Objective Design Standards Handbook

FOR RESIDENTIAL AND MIXED-USE PROJECTS

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Association of Bay Area Governments

Technical Assistance
for Local Planning
HOUSING

PREPARED FOR

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USER GUIDE

How to Use the Handbook

ORGANIZATION OF CHAPTERS

The Handbook provides four chapters of advice and guidance for key topics, as well as example standards. The topics addressed in each chapter are further detailed on the following page.

Each chapter includes the following sections:

- **Introduction:** An overview on the importance of the chapter topic and a series of design principles set the foundation for the topic.
- **Intent & Guidance:** Qualitative insight on what is achieved by regulating the topic along with guidance on important things to consider when preparing related objective standards.
- **Example Objective Standards:** Recommended numerical or dimensional range(s) with written guidance and diagram(s) to help determine the specific standard(s) needed to meet the intent statement and fulfill the design guidance.
- **Economic Feasibility Insight:** Quantitative insight on key topics to help inform decision-making about whether or not to regulate certain topics and, if so, what trade-offs might be involved.

The Handbook is flexibly designed with chapter headers and an index (included in the Appendices) for ease of use and allows you to either explore a wide range of topics or flip to the specific topic(s) to select and refine standards that are important to and appropriate for your community. In other words, it is intended to be used as a reference and not necessarily read from cover to cover.

ESSENTIAL & SUPPLEMENTAL TOPICS

Each chapter addresses key topics pertinent to the overall subject of the chapter and are identified as essential or supplemental.

- **Essential topics** are those that contribute highly to built form and character and should be regulated.
- **Supplemental topics** are those that also contribute to built form and character but may not be essential for all communities. These are provided for consideration.

For instance, Chapter 3. Building Design includes two essential topics (Sections 3.1 Building Massing and 3.2 Façade Articulation) and one supplemental topic (Section 3.3 Building Types). The essential and supplemental topics addressed in each chapter are indicated on the following page.

Note: The additional topics in Ch. 4 Site Design are important but are identified as additional in this Handbook to reflect the assumption that most jurisdictions will keep their existing development standards (e.g., building setbacks).

CLOSER LOOK

Essential and supplemental topics are identified throughout the Handbook with the following icons.

E **ESSENTIAL TOPIC**

S **SUPPLEMENTAL TOPIC**

OBJECTIVE DESIGN STANDARDS TOPICS OVERVIEW

CHAPTER

- INTRODUCTION
- INTENT & GUIDANCE
- EXAMPLE OBJECTIVE STANDARDS
- ECONOMIC FEASIBILITY INSIGHT

CH. 2 PEDESTRIAN EXPERIENCE

- (E) **2.1 Ground Floor Design.** How to design the building's ground floor to engage the public realm.
- (E) **2.2 Building Frontage Design.** How to provide context-appropriate transitions between the public realm and the building.
- (E) **2.3 Streetscape Frontage Design.** How to design the streetscape along the front of buildings (public realm).

CH. 3 BUILDING DESIGN

- (E) **3.1 Building Massing.** How to shape and scale building massing, including roof form and additional massing features, to fit in the context of surrounding built forms and reinforce the building's character and identity.
- (E) **3.2 Façade Articulation.** How to organize and compose building façades, including openings and materials.
- (S) **3.3 Building Types.** When and how to use building types for more predictability in building form.

CH. 4 SITE DESIGN

- (E) **4.1 Vehicle Access & Parking.** How to provide vehicular access as part of walkable site design.
- (S) **4.2 Building Placement.** How to place buildings to engage the public realm.
- (S) **4.3 Building Equipment, Utilities & Service Areas.** How to integrate utilities and service areas into walkable site design.
- (S) **4.4 Design-Sites.** How to address development of multiple buildings on one parcel and on existing superblocks.

CH. 5 OPEN SPACE

- (E) **5.1 Community Open Spaces.** How to include community-scaled open spaces, like greens and plazas.
- (E) **5.2 Shared Open Spaces.** How to provide for shared on-site open spaces, like shared rear yards, courtyards and rooftop decks.
- (S) **5.3 Private Open Spaces.** How to address private open spaces, like patios and balconies.

SELECTING THE TOPIC(S) AND EXAMPLE STANDARDS FOR YOUR PLACETYPE

To productively use this Handbook, you will first need to ask and answer the following questions:

1. Where in your community will you apply ODDS?
2. Which Placetype(s) represents the physical environment envisioned for that area? *See Section 1.1 for more information on Placetypes.*
3. Do you know which topic you are interested in?
   - If YES, then see the Table of Contents or Index to locate the topic in the Handbook.
   - If NO, then see the Overview of Placetypes and Relevant Design Topics matrix below for guidance on which topics are most relevant to your Placetype.

Once you locate your topic(s) of interest in the Handbook, follow these steps:

4. Read the guidance and note what is relevant for your Placetype.
5. See the Guide to Tailoring the Example Standards on the following page for how to customize the example standards for your Placetype.

CLOSER LOOK

Is a topic relevant to a certain Placetype?

Look for this table (shown below) throughout the Handbook to see which Placetype suits your objectives. A solid circle (●) indicates the topic and its standards, are relevant to that Placetype. An outlined circle (○) indicates the topic might be relevant to that Placetype based on the community priorities and need.

Placetype		
Neighborhood	●	●
Corridor	●	○
Center	○	○

Note: The terms for Neighborhood, Center and Corridor Placetypes and house-and block-scale buildings are **bolded** *throughout the Handbook for easy identification.*

OVERVIEW OF PLACETYPES AND RELEVANT DESIGN TOPICS

DESIGN TOPICS	PLACETYPES					
	Neighborhood		Corridor		Center	
	House-Scale	Block-Scale	House-Scale	Block-Scale	House-Scale	Block-Scale
2.1 Ground Floor Design	●	●	●	●	●	●
2.2 Building Frontage Design	●	●	●	●	●	●
2.3 Streetscape Frontage Design	●	●	●	●	●	●
3.1 Building Massing	○	●	●	●	●	●
3.2 Façade Articulation	○	●	●	●	●	●
3.3 Building Types	●	○	●	○	●	○
4.1 Vehicle Access & Parking	●	●	●	●	●	●
4.2 Building Placement	●	●	●	●	●	●
4.3 Building Equipment, Utilities & Service Areas	○	●	●	●	●	○
4.4 Design-Sites	●	○	●	○	●	○
5.1 Community Open Spaces	○	○	○	●	○	●
5.2 Shared Open Spaces	○	●	●	●	●	●
5.3 Private Open Spaces	○	●	●	●	●	●

GUIDE TO TAILORING THE EXAMPLE STANDARDS

Example standards are denoted by a shaded background distinct from other content in the Handbook. The standards are provided as recommended numerical or dimensional ranges, rather than a predetermined numerical value, to allow for customization based on existing physical context and desired built form. As such, planners will need to determine the specific numerical value(s) for each standard using the written guidance and diagram(s) for that topic. See the annotations on an example standard below for further information on how to determine whether the standard should be a single numerical value or a minimum/maximum.

The diagram highlights in color the built form that is addressed through the standards in the table below. Various elements are alphabetically labeled to help visualize the corresponding standard.

