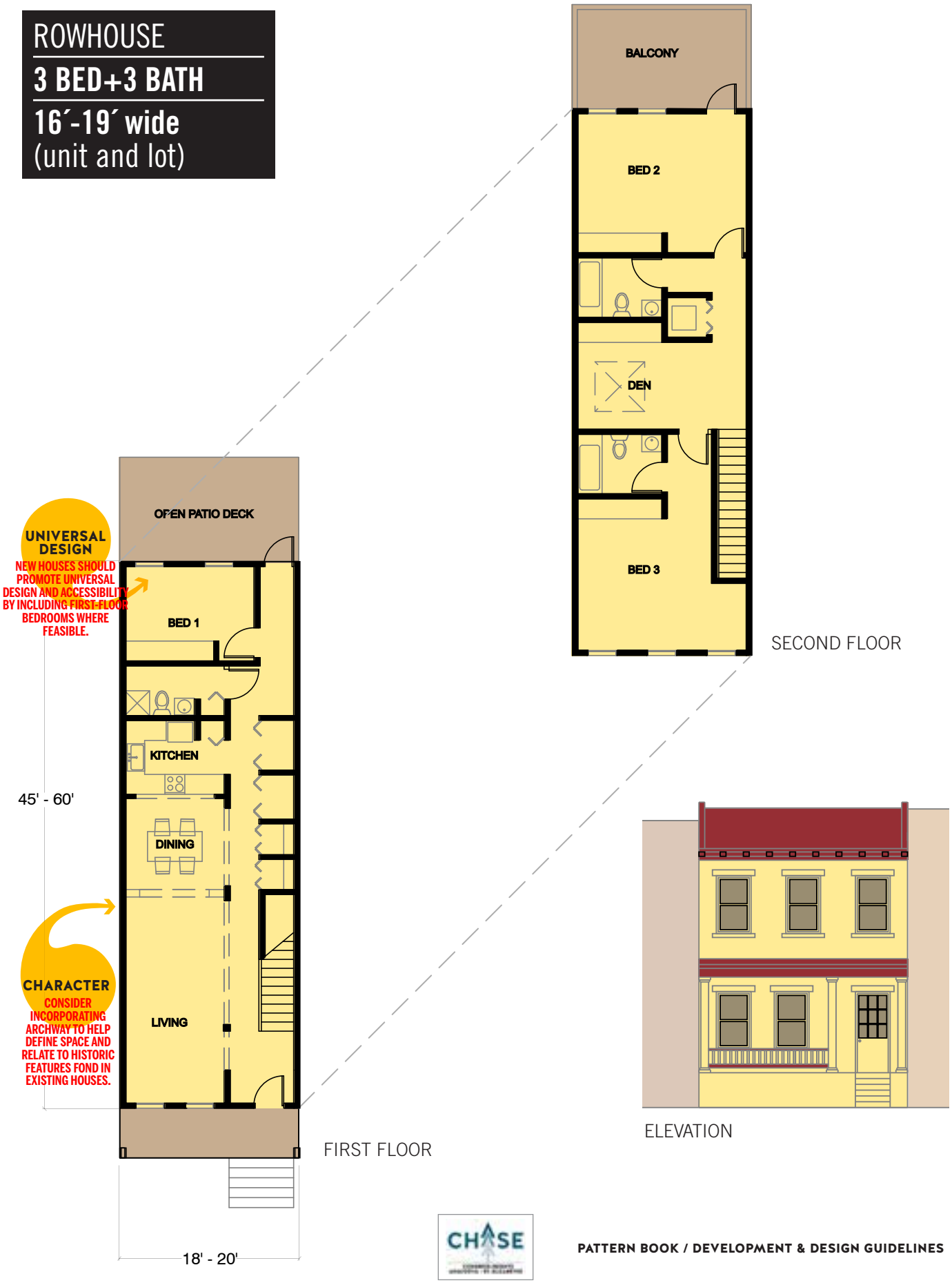
Sample Lot: 16´× 100´

DWELLING UNIT	
Stories	2
Building height	20´–26´
Units	1
Bed/bath	3-bed/3-bath
First floor	1,100 sf
Second floor	900 sf
Total gross area *(includes covered porch and patio)*	2,000 sf
SETBACKS	
Front setback	Match adjacent unit
Side setbacks	—
Rear setback	20´ minimum
LOT COVERAGE	
Lot area	1,600 sf
Ground coverage	1,100 sf
Coverage ratio	68%
NOTES	
> Suitable for modular construction	

ROWHOUSE

3 BED+3 BATH

16´-19´ wide
(unit and lot)



ROWHOUSE

Typical Layout

A typical five-bed, two-and-one-half-bath unit on a 20- to 26-foot-wide lot is a single room wide, and ranges from 45´ to 55´ deep. The first floor contains the living and dining rooms, the kitchen, and one bedroom, with four bedrooms on the second floor. Units wider than 14´ can easily be made accessible without the need for stair lifts.

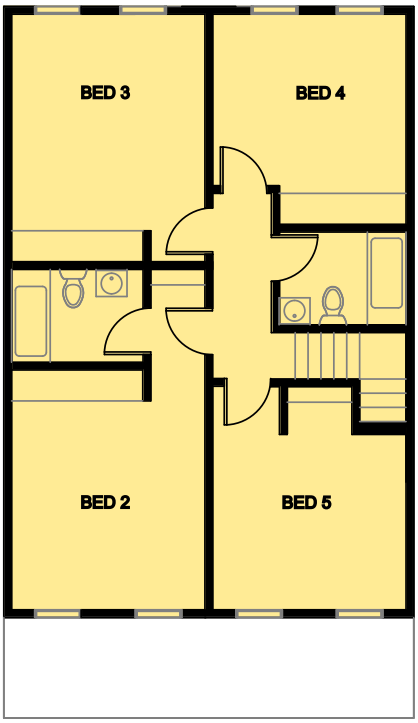
Sample Lot: 26´× 80´

DWELLING UNIT	
Stories	2
Building height	20´–26´
Units	1
Bed/bath	5-bed/3-bath
First floor	1,200 sf
Second floor	1,050 sf
Total gross area *(includes front porch and back patio)*	2,250 sf
SETBACKS	
Front setback	Match adjacent unit
Side setbacks	—
Rear setback	20´ minimum
LOT COVERAGE	
Lot area	2,080 sf
Ground coverage	1,200 sf
Coverage ratio	58%
NOTES	
> Suitable for modular construction	

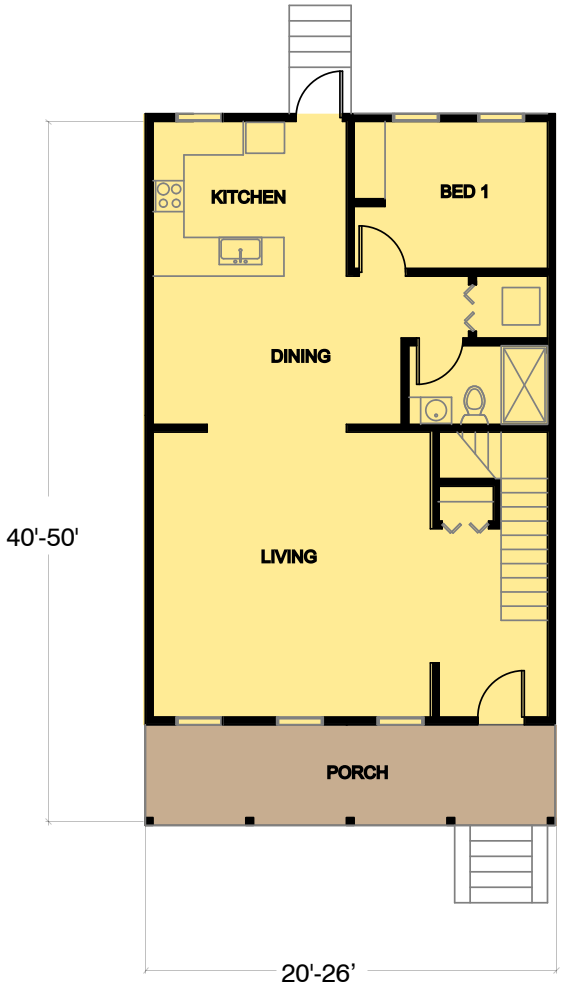
ROWHOUSE

5 BED+3 BATH

20´-26´ wide
(unit and lot)



SECOND FLOOR



FIRST FLOOR

ELEVATION

BUILDING TYPES
SEMI-DETACHED

Characteristics

Semi-detached single-family units are part of a two-unit, connected structure with a shared dividing wall between units. This highly flexible unit type is directly adaptable to infill lots as narrow as 16´ and as wide as 35´, with depths of at least 80´.