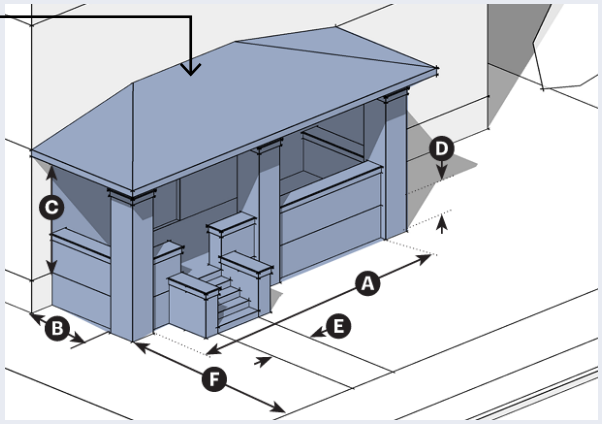
"At least" indicates a minimum value to be determined; "Up to" indicates a maximum value to be determined. In this case, the standard may be **10' min.; 14' max.**

A range indicates a single value to be determined. In this case, the recommended standard may be any value between 8' and 10', for instance **9'**.

Additional standards are provided as an option for communities that may want more detailed standards.

Example Standards

PROJECTING PORCH



REQUIRED STANDARDS		
Width, Clear	At least 10'; Up to 15' depending on the context	A
Depth, Clear	At least 6'; Up to 12' depending on the area available	B
Height, Clear	8' to 10' depending on the ground floor height	C
Stories	1 to 2 stories	
Finish Level above Sidewalk	1' to 5'	D
Pedestrian Access	3' to 6'	E
Distance between Porch and ROW/Lot Line	5' to 10' depending on the existing pattern	F

ADDITIONAL STANDARDS
Porch shall be open on two sides and have a roof.
Pedestrian access allowed at either the front or either side of Porch.

Ch. 1
Introduction

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1.0 Overview of the Handbook & Objective Design Standards

The San Francisco Bay Area is known for its innovation, beautiful landscape, diverse communities, vibrant neighborhoods and eclectic architecture. These assets have fueled the region's economy, but job growth has outpaced housing development for years. Although the region continues to attract people, housing has become scarce and unaffordable.

In 2023, Bay Area communities began adopting updated Housing Elements, reflecting a new era of housing policy generated in response to changes in State housing law and community advocacy. At the same time, many communities in the region are building housing units in numbers not seen in many decades. These new developments are essential to providing homes for people at all income levels.

But, how do we ensure that new housing integrates into existing communities? How can neighborhoods evolve in ways that both preserve the Bay Area's unique livability and sense of place and make space for new innovations, new housing units and new people? How do we continue to provide community members and decision-makers with opportunities to shape housing design?

Establishing objective standards provides a way to integrate new development within the context of existing communities—its centers, corridors and neighborhoods. It provides tangible ways for community members to identify the design priorities for their neighborhoods and avoid designs with unarticulated massing or weak ground-level design.

We invite you to use this tool, selecting from the example standards and images and adapting them to fit your community's needs.

THE HANDBOOK

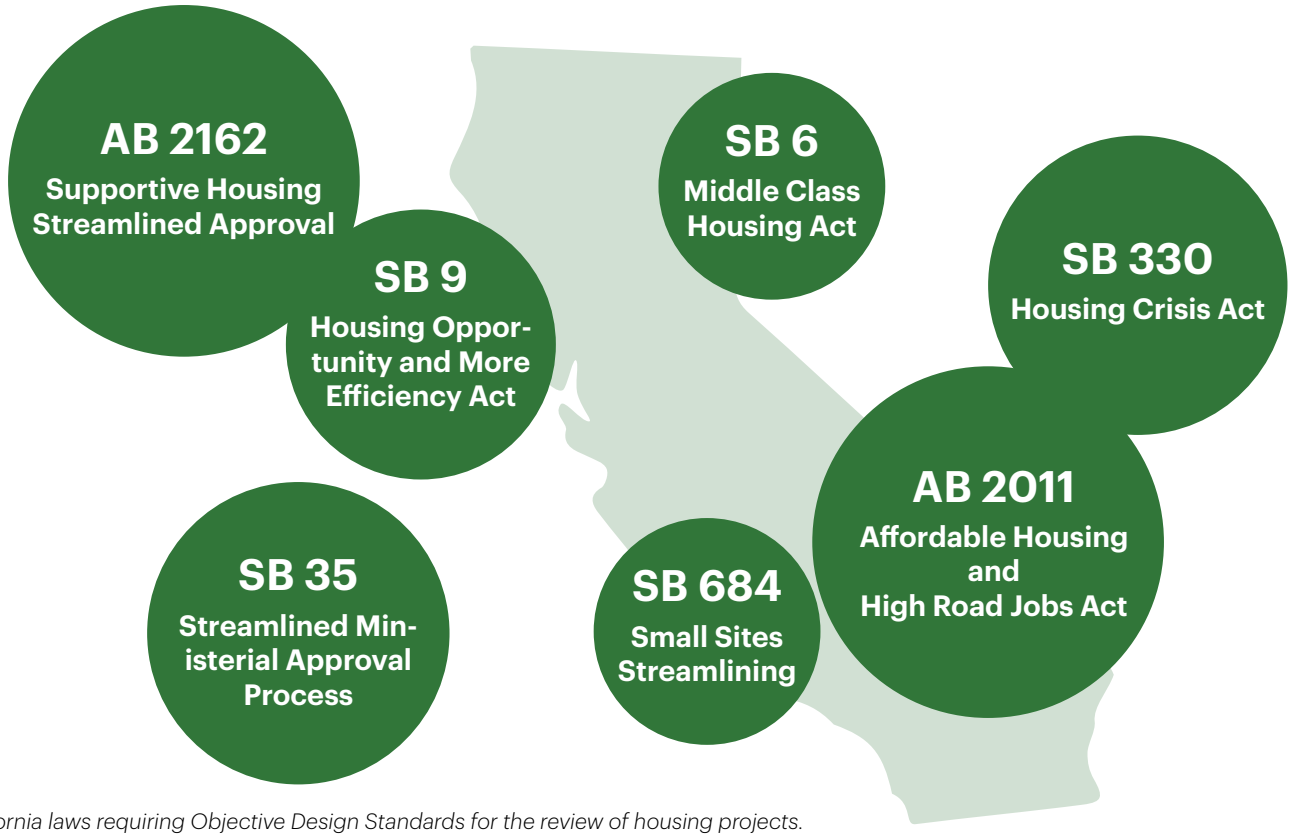
How does this Handbook respond to State streamlining legislation? How can I use this Handbook to develop standards for my community?

The Objective Design Standards Handbook (Handbook) provides a set of best practices and recommendations that the cities, towns and counties of the Bay Area can use when preparing objective design standards for housing and mixed-use projects.

Recent changes in State law require that for certain types of housing and mixed-use projects eligible for streamlined review, jurisdictions may only consider objective criteria. Objective standards are a key feature of streamlined approval processes in that they provide predictability regarding what can be approved without discretionary review. Objective design standards can also help to create good buildings and places and ensure that new development builds upon and improves Bay Area communities.

While many jurisdictions have adopted some form of objective design standards in recent years, strategy and content varies widely. Many jurisdictions may see a need to update and/or amend existing objective design standards as they are being used to review and approve projects. Newer State laws (such as AB 2011 and SB 6) have also required jurisdictions to allow housing in new places (e.g., commercial corridors) which may require jurisdictions to expand their use of objective design standards across broader geographies.

In response, this Handbook is provided as a resource for planners seeking to keep their existing objective design standards current and reflective of best practice and to inform future updates to objective design standards to meet changing housing needs.



California laws requiring Objective Design Standards for the review of housing projects.

OBJECTIVE DESIGN STANDARDS

What are the purposes and benefits of having objective standards? How can they support neighborhood planning, not just individual building design?

DESIGN STANDARDS FOR STREAMLINED REVIEW

The transition from subjective regulations to objective standards represents an opportunity to support housing production goals while maintaining a community's design priorities. Objective standards establish and clarify a community's desires early in the process for how new development should look by presenting a range of design requirements or choices that work with and reflect intended physical character.

Communities can streamline project review by allowing projects that meet objective standards to be processed administratively by staff or through a limited number of hearings. Notably, projects that require other permits or parcel maps (e.g., subdivisions) may still require discretionary review.

Local governments benefit when the rules are clear, avoiding processes that require extensive time from staff and officials. Applicants benefit by being able to understand the local government's design requirements before they begin designing a project, making it possible to devote time and resources to achieving desired outcomes. In turn, planning staff are able to efficiently review applications that are more complete and necessitate fewer changes and resubmittals.

The term "objective standards" appears in a wide range of State housing laws and is likely to continue to appear in future bills. Far from a guarantee of local control over a project's design, subjective regulations actually reduce a local government's control in the face of State housing laws which often allow only objective standards to be applied.

The statewide importance of transitioning to objective standards was summarized well in a recent appellate case: "In short, the [Housing Accountability Act] does not wrest control from local governments so much as require them to proceed by way of clear rules adopted in advance, rather than by ad hoc decisions to accept or reject proposed housing. (San Mateo, supra, 68 Cal. App.5th at 851)."

NEIGHBORHOOD PLANNING

By their nature, objective standards regulate design on a project-by-project basis. While the guidance and standards in this handbook reflect the context of adjacent buildings (particularly height), they cannot capture holistic planning for a larger neighborhood. Planning is based on the existing or intended physical characteristics of a place. The success of mixed-use corridors and walkable neighborhoods include responding to things like street orientation, view corridors and bike infrastructure. Does the ground floor retail along the corridor actively engage pedestrians? Work with your economic development and public works departments to ask these questions and identify the desired collective outcome for districts where objective standards are applied.

As the common thread between individual projects, long-range planning documents and the existing neighborhood, planners have an important role to coordinate community development and enable great places for people to live and gather. This can happen in small and large ways: through conversations with applicants and architects on the relationship of the project to the street and neighborhood; coordination of impact fee spending on infrastructure investments such as street lights and bike facilities; and implementation of planning policies around new parks and other community investments.

Planners should look to adopted urban design plans, area plans, or Specific Plans to inform how they apply and/or customize these objective standards to individual projects. For example, it might change how they prioritize what is "essential" or result in a change to setbacks, landscaping or lighting standards. This guidance might be subjective in the urban design plan, but can be translated into the objective standards to reinforce implementation for a building and district.

EXCEPTIONS TO STANDARDS

How can we add flexibility, acknowledge the reality of State Density Bonus Law waivers and concessions and work with other City/County departments to ensure consistency across regulations?

COMMON DENSITY BONUS WAIVERS AND CONCESSIONS

Objective design standards can reinforce good design principles even when waivers and/or concessions are applied. For example, for projects proposed under State Density Bonus law, project sponsors often request waivers for standards that physically preclude the development of housing units. This includes development standards such as building height, setbacks, daylight plane and lot coverage requirements. Additionally, project sponsors often request concessions from regulations that have substantial cost implications. Typically, this may include private open space requirements (e.g., balconies) and ground-floor retail requirements.

Objective design standards address design principles that go beyond physical development standards and costly regulations. Objective standards can also address relationships between private and public spaces, separation of travel modes and ground-level façade treatments. These types of standards improve the pedestrian experience and are often not eligible for waivers or concessions.

FLEXIBILITY AND EXCEPTIONS

Communities may want to provide flexibility and options for alternative methods of meeting standards. This can address situations where standards are infeasible due to specific physical situations regarding the site or project. Or where a unique design solution may be better suited to the site. Communities can build in a menu of options for alternate ways to achieve design objectives. They can also require compliance with a set number of standards (e.g., 8 out of 10). Communities can also allow for reductions and modifications through a review process and required findings by the decision maker. However, note that allowing exceptions can potentially remove projects from streamlined review and into a discretionary process.

WORKING WITH OTHER CITY/COUNTY DEPARTMENTS

Many of the guidelines and standards in this Handbook address topics that are also regulated by other City/County departments. In particular, you may find that objective design standards address topics that are also addressed in the Building Code (e.g., windows) or by Public Works (e.g., streetscapes, utilities). It is essential to coordinate across departments to aid in streamlining and prevent inconsistencies between regulations.

CLOSER LOOK

Relationship to State Density Bonus Law

According to California State law, housing projects that qualify for a density bonus per Government Code Sections 65915 – 65918 are entitled to waivers and concessions of development standards. Projects are subject to objective design standards, unless project sponsors request waivers or concessions. It is important for jurisdictions to establish design priorities in the form of design standards so that developers understand expectations, even if the standards are proposed to be waived.

1.1 Placetypes & Building Scale

PLACETYPES IN THE ABAG REGION

Understanding the region as Placetypes: Regulations for Neighborhoods, Corridors and Centers of varying scale and intensity.

A Placetype is a distinct physical environment that, when combined with other Placetypes, comprises towns and cities of all sizes. Placetypes are based on characteristics of building form, height, setbacks, lot coverage, parking location and mix of uses. Placetypes serve as a framework in this Handbook for planners to understand what content is relevant to their community's needs and objectives. The recommendations in this Handbook are informed by an analysis of the ABAG region's most common physical environments for housing and mixed-use development—**Neighborhoods**, **Corridors** and **Centers**.

For the full analysis of the ABAG region's Placetypes, see Appendix B: Placetypes Atlas for the Bay Area Region.

This Handbook classifies the physical environment (i.e., **Neighborhoods**, **Corridors** and **Centers**) by building scale (i.e., **house-** and **block-scale**; see the following page for more information on building scale) resulting in six different Placetypes that reflect the range of form and intensity of physical environments found in the ABAG region. The Handbook coordinates the six Placetypes with each design topic to convey the topic's relevance to the Placetype.

Identifying the Placetype the local community has or wants to have is key to using this Handbook productively. As an example, your community might currently have a low-intensity **Corridor** of large parking lots and strip malls and the community's objectives are to transform it to a **house-scale Neighborhood**. See the User Guide for an overview of the topics relevant to achieving your desired Placetype.

The two images above illustrate the transformation of a low-intensity Corridor into a house-scale Neighborhood.

Image Credit: Opticos Design, Inc.

BUILDING SCALE

Buildings can be categorized as house- or block-scale buildings according to their physical form and scale.

House-scale buildings contribute to smaller-scale environments. Buildings are generally up to three stories, separated (detached) from adjacent buildings and set back from the street and sidewalk. They are similar in form to single family houses, yet small-scale environments with **house-scale buildings** can also include multi-family buildings such as duplexes, bungalow courts, courtyard buildings, townhouses and mixed-use main street buildings.

House-Scale Neighborhoods

- One to two stories
- Mostly detached building forms
- Medium to deep front setbacks
- Moderate lot coverage
- Parking located at front, side and rear of lot
- Limited to no mix of uses

House-Scale Corridors

- Mostly two stories; Up to three stories
- Detached and attached building forms
- Small to medium front setbacks
- Moderate lot coverage
- Parking located at side or rear of lot
- Mostly horizontal mix of uses

House-Scale Centers

- Mix of two to three stories
- Mostly attached building form
- Zero to small front setbacks
- High lot coverage
- Parking located mostly at rear of lot
- Mostly horizontal mix of uses

Block-scale buildings contribute to larger-scale environments. Buildings are individually as large as a city block or attached along a street to form a continuous façade along most, or all, of a block. They typically have minimal setbacks and are often mixed-use with non-residential uses on the ground floor and housing or office on upper stories. Examples of **block-scale buildings** include multiplexes, mid-rise buildings and stacked flats.