HEIGHT

Semi-detached units are typically two stories tall, although some existing units are 28´ or 30´ tall due to factors such as topography, a raised first floor, or a large floor-to-ceiling dimension. Floor levels for proposed infill houses should always match adjacent units, although the need to create accessibility from the sidewalk may sometimes require a lower first-floor height to accommodate an entrance ramp.

SETBACKS

- The front setback on a new unit should fall within the range of existing setbacks on the same side of the street in the block where the building is proposed.
- Existing zoning requires a minimum rear setback of 20´ in existing R-2 and R-3 zones.
- Parcels at the end of a street must also have a side setback, which should fall within the range of the front setbacks of adjacent units.

BUILDING ELEMENTS AND COMPOSITION

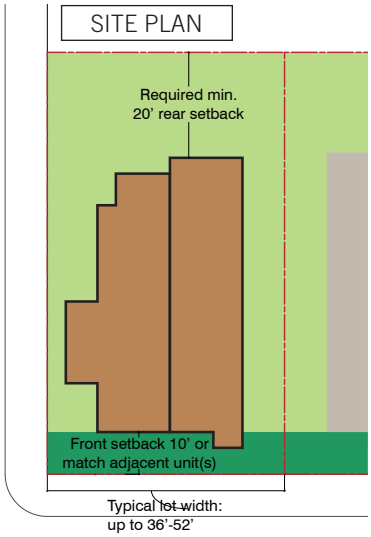
Design buildings to maintain compatibility with the overall architecture of the street. The location and composition of doors, windows and porches should reflect the architectural character of the street. On corner units, the front porch should wrap around the structure to address both streets. Acceptable roof forms include flat roofs with parapets, gable roofs, and mansard roofs, depending on the street character. Consider

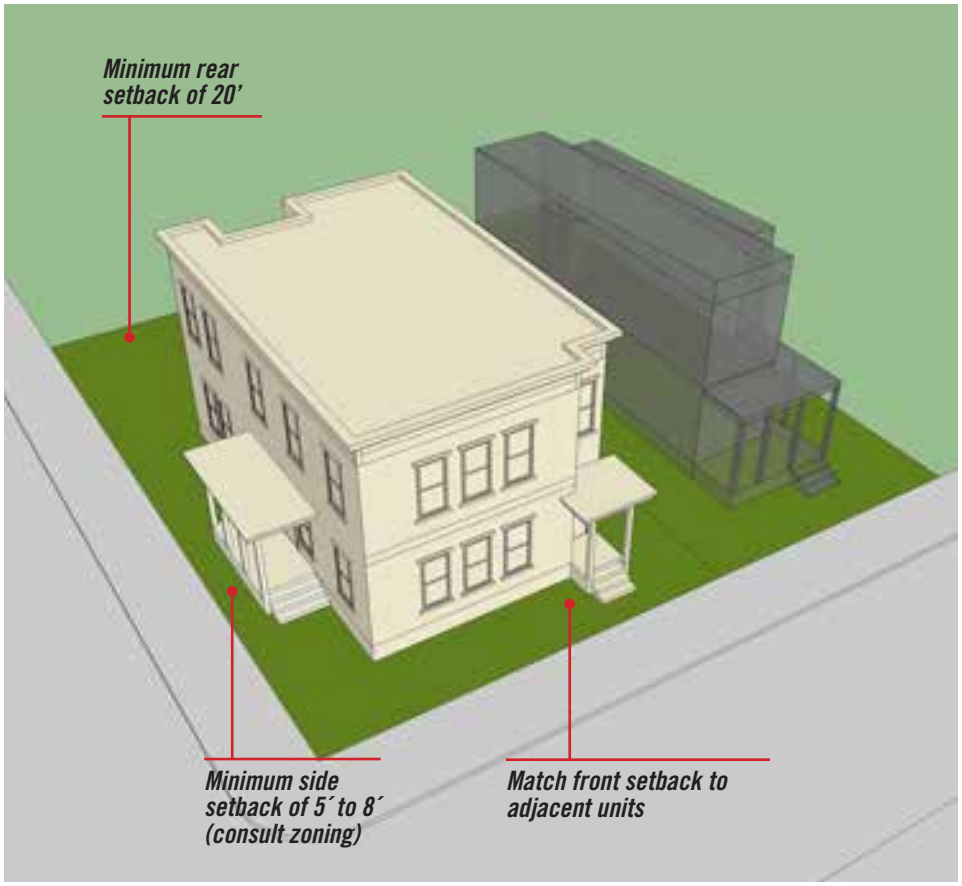
providing rooftop terraces with direct access from the unit for units with flat roofs. Stretches of blank walls without openings should be less than 8´ along street-facing facades.

PARKING

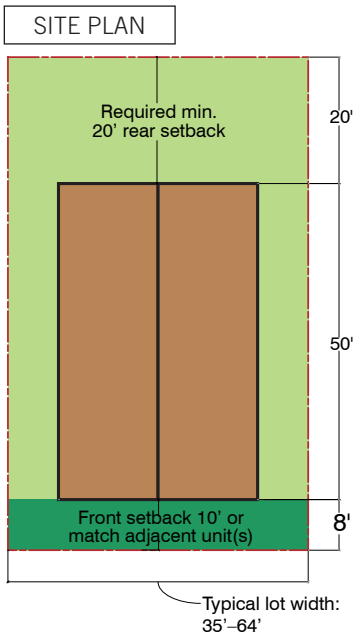
Where rear alleys exist, a unit may provide off-street parking behind the building. Where alleys do not exist, parking may rely on available on-street spaces. The front of the unit or the front setback should never include parking.

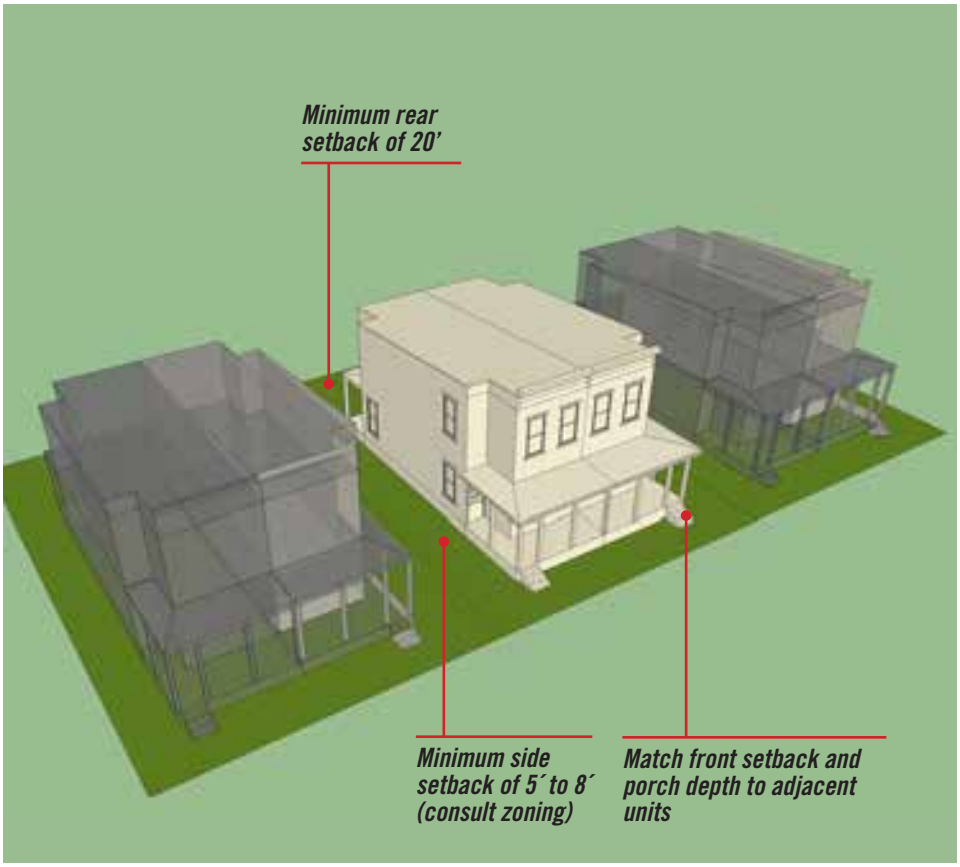
SEMI-DETACHED CORNER BUILDING
(2 UNITS)





SEMI-DETACHED MID-BLOCK BUILDING
(2 UNITS)





SEMI-DETACHED CORNER BUILDING (2 UNITS)

Typical Layout

These two units are designed so a front door faces each street. A typical two-bed/two-bath unit on a 60-foot-wide lot is a single room wide and ranges from 46´ to 60´ deep. The first floor contains the living room and eat-in kitchen, with two bedrooms located above.

A typical four-bed/three[-bath unit is two rooms wide. The first floor contains the living and dining/family rooms, kitchen, and one bedroom, with three bedrooms and a loft space on the second floor.

Sample Lot: 60´× 100´

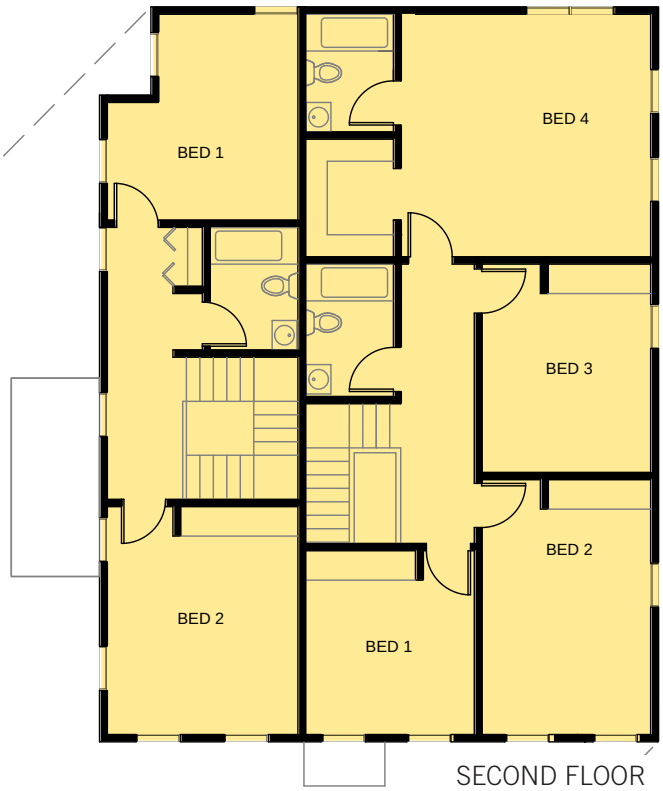
DWELLING UNIT	
Stories	2
Building height	20´–26´
Units	2
Unit 1 (2-bed+2-bath)	
First floor	760 sf
Second floor	670 sf
Total gross area*	1,430 sf
Unit 2 (4-bed+3-bath)	
First floor	1,230 sf
Second floor	1,200 sf
Total gross area*	2,430 sf
** includes front porch and back patios*	
SETBACKS	
Front setback	Match adjacent unit
Side setbacks	8´ minimum
Rear setback	20´ minimum
LOT COVERAGE	
Lot area	6,000 sf
Ground coverage	3,860 sf
Coverage ratio	64%
NOTES	
> Suitable for modular construction > Appropriate for R2 and R3 zones	

SEMI-DETACHED CORNER BUILDING (2 UNITS)

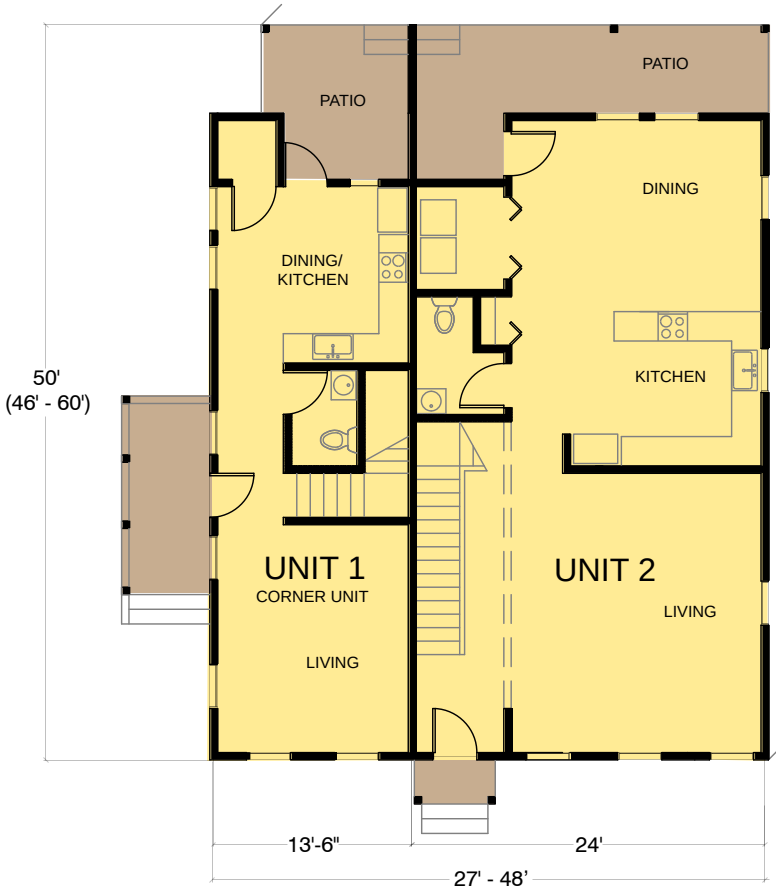
VARIOUS PAIRINGS POSSIBLE OF 2-, 3- AND/OR 4-BEDROOM UNITS (2–3 BATHS EACH)

27´-48´ WIDE*

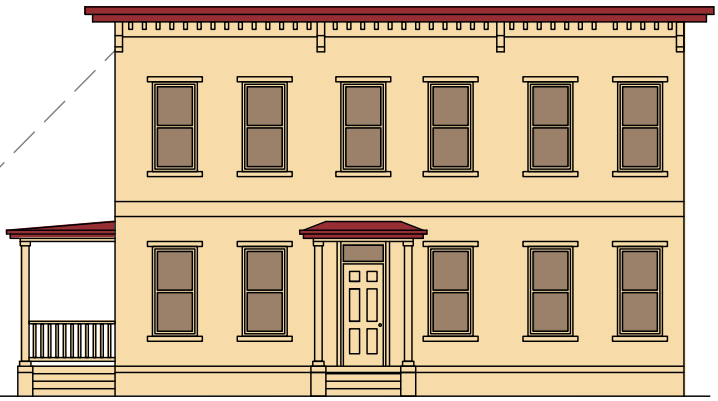
* Since this unit typically is built in pairs, the width shown spans two units. Each unit has a yard, and together they fill the lot.