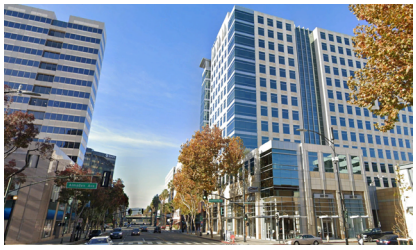
Block-Scale Neighborhoods

- Mix of four to eight stories
- Detached and attached building forms
- Mostly small front setbacks
- High lot coverage
- Parking located at rear of lot
- Limited mix of uses

Block-Scale Corridors

- Mix of five to eight stories
- Mostly detached building forms
- Mostly small front setbacks
- High lot coverage
- Parking located mostly at side and rear of lot
- Horizontal and vertical mix of uses

Block-Scale Centers



- Mix of 4 to 10+ stories
- Mostly attached building form
- Zero front setbacks
- High lot coverage
- Parking located mostly at rear of lot, underground, or structure
- Mostly vertical mix of uses

1.2 Economic Implications of Objective Design Standards

COSTS AND BENEFITS

Balancing upfront project costs with long-term placemaking benefits.

Design standards are an important tool that cities can use to promote high-quality, safe and visually appealing buildings. However, these standards, even if made clear and objective, can increase costs and complexity for projects. If overly restrictive or too numerous, design standards can contribute to higher housing costs—or can keep projects from being built at all.

On balance, design standards can influence better project designs that can increase property/rental values. Many design standards are of critical importance for community design goals and should not be compromised.

Aside from these "essential" standards, there are standards that can be considered "supplemental." When considering adopting these supplemental standards, moderation is key. The financial implications of these supplemental standards must be weighed alongside their placemaking benefits. As part of this Handbook, a range of standards was analyzed to help planners make decisions informed by financial feasibility and housing affordability.

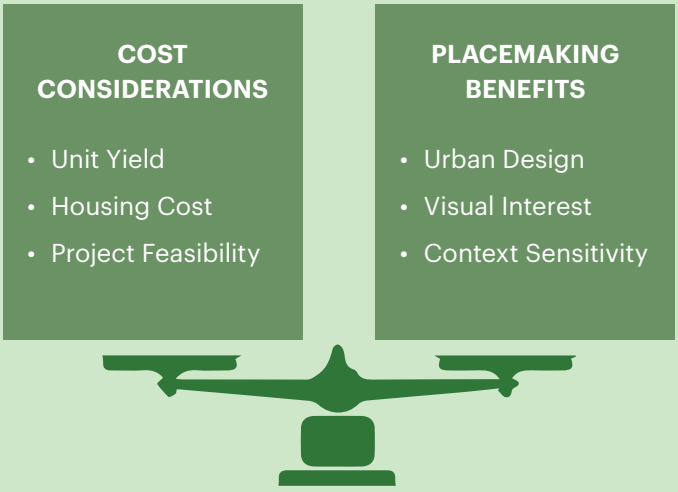
Planning requires thinking in this context and over space and time. These guidelines and standards are intended to assist a planner in assessing the current neighborhood place type and recognizing that a neighborhood may evolve toward a different place type. The challenge a planner faces is facilitating this transition. Can the needs of an individual building and the policy direction of growth and increasing density in all neighborhoods be seamlessly achieved within the current neighborhood context? Good design can help.

CLOSER LOOK

Considerations in Balancing Costs and Benefits

Choosing how to regulate design is a delicate balance between maximizing placemaking, increasing overall neighborhood value and increasing project costs.

In order to strike the right balance, planners must consider how adopting certain design standards could limit overall unit yields, increase housing costs, or impact project feasibility in the context of the long-term evolution of the neighborhood.



THE PROJECT BALANCE SHEET

How can design standards impact the project balance sheet?

Any housing development project—whether affordable or market rate—relies on a real estate pro forma. Essentially, this is a project's balance sheet. It includes an estimate of up-front and on-going costs, expected future revenues and a projection of financial return. Before moving a single shovel of dirt, developers look at three factors—costs, revenues and financial return—to decide whether or not to move forward with a project.

COSTS

On a real estate balance sheet, costs can be divided into two broad categories: hard and soft costs. Hard costs include physical development, e.g., the price of materials, labor and land. Soft costs relate to the administration and execution of a project, e.g., architectural fees, legal and permit processing fees and taxes. Design standards can impact hard costs by requiring certain construction materials and/or methods. Similarly, design standards can increase soft costs by requiring more complex designs that increase architectural or engineering fees and lengthen the permitting process, delaying generation of revenue.

REVENUES

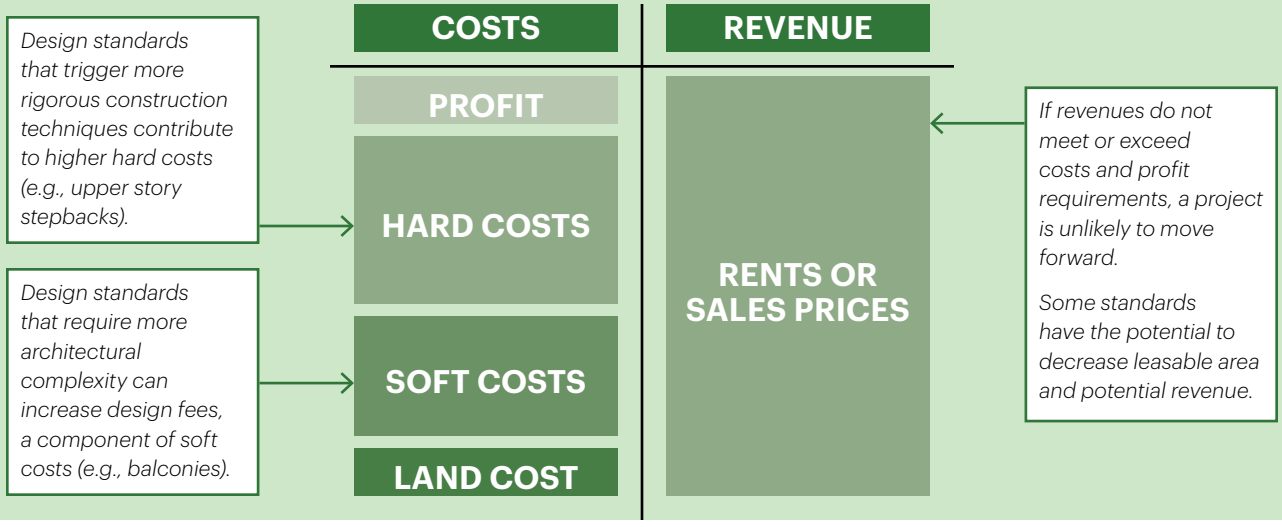
Revenues are what a developer expects to recoup upon completion of their project. These revenues can occur up-front (in the case of "fee simple" or condo development) or over the course of many years (in the case of rental housing). Design standards can decrease revenues by reducing the amount of units and other leasable space within a building. This loss of revenue is sometimes referred to as opportunity cost.

FINANCIAL RETURN

Generally speaking, a project's net financial return is what remains after costs have been subtracted from revenues. For-profit developers will judge financial feasibility of a project by comparing expected returns to other investments with similar risk. Nonprofit developers will base their decisions on the returns required by their sources of capital. In either case, if complying with design standards causes a project's financial return to fall below a developer's requirements, they are unlikely to move forward with a project.