SECOND FLOOR



FIRST FLOOR



ELEVATION

SEMI-DETACHED MID-BLOCK BUILDING (2 UNITS)

Typical Layout

The front doors of both units face the same street in this mid-block configuration. A typical two-bed/two-bath unit on a 55- to 65-foot-wide lot is one room wide, and ranges from 44´ to 52´ deep. The first floor contains the living and dining rooms and an eat-in kitchen, with two bedrooms located on the floor above.

A typical four-bed/three-bath unit is two rooms wide. The first floor contains the living and dining/family rooms, a kitchen and one bath, with three bedrooms located on the floor above.

Sample Lot: 60´100´

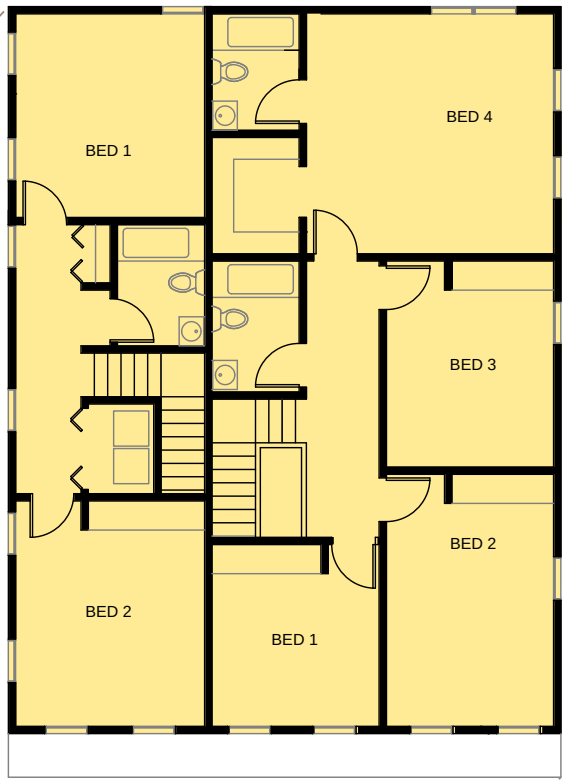
DWELLING UNIT	
Stories	2
Building height	20´–26´
Units	2
Unit 1 (2-bed+2-bath)	
First floor	790 sf
Second floor	640 sf
Total gross area*	1,430 sf
Unit 2 (4-bed+3-bath)	
First floor	1,210 sf
Second floor	1,010 sf
Total gross area*	2,220 sf
** includes front porch and back patios*	
SETBACKS	
Front setback	Match adjacent unit
Side setbacks	8´ minimum
Rear setback	20´ minimum
LOT COVERAGE	
Lot area	6,000 sf
Ground coverage	3,650 sf
Coverage ratio	61%
NOTES	
> Suitable for modular construction > Appropriate for R2 and R3 zones	

SEMI-DETACHED MID-BLOCK BUILDINGS (2 UNITS)

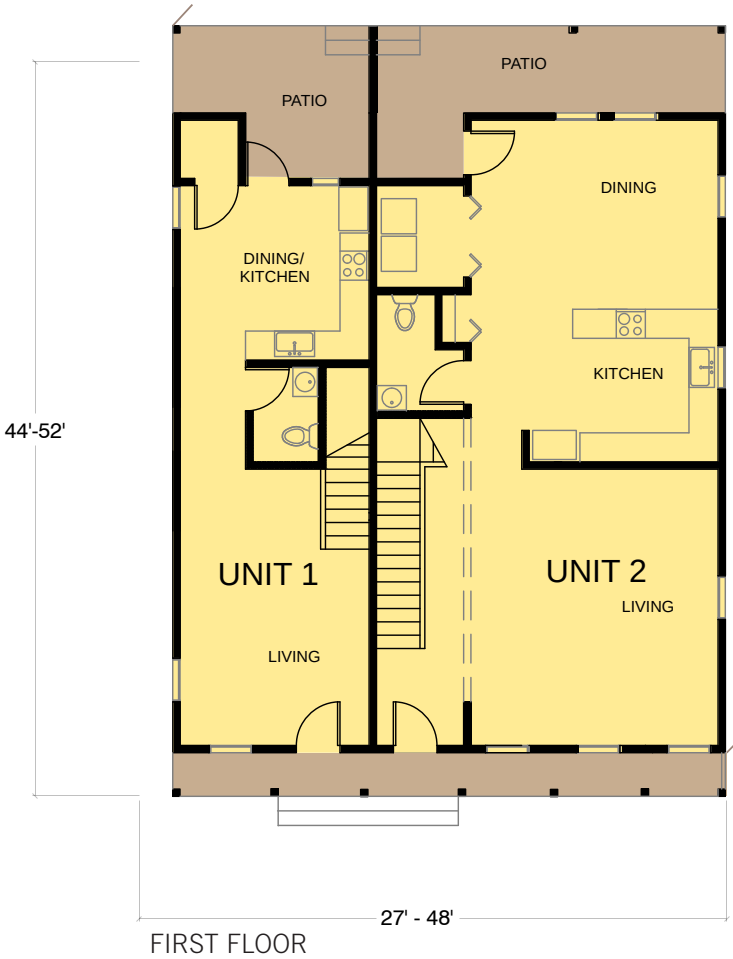
VARIOUS PAIRINGS POSSIBLE OF 2-, 3- AND/OR 4-BEDROOM UNITS (2–3 BATHS EACH)

27´-48´ WIDE*

* Since this unit typically is built in pairs, this width is for two. Each unit has a yard, and together they typically fill the lot.



SECOND FLOOR



FIRST FLOOR

ELEVATION

BUILDING TYPES DETACHED

Characteristics

Free-standing, detached single-family units allow windows on all sides. This highly flexible unit type requires a larger lot; it should measure at least 36´ wide and at least 72´ deep.

HEIGHT

Typically one to two stories tall, some existing detached single-family units include a third story within a mansard roof or using dormer windows within a pitched roof. Floor levels for proposed infill houses should always match adjacent units, although the need to create accessibility from the sidewalk may sometimes require a lower first-floor height to accommodate an entrance ramp.