CLOSER LOOK

Design Standards Affect Project Feasibility



RANGE OF FINANCIAL IMPACTS

What are the general financial impacts related to hard, soft and opportunity costs for each set of key topics contained in the Handbook?

For each of the supplemental standards in the Handbook, Cascadia Partners conducted research and interviewed subject-area experts to pinpoint general cost considerations. Following is a summary of the range of types of cost impacts related to hard, soft and opportunity costs for each set of key topics contained in the Handbook. For a more complete analysis of the economic impacts of standards, see Appendix C.

CH. 2 PEDESTRIAN EXPERIENCE

Ensure that the ground floor is active and visually engaging

FINANCIAL IMPACT ($$)

Pedestrian Experience standards have a medium cost impact on development projects. The highest cost impact is on opportunity costs.

- **Opportunity Costs**: Elements like higher ground floor ceiling heights or façade or frontage types cut into a building's square footage, reducing revenue-generating square footage (and in turn, profit).
- **Soft Costs**: Building frontage standards, given their more detailed nature, may have some impacts on the length of the entitlement process even if clear and objective.
- **Hard Costs**: There are some limited impacts on hard costs; Pedestrian Experience standards that require specialized building materials will drive up construction costs, resulting in an impact on hard costs, albeit likely a small increase in total hard costs. The higher cost impact may result from certain building frontage types, such as galleries, arcades or gateways, that require building area spanning clear space. These types of buildings will require more engineering and different materials and construction techniques to ensure they can be structurally sound revenue.

CH. 3 BUILDING DESIGN

Shape appealing public realm that complements context.

FINANCIAL IMPACT ($$ - $$$)

Building Design standards can have a medium to high impact on development costs. Their primary financial impact is on opportunity costs.

- **Opportunity Costs**: Stepback standards or required façade articulation through recesses may require buildings to reduce square footage. The loss in square footage results in a loss of revenue, profit and therefor financial viability.
- **Hard Costs**: Massing standards and fenestration standards have a medium to high impact on hard costs due to extra materials and labor that may be required to construct these additional features. Building detail takes additional construction time and requires additional and sometimes more costly, materials. Any projecting elements will also require weatherization, which drives up costs.
- **Soft Costs**: The impact on soft costs is medium, due to the additional design and engineering work and the extended review/approval process.

CLOSER LOOK

Tradeoff between Cost and Value Creation

While design standards can increase the cost of development projects, they also provide jurisdictions with tools to promote community design goals. Design standards encourage high-quality, visually appealing buildings that not only benefit a project's residents, they also create value for the surrounding neighborhood. When considering implementing new design standards, jurisdictions should weigh the impacts of design standards on project costs against the project-specific and neighborhood value they may create.

CH. 4 SITE DESIGN

Fit new buildings within its context and address public realm.

FINANCIAL IMPACT ($$ - $$$)

While Site Design standards generally have a medium to high cost impact on development projects, any standards that dictate the amount of buildable area on a lot are by far the most significant from a financial perspective.

- **Opportunity Costs:** Reductions to building size—through lot coverage, setback standards, or maximum block size—or requirements to dedicate more area to parking reduce the amount of revenue-generating square footage that can be achieved on a lot. This reduces profits for developers, which in turn makes development less financially feasible.
- **Soft Costs:** The impact on soft costs is low. Designers are used to working with Site Design standards and unless the standards are excessively strict and/or variances are sought they should not add significant soft costs to meet them.
- **Hard Costs**: Site Design standards can have a medium to high impact on hard costs, particularly if a development needs to include tuck-under or structured parking as a result of building setbacks, lot coverage standards, or new block standards that remove buildable area on a lot.

CH. 5 OPEN SPACE

Promote healthier environment and lifestyle for residents and community.

FINANCIAL IMPACT ($$$)

Open Space standards have a medium impact on development costs, primarily on opportunity costs.

- **Opportunity Costs**: Opportunity costs can be high if the inclusion of private or shared open space reduces rentable square footage. This may be offset if the open space is a desirable amenity that the market is willing to pay for, such as a balcony in a market-rate unit. The cost of the unit will be higher however, even if more feasible from the developer's perspective. Increased operating costs associated with certain types of open spaces, e.g., balconies and rooftop decks, include higher insurance premiums and added maintenance to mitigate potential issues like water intrusion.

Ch. 2 Pedestrian Experience

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2.0 Why Pedestrian Experience Matters

THE BUILDING'S GROUND FLOOR AND ITS ASSOCIATED STREETSCAPE ELEMENTS CONTRIBUTE TO THE VISUAL APPEAL OF THE PUBLIC REALM AND ACTIVATE IT.

Standards that address the pedestrian experience are intended to ensure that the ground floor of each building along the public realm is active and visually engaging.

- *Building frontage*
- *Space for entrances, window shopping*
- *Space for walking*
- *Space for street furniture and trees*
- *Trees and urban greenery*
- *Street lighting*

The public realm exists along every street. When designed to support a walkable place, the public realm visually feels part of the adjacent buildings and their building entries (building frontage). This is because the public realm consists of two parts:

- The part behind the sidewalk that contains individual buildings; and
- The part that includes the sidewalk, street trees/ planting and on-street parking (streetscape frontage).

Three key elements work together to form the public realm into an appealing walkable environment and pedestrian experience:

- The location, height and depth of the ground floor;
- How the ground floor fronts and relates to the adjacent street and sidewalk; and
- The design of the streetscape.

The public realm can look and feel vastly different depending on if you are in a **Neighborhood**, along a **Corridor**, or in a **Center** (downtown/main street). Each of these three Placetypes might have the same elements but in different sizes and locations to serve the individual purpose of each place. Therefore, it is important to coordinate the individual efforts of different city/county departments to produce a coordinated whole: the public realm.

This chapter is focused on providing guidance and example standards for the ground floor of a building and its associated streetscape elements along the public realm.

DESIGN PRINCIPLES

The following principles inform the guidance and example standards in this chapter.

E 2.1 Ground Floor Design

Design of the story that contains the ground floor, including its wall surfaces, windows and entries.

- Each building faces the abutting street or open space and orients its main entries to that street/open space.
  - The ground floor is at, or setback from, the street depending on the physical context (**Neighborhood, Corridor, Center**) and scale (**house-scale or block-scale**).
- Windows provide visibility to and from the adjacent streetscape and prevent large areas of blank walls.

E 2.2 Building Frontage Design

Design of the individual entries along the ground floor.

- Parking is located to the side or behind buildings to visually present the building along the streetscape and provide a direct connection between the building entries and the public realm.
- Entries to buildings and to individual units, connect to the adjacent streetscape through building frontage types.
- Building frontage types are coordinated with the intended building type and Placetype.

E 2.3 Streetscape Frontage Design

Design of the space for walking, space for street furniture and space for entries and window shopping.

- Streetscapes are designed in response to the physical context (**Neighborhood, Corridor, Center**) and scale (**house-scale or block-scale**).
- Street trees are provided along all streets.
- Landscaping is provided in planters suitable to the physical context (**Neighborhood, Corridor, Center**).

E ESSENTIAL TOPIC

S SUPPLEMENTAL TOPIC

None in this chapter.

Credit: Opticos Design, Inc.

E **ESSENTIAL TOPIC**

2.1 Ground Floor Design

PLACETYPE	
Neighborhood	● ●
Corridor	● ●
Center	● ●

INTENT

Support walkability and the activities of the intended Placetype through the height, depth and transparency of the ground floor.

GUIDANCE

GROUND FLOOR HEIGHT

- Ground floor height is measured from 'floor-to-floor'.
- Enssure adequate ground floor height to support a wide range of active uses.
- A horizontal expression line (material change, change in plane, cornice, or a combination) located above the ground floor top plate, including some or all of the second story, can help give the appearance of a taller ground floor when taller ground floor height is not possible.

GROUND FLOOR FINISH LEVEL

- Ground floor finish level is measured from exterior finished grade to finished ground floor.
- For façades near the sidewalk of the ground floor, elevating the floor finish level can provide some privacy from the public realm.
- Keeping the floor finish level of commercial frontages flush with the sidewalk supports active frontages and creates engaging streets that are visually appealing to pedestrians.

CLOSER LOOK

Is Residential an Active Use?

Active uses encourage "eyes on the street" and, therefore, interaction between the indoor use and pedestrians on the street. In this way, common areas, such as the entryway, living rooms, kitchens, etc., in residential spaces are considered active. Moreover, residential entries such as patios, terraces and porches provide semi-public transitional spaces along the streetscape and are good to activate the public realm. It is important to make sure that floor plans do not locate rooms that require greater privacy (e.g., bathrooms) or storage space along the streetscape.

GROUND FLOOR OPENINGS

- Ground floor windows should be vertically oriented and taller than windows on upper floors to give the ground floor visibility and identity along the streetscape which engages the public realm in ways that shorter, horizontal windows do not.
- Blank wall areas should be minimal on the front of buildings; side street façades can accommodate blank wall areas if necessary. In some contexts, the expectation will be for textured finishes, materials, or architectural elements (e.g., canopies) along blank wall areas.
- Design and organize windows and building entrances in coordination with the façade and its system of bays to generate cohesive and appealing façades.
- Along active frontages, locate ground floor activities/ uses that do not depend on privacy from pedestrians on the sidewalk.
- Provide frequent entrances and openings in building façades to connect the ground floor of buildings to the public realm.

GROUND FLOOR HABITABLE DEPTH

- Beyond simply providing access to upper stories, ample depth from the façade to the rear of the ground floor activates the ground floor and the public realm, by having residential or other active uses contributing to an appealing pedestrian environment.

This diagram illustrates the relationship between key elements described in this section.

Ground Floor

A *Taller windows on the ground floor*

B *Building frontage*

C *Taller ground floor height than upper floors*

D *Elevated ground floor*

Guidance Example: Ground Floor Height

The tall ground floor height visually emphasizes the location and presence of a business.

The short ground floor height limits the range of businesses that would be interested in this space.

Guidance Example: Ground Floor Finish Level

The elevated finish level provides some separation and privacy for residents while connecting the ground floor to the public realm.

The ground floor is at the same level as the sidewalk combined with a minimal setback which does not provide visual separation or privacy.

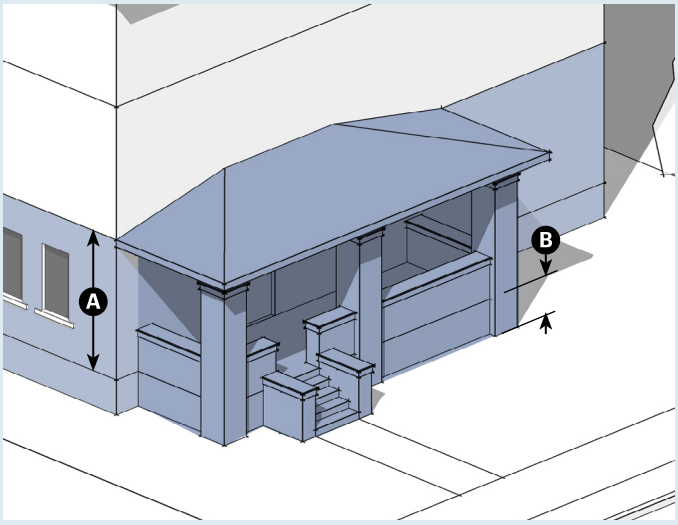
CLOSER LOOK

Ground Floor Height & Finish Level

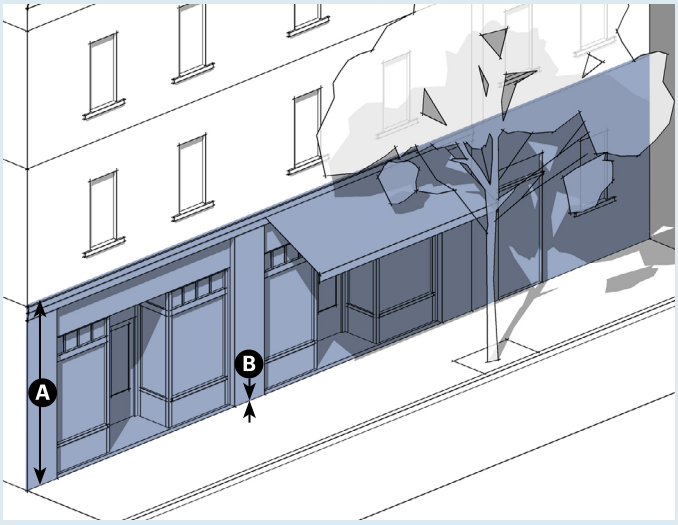
- **House-scale buildings** do not need a tall ground floor but benefit from the ground floor being taller than the minimum required by the building code. Ten feet floor-to-floor is recommended as a minimum for residential.
- Generally, for residential, the closer a ground floor is to the sidewalk, the more it should be elevated above sidewalk level for ground floor privacy and comfort of residents. The farther from the the sidewalks (starting at three feet), the ground floor can be at or closer to sidewalk level.
- In **house-scale Centers** or in **Neighborhoods** and **Corridors** where non-residential space is expected, 12 feet floor-to-floor is the minimum recommended to avoid a shop space feeling too small.
- The ground floor of **block-scale buildings** in **Centers** is typically taller, at least 14 feet, to accommodate a wide variety of commercial tenants. **Block-scale** buildings in **Neighborhoods** and **Corridors** can work effectively with ground floor height between 10 and 15 feet depending on the context.

Example Standards

Residential Ground Floor



Non-Residential Ground Floor



REQUIRED STANDARDS			
	House-Scale	Block-Scale	
	Up to 3 Stories	Over 3 Stories	
Ground Floor Height (Floor-to-Floor)	10' to 12'	10' to 15'	A
Ground Floor Finish Level	1' to 5'		B

REQUIRED STANDARDS			
	House-Scale	Block-Scale	
	Up to 3 Stories	Over 3 Stories	
Ground Floor Height (Floor-to-Floor)	12' to 14'	12' to 18'	A
Ground Floor Finish Level	Flush with sidewalk		B

Guidance Example: Ground Floor Habitable Depth

Example of a depth (approx. 20 feet as indicated by the yellow arrow) that can accomodate a ground floor unit or the first floor of a two-story unit providing active uses (not bedrooms or bathrooms) along the streetscape.

Example of barely enough depth (approx. 10 feet as indicated by the yellow arrow) for an entry and stair to the upper floors resulting in a non-active streetscape.

Guidance Example: Ground Floor Openings

Example of recessed entries with side lights along with large windows to ground floor space provide a high amount of openings along the ground floor, contributing to higher visual appeal. At-grade entries are okay when door is recessed and at least three feet from the sidewalk.

Example of minimal openings and less visual appeal resulting from the placement of utilities and mechanical equipment room along the façade.