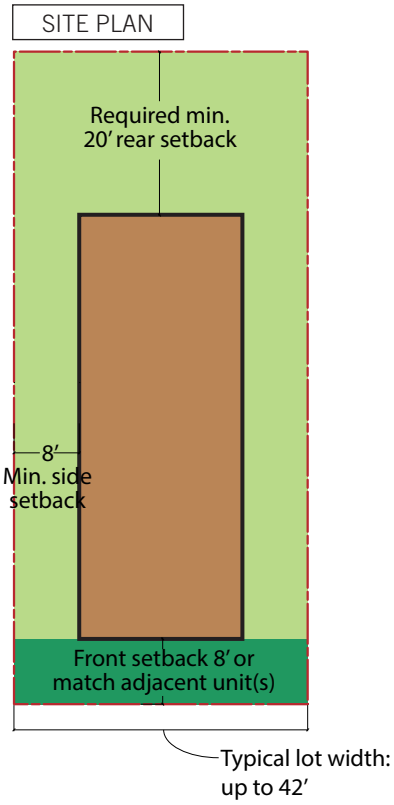
SETBACKS

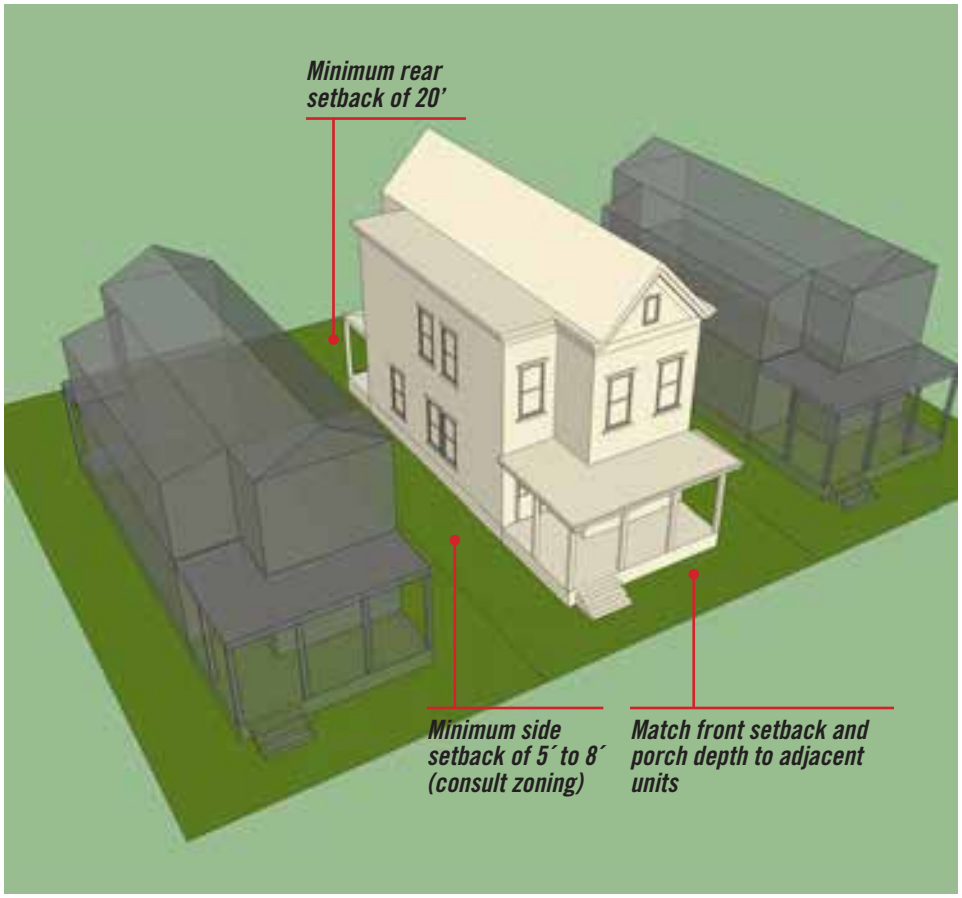
- The front setback on a new unit should fall within the range of existing setbacks on the same side of the street in the block where the building is proposed.
- Existing zoning requires a minimum rear setback of 20´ in existing R-2 and R-3 zones.
- Required minimum side setbacks are either 5´ or 8´, depending on the zoning category that governs the property.

BUILDING ELEMENTS AND COMPOSITION

Design buildings to maintain compatibility with the overall architecture of the street. The location and composition of doors, windows and porches should reflect the architectural character of the street. On corner units, the front porch should wrap around the structure to address both streets. Acceptable roof forms include flat roofs with parapets, gable roofs, and mansard roofs, depending on the street character. Consider providing roof-accessed terraces for units with flat roofs. Stretches of blank walls without openings should be less than 8´ along street-facing facades.

DETACHED MID-BLOCK UNIT





PARKING

Where rear alleys exist, a unit may provide off-street parking behind the building. Where alleys do not exist, parking may be limited to available on-street parking spaces.

DETACHED CORNER UNIT

Typical Layout

A two-bed, one-and-one-half-bath unit on a 16- to 18-foot-wide lot is a single room wide and ranges from 44´ to 52´ deep. The first floor contains the living and dining/family rooms and kitchen, with two bedrooms located on the second floor.

Sample Lot: 16´× 80´

DWELLING UNIT	
Footprint	16´x50´
Stories	2
Building height	20´–24´
Units	1
Bed/bath	2-bed/1.5-bath
First floor	800 sf
Second floor	650 sf
Total gross area *(includes covered porch)*	1,450 sf
SETBACKS	
Front setback	Match adjacent unit
Side setbacks	8´ minimum
Rear setback	20´ minimum
LOT COVERAGE	
Lot area	1,280 sf
Ground coverage	800 sf
Coverage ratio	63%
NOTES	
> Suitable for modular construction > Appropriate for R2 and R3 zones	

DETACHED CORNER UNIT

2 BED+1.5 BATH

14´-18´ WIDE

SECOND FLOOR

FIRST FLOOR

ELEVATION

DETACHED MID-BLOCK UNIT

Typical Layout

A typical three-bed/two-bath house on a 34- to 42-foot-wide lot is a single room wide and ranges from 44´ to 60´ deep. The first floor contains the living/dining room, kitchen, and one bedroom, with two bedrooms located above.

A straight set of stairs connects the two levels.

Sample Lot: 36´× 80´

DWELLING UNIT	
Footprint	20´x52´
Stories	2
Building height	20´–24´
Units	1
Bed/bath	2-bed/1.5-bath
First floor	1,040 sf
Second floor	860 sf
Total gross area *includes front porch and back patio*	1,900 sf
SETBACKS	
Front setback	Match adjacent unit
Side setbacks	5´–8´ minimum
Rear setback	20´ minimum
LOT COVERAGE	
Lot area	2,880 sf
Ground coverage	1,040 sf
Coverage ratio	36%
NOTES	
> Suitable for modular construction > Appropriate for R2 and R3 zones	

DETACHED MID-BLOCK UNIT

3 BED+2 BATH

16´-22´ WIDE

SECOND FLOOR

FIRST FLOOR

ELEVATION

DETACHED MID-BLOCK UNIT

Typical Layout

Based on the "American Foursquare" house style, this prototype is a four-bed, three-bath, family unit on a 35- to 45-foot-wide lot. A typical design has four rooms—two rooms wide by two rooms deep—on each floor. The first floor contains the living room, kitchen/dining room, and one bedroom, with three bedrooms and a study on the second floor.

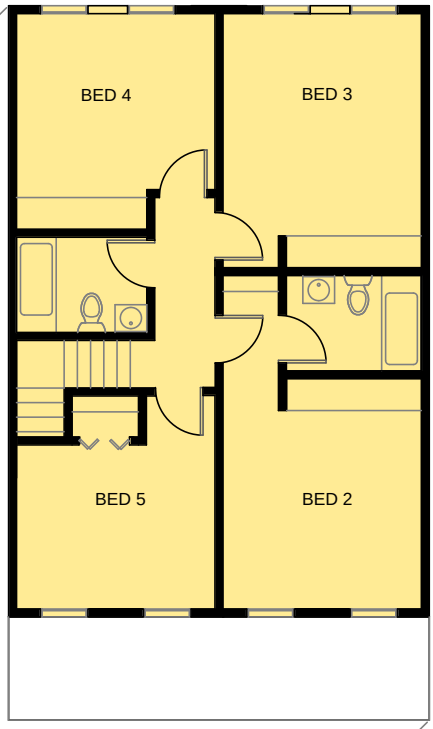
Sample Lot: 42´× 80´

DWELLING UNIT	
Stories	2
Building height	20´–24´
Units	1
Bed/bath	4-bed/3-bath
First floor	1,200 sf
Second floor	1,000 sf
Total gross area	2,200 sf
*** includes front porch, back patio*	
SETBACKS	
Front setback	Match adjacent unit
Side setbacks	8´ minimum
Rear setback	20´ minimum
LOT COVERAGE	
Lot area	3,360 sf
Ground coverage	1,200 sf
Coverage ratio	37%
NOTES	
> Suitable for modular construction > Appropriate for R2 and R3 zones	

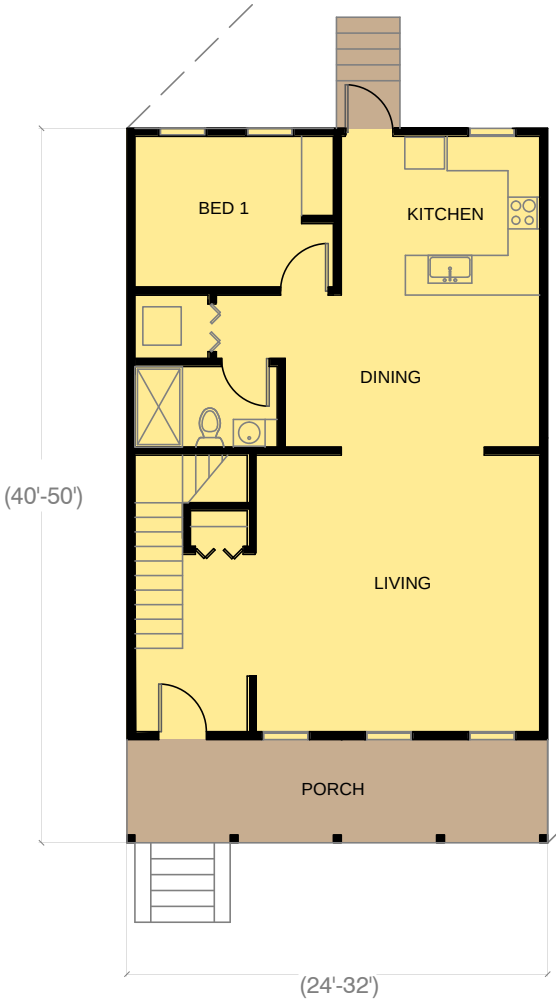
DETACHED MID-BLOCK UNIT

4 BED+3 BATH

24´-32´ WIDE



SECOND FLOOR



FIRST FLOOR

ELEVATION

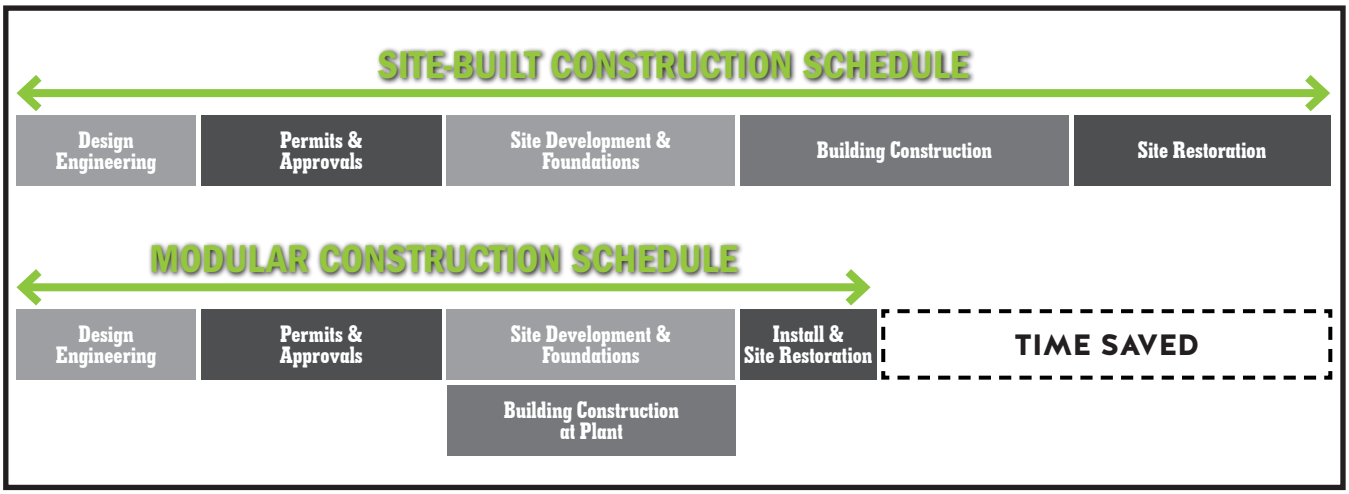
MODULAR CONSTRUCTION

The CHASE study evaluated modular construction for its ability to increase infill housing development in the CHASE neighborhoods. The potential advantages and disadvantages that the evaluation identified vary, based on project goals and conditions. Anyone pursuing infill development in the CHASE area should consider using modular techniques if it appears that the project could benefit from modular housing's advantages.

ADVANTAGES

Modular or "factory" construction offers several potential advantages over conventional techniques:

- **Lower costs** resulting from shorter construction time, controlled building conditions, and other factors described below.
- **Time savings.** Weather does not affect factory construction, and site preparation work can take place while modules are being built, shortening total construction time by up to 50% in urban areas. The time savings means houses reach the market faster and would produce visible evidence of change in the CHASE neighborhoods more quickly.
- **Efficiency of scale.** Building multiple houses at once in a factory yields lower per-unit costs than building each house individually on site.
- **Improved sustainability.** Factory construction not only reduces material waste in construction, it produces more tightly sealed buildings. With less air infiltration than site-built houses, modular homes deliver lower energy costs for the people who live in them.
- **Higher-quality structures.** Modular construction must meet or exceed the same local building codes as site-built housing. Construction in a controlled factory environment eliminates weather damage that site-built houses can sustain and improves construction quality. Because each module has its own floor, ceiling, and walls—essentially doubling sound insulation when modules and entire units are connected to each other—modular construction reduces sound transmission in rowhouses and from room to room within a unit.
- **Neighborhood-friendly qualities.** Like traditional site-built housing, modular housing



SOURCE: WWW.MODULAR.ORG

designs can reflect local character. The technique greatly reduces construction-site impacts—including noise, dust, and debris—and module assembly can occur in one day. As noted earlier, a shorter construction schedule produces block-transforming results sooner than traditional methods.

- **Better job-site security.** Factory-built modules can be assembled on-site in a day and secured with plywood over the windows. This greatly reduces the risk and cost of construction-site theft and vandalism.

DISADVANTAGES

Modular construction may also present some disadvantages:

- **Fewer local jobs.** Modular construction produces fewer local jobs than on-site construction, since much of the work occurs in a factory. Assembly and finishing do require local workers, but the create fewer total jobs. Given the CHASE Action Agenda emphasis on local job creation, this may stand as a significant drawback. Nevertheless, if modular construction adds housing that otherwise would not exist, it may still represent a strong net advantage for the CHASE neighborhoods in the form of increased housing choice, greater affordability, neighborhood stabilization, new support for local retailers, and other aspects.
- **Learning curve for designers and builders.** Assuring a smooth work flow requires better communication and coordination between the builder, design architect, and trades handling on-site connections (such as mechanical, electrical, and plumbing). This is especially important for those unfamiliar with modular techniques.
- **Financing.** Lenders may know little about modular housing or have misconceptions about its quality. Work with lenders to ensure fair evaluations and sales comps that include traditional site-built houses.
- **Difficulty of delivering completed modules.** The route to each site must be carefully evaluated for feasibility of transporting building modules for installation. Transporting modules will require the developer to obtain permits and apply for traffic restrictions.