CLOSER LOOK

Ground Floor Habitable Depth

- Where housing is expected, it is effective to require enough depth for a small unit, typically between 15 and 25 feet.
- Where non-residential use is expected, the depth can range from 20 feet up to 50 feet depending on the types of intended tenants.

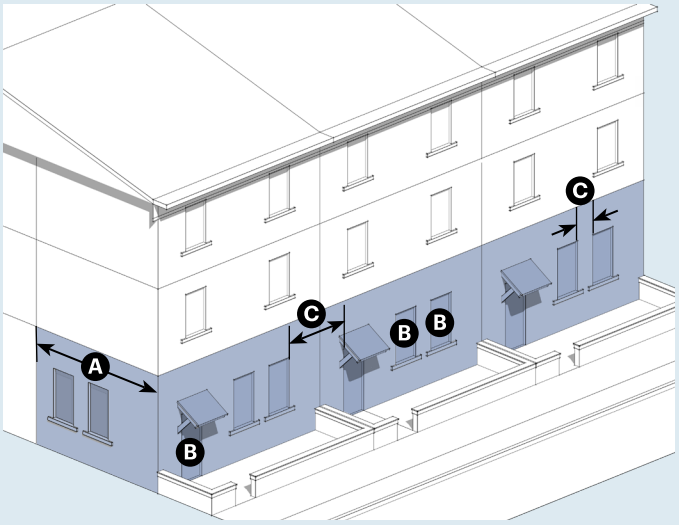
CLOSER LOOK

Ground Floor Openings

- Residential ground floor façades with windows on at least one-half to two-thirds of the façade allow visibility between the inside of the building and the adjacent streetscape.
- Non-residential ground floor façades with windows on at least two-thirds of the façade allow effective visibility into the building from the adjacent streetscape. Depending on existing patterns in the area and the desired architectural style, the amount of windows might need to increase beyond the minimum.

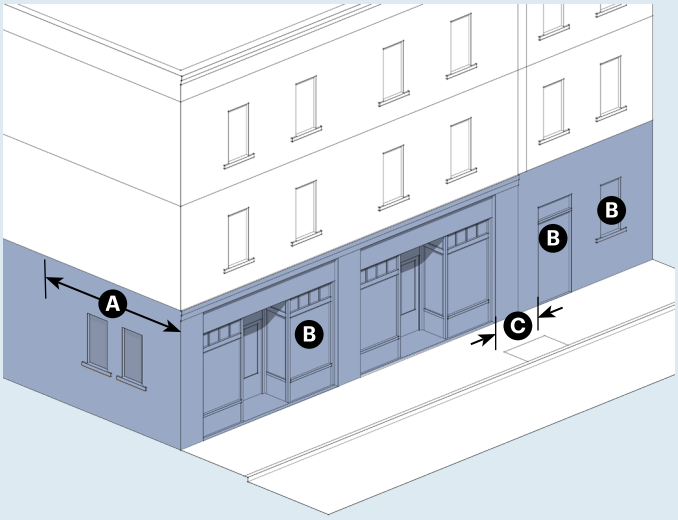
Example Standards

Residential Ground Floor



REQUIRED STANDARDS		
Ground Floor Habitable Depth	15' to 25'	A
Ground Floor Openings	25% to 40%	B
Facing the Front Street or Community Open Space	Maximum 10' between openings	C

Non-Residential Ground Floor



REQUIRED STANDARDS		
Ground Floor Habitable Depth	20' to 50'	A
Ground Floor Openings	60% to 100% depending on the desired visual appearance	B
Facing the Front Street or Community Open Space	Maximum 10' between openings	C

E **ESSENTIAL TOPIC**

2.2 Building Frontage Design

PLACETYPE	
Neighborhood	● ●
Corridor	● ●
Center	● ●

INTENT

Provide an appealing transition between the public realm (streetscape, including the sidewalk) and individual building façades adjacent to the streetscape.

GUIDANCE

- Building frontage is the element that connects each building to the adjacent public realm. Although there are a wide variety of options for building frontages, this Handbook presents a range of eight representative options. This range provides a wide menu of choices for **house-** and **block-scale buildings** in **Neighborhoods, Corridors** and **Centers**.
- Building frontages coordinated to Placetypes ensure that each building frontage contributes to the pedestrian orientation of the public realm.

CLOSER LOOK

Determining Dimensions for Frontages

- Consider local examples that provide the desired transition between the public realm and individual building façades when determining the dimensions for building frontage types. For instance, the minimum depth for a Terrace, Patio or Porch will determine whether there will be enough space for a place to sit outside along the streetscape.
- The dimension for a space that accommodates chairs up against the building façade while leaving room for another person to walk past the chair(s) starts at a minimum of five feet.

ECONOMIC FEASIBILITY INSIGHT

COST CONSIDERATIONS

Form-based frontage standards such as galleries, maker shopfronts and arcades can add visual interest and variation to streetscapes. However, they can also be challenging for designers and developers to use and require increased scrutiny from jurisdictional staff. All of these challenges translate into additional rounds of review, which increases soft costs and puts additional strain on carrying costs. To mitigate these costs, in areas where retail is required, jurisdictions should allow for flexibility in the design to accommodate different ground-floor uses.

HARD COSTS ($$)

Some frontage types may require additional materials or design treatments with higher costs. For example a maker shopfront might require roll-down or sliding doors while a stoop or porch type may require elevating the ground floor, which if the site is on uneven terrain may require more excavational or foundation work.

SOFT COSTS ($$$)

More extensive building frontage requirements necessitate more detailed permit submissions. This translates into higher design, engineering and/or legal fees. Submitting variance applications also adds costs.

OPPORTUNITY COSTS ($$)

Some frontage types may require higher ceiling heights, ground floor commercial uses, or configurations that reduce leasable area. These constraints may impact operational costs (such as heating and cooling larger spaces) and/or affect unity potential.

CLOSER LOOK

Challenges with Frontage Types

The biggest concern with building frontage types was the increased design fees and permitting time associated with entitlement. One designer shared that when budgeting a project with form-based elements, they always add a cost factor to account for the additional time needed to address these standards. Even if it seems as if all the details are spelled out in carefully dimensioned diagrams, in their experience there are frequent challenges when applying frontage types to specific sites and working through staff review.

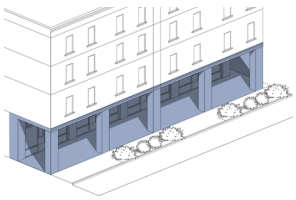
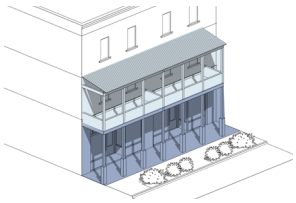
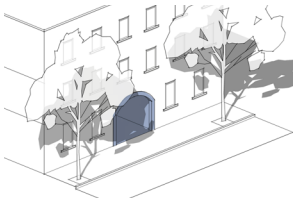
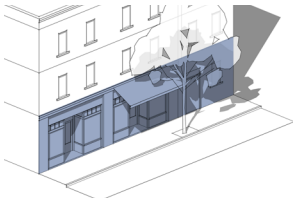
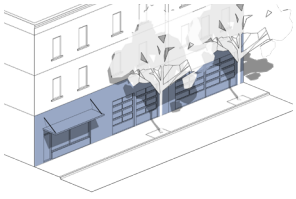
Architects and developers also cited challenges associated with certain frontage types, for example, maker shopfronts as part of "live-work" units. Market-rate developers noted that requiring shopfront configurations adds complexity and rarely yields intended outcomes. Similarly, affordable housing developers noted that it is difficult to add shopfront units to any tax credit-funded projects due to their size, which typically targets smaller, more efficient floorplans. One developer mentioned challenges in marketing maker shopfront units because large street-level windows tend to run counter to residents' desire for privacy.

Image Credit: Bora Architecture and Interiors

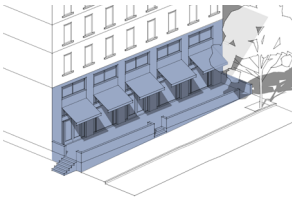
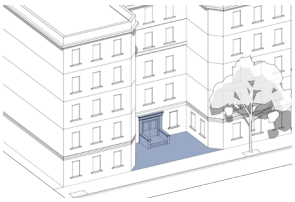
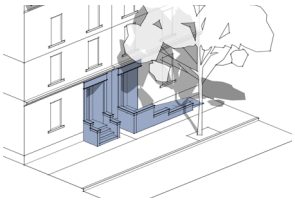
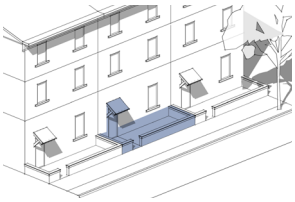
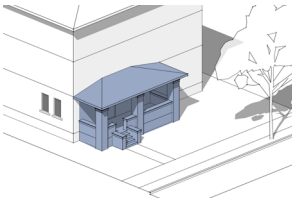
CHOOSING FROM THE MENU OF BUILDING FRONTAGE TYPES

The building frontage types you will apply to new buildings will vary depending on the Placetype(s) you want to implement. The following matrix provides a menu of building frontage types from which to choose. Each building frontage type is coordinated to the Placetype(s) where that type fits the expected building intensity and physical character.

After selecting the building frontage(s) you want to allow in certain Placetypes and/or zoning districts, use the following information in this section to guide your decision-making about specific requirements and metrics.

FRONTAGE TYPES	PLACETYPES					
	Neighborhood		Corridor		Center	
	House-Scale	Block-Scale	House-Scale	Block-Scale	House-Scale	Block-Scale
 **2.2.A Arcade**	—	—	—	●	—	●
 **2.2.B Gallery**	—	○	—	○	—	●
 **2.2.C Gateway**	—	●	—	●	—	●
 **2.2.D Shopfront**	○	○	○	○	●	●
 **2.2.E Maker Shopfront**	—	—	—	○	—	○

Key ● Highly Relevant ○ Relevant — Not Relevant

FRONTAGE TYPES	PLACETYPES					
	Neighborhood		Corridor		Center	
	House-Scale	Block-Scale	House-Scale	Block-Scale	House-Scale	Block-Scale
 **2.2.F Terrace**	—	●	●	●	●	●
 **2.2.G Forecourt**	—	●	○	●	○	●
 **2.2.H Common Entry**	—	●	○	●	○	●
 **2.2.I Stoop**	●	●	●	●	○	●
 **2.2.J Patio**	●	●	●	●	○	●
 **2.2.K Porch**	●	○	●	○	○	—

Key ● Highly Relevant ○ Relevant — Not Relevant

Ⓢ **SUPPLEMENTAL TOPIC**

2.2.A Arcade

PLACETYPE	
Neighborhood	
Corridor	●
Center	●

INTENT

Provide covered space along the ground floor that shelters pedestrians from the weather and adds visual appeal and identity to the building. Also, support occupiable space above and an active public realm at the ground floor level.

DESCRIPTION

An Arcade extends the upper floors of a building over the sidewalk with a colonnade or arches. Occupiable space on the upper floor(s) typically extends over the sidewalk. When used in nonresidential settings, the recessed ground floor façade incorporates the Shopfront type; when used in residential settings, Stoops, Patios and Forecourts are included.

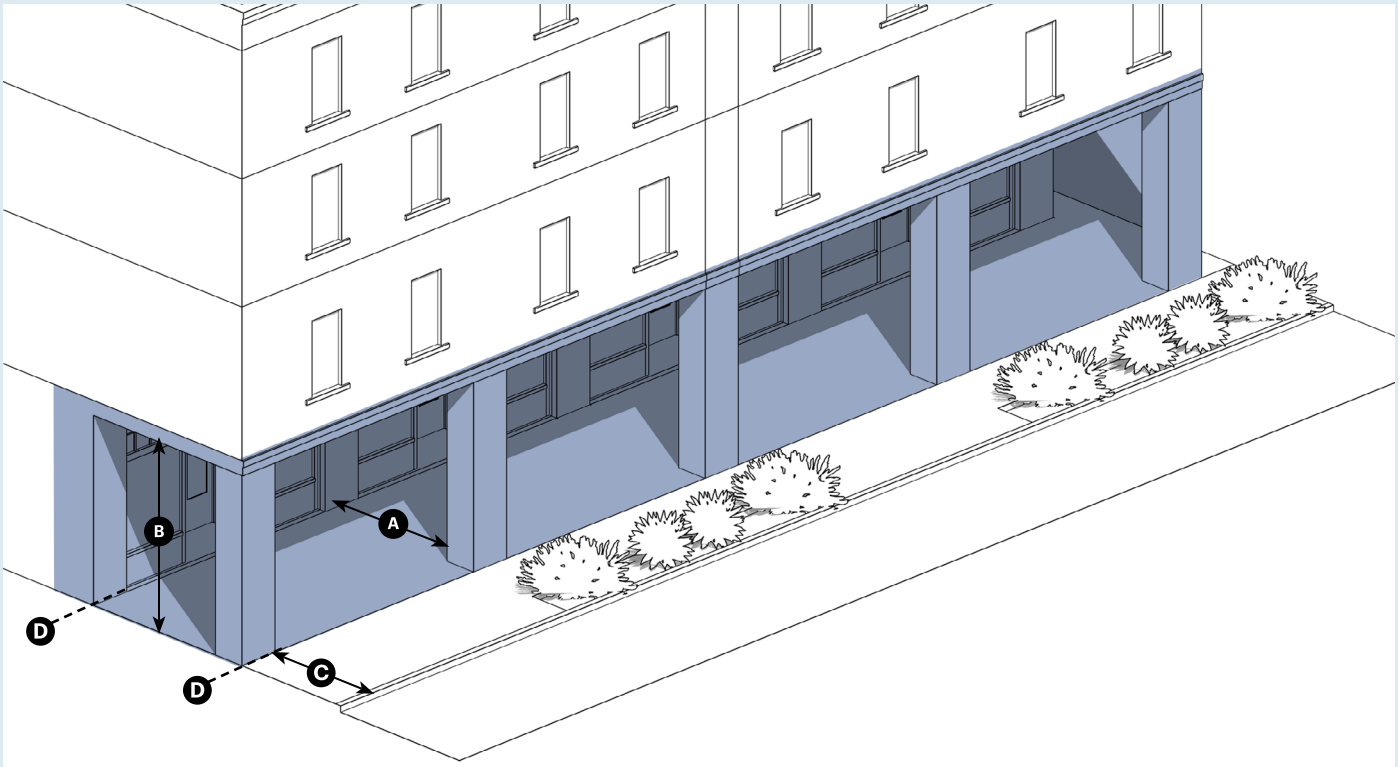
Example of an Arcade.

GUIDANCE

- The Arcade type is most often used in **Centers** but can be applied to buildings in **Corridors**. This type produces a very urban physical character because of the façade being closer to the edge of the sidewalk instead of behind it.
- The Arcade provides an opportunity to add visual appeal and identity to the building and its ground floor business(es).
- The Arcade typically spans over the public sidewalk (ROW). If the public works department does not allow this, it can be moved behind