CREATING LOCAL JOBS WITH MODULAR CONSTRUCTION

Other communities have successfully addressed the local-jobs issue. As one example, the Southwest Michigan Builders Association reached a deal with a modular builder to send local residents to train in the builder's factory and learn to install modules on site (SMBA provided transportation tand from the factory). The residents who successfully completed the program were hired by local contractors to complete the work and continued as full-time workers with the contractors.

Technical Considerations for Modular Construction

CRITICAL DIMENSIONS OF MODULES

- **Width:** A floor width of 15´2˝ is the most common to maximize area per module (leading to a maximum 16´ overall module width, which includes roof overhang). Widths as small as 8´ are possible but less efficient.
- **Height:** An 11´6˝ height is typical to keep total height of modules being transported by trailer, under 13´6˝. Heights of up to 13´ are possible.
- **Length:** Up to 70´, usually in 2' increments. Consult local regulations for maximum trailer lengths, which is 55´ in the District).
- **Ceiling-to-floor thickness:** Approximately 20˝ between the bottom of the ceiling of the lower module and surface of the floor in the module above it. Each module has a floor and a ceiling, producing a double thickness where they meet.

DESIGN

- Type V wood-frame construction is most common.
- Within the constraints of the site and the zoning requirements for setbacks, design for the maximum amount of interior floor area in each module to reduce the number of modules needed, which in turn cuts transportation and installation costs.
- Site-built pieces such as porches, stoops, and bay windows can be added to factory-built modules for more design flexibility.
- Room widths greater than the module width can be created using open spans of up to 11´ without additional support, or 16´ with additional support.
- A finished interior ceiling height of 9´ is typical. A 9´6˝ tray ceiling is also common and is the maximum height possible in a module with a total height of 11´6˝.
- A roof pitch of up to 12/12 can be accommodated with a hinged roof system that allows for transport. Trusses can also be site-built and hoisted into place, often for less than transporting bulky roofs from the factory. Flat roofs are often more expensive and require special attention to waterproofing issues.
- Siding and flooring can be factory-installed but are typically installed on-site to avoid damage during transport and on-site assembly.
- Design the module with exterior cladding dimensions in mind (for example, brick and siding dimensions) to simplify finishing.
- Contain equipment such as plubminga nd mechanical in one module to simplify on-site connections between modules.

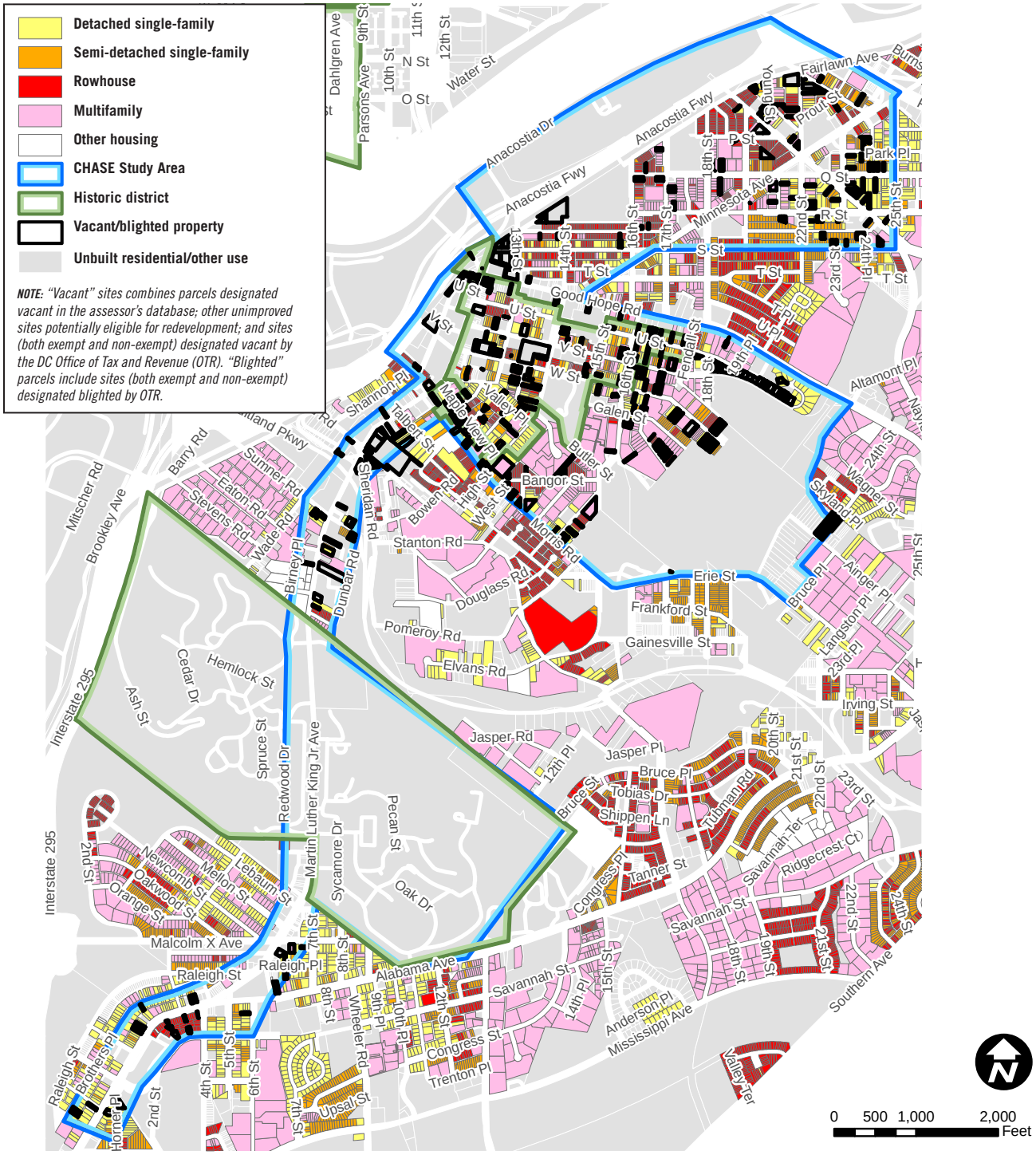
TRANSPORTATION

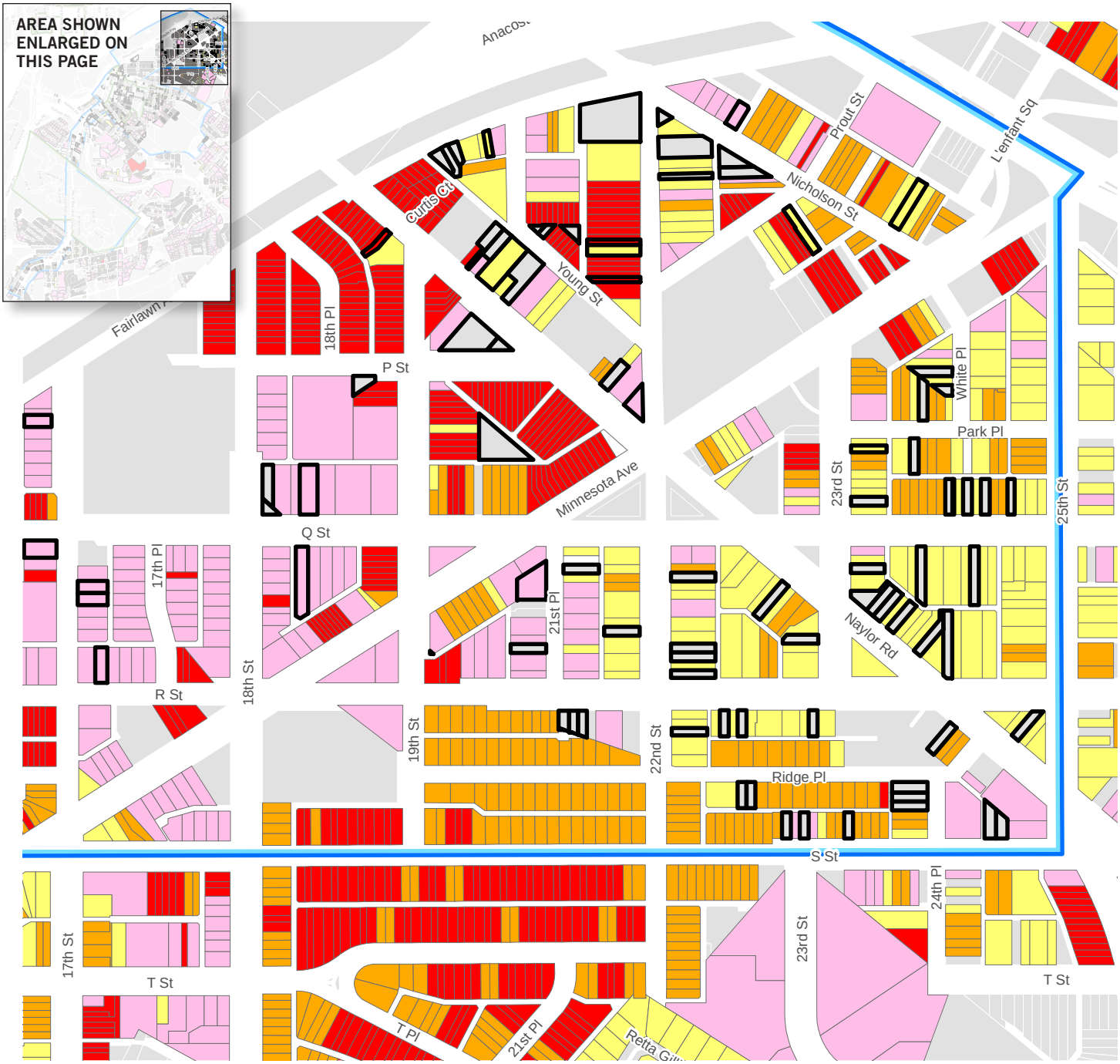
- Evaluate the entire route from factory to site to minimize overhead obstructions such as power lines, overpasses, and traffic lights and to determine if streets are wide enough for a truck's turning radius, especially in an urban setting like the CHASE neighborhoods. Module widths may need to be adjusted to account for these limitations.
- Include the costs of permits and the potential added expense of off-hour transport for oversized modules. The District requires a police escort for loads greater than 12´ wide or 13´6˝ tall (height measured on the trailer), and it limits maximum trailer length to 55´.

APPENDIX

HOUSING INVENTORY OF THE CHASE NEIGHBORHOODS

APPENDIX HOUSING INVENTORY



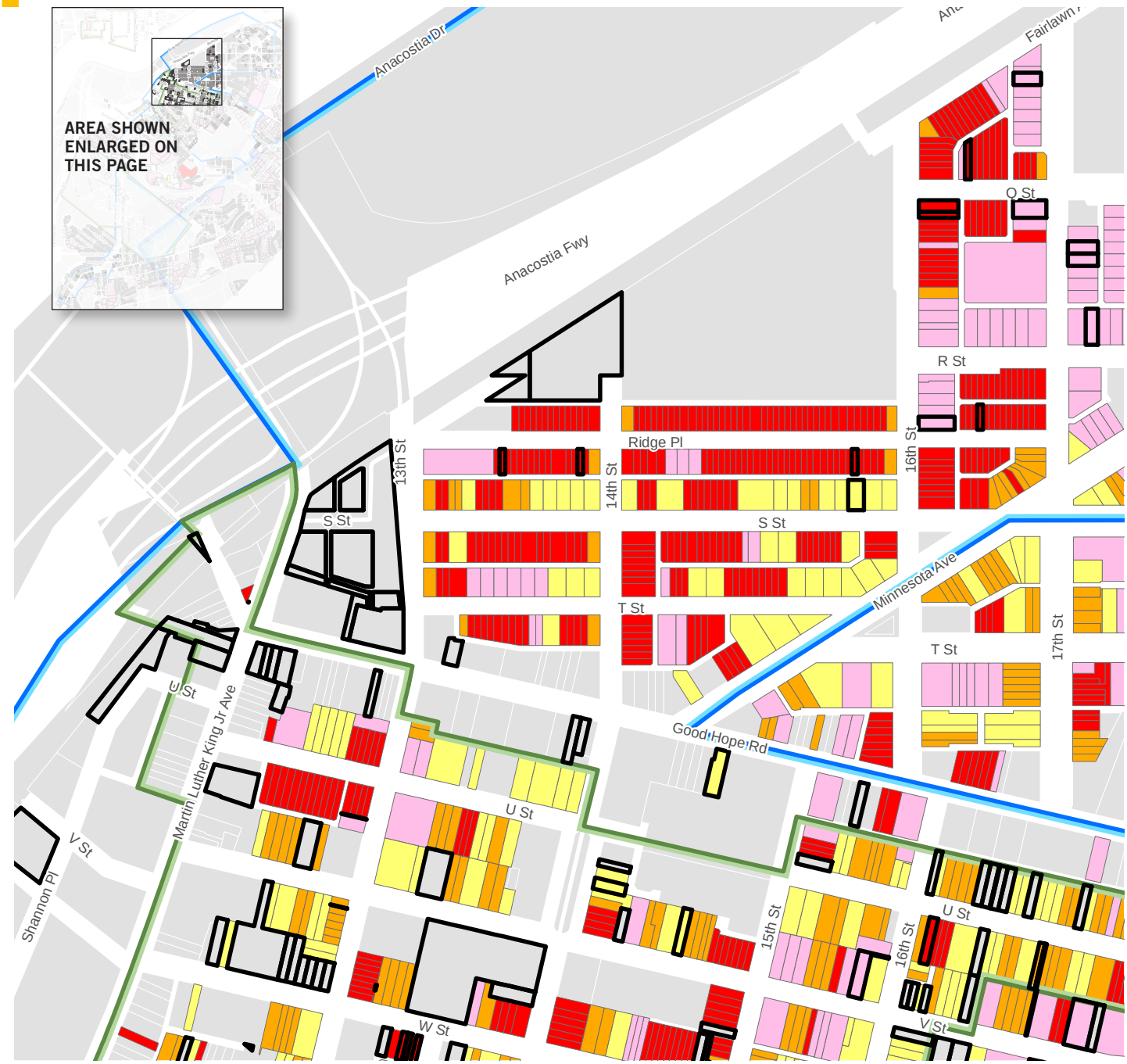


- Detached single-family
- Semi-detached single-family
- Rowhouse
- Multifamily
- Other housing
- CHASE Study Area
- Historic district
- Vacant/blighted property
- Unbuilt residential/other use

0 100 200 400 Feet

NOTE: *The "vacant" category includes parcels designated vacant in the assessor's database; other unimproved sites potentially eligible for redevelopment; and sites (both exempt and non-exempt) designated vacant by the DC Office of Tax and Revenue (OTR). "Blighted" parcels are sites (both exempt and non-exempt) designated blighted by OTR.*

APPENDIX **HOUSING INVENTORY**



Detached single-family	CHASE Study Area
Semi-detached single-family	Historic district
Rowhouse	Vacant/blighted property
Multifamily	Unbuilt residential/other use
Other housing	

0 100 200 400 Feet

NOTE: *The "vacant" category includes parcels designated vacant in the assessor's database; other unimproved sites potentially eligible for redevelopment; and sites (both exempt and non-exempt) designated vacant by the DC Office of Tax and Revenue (OTR). "Blighted" parcels are sites (both exempt and non-exempt) designated blighted by OTR.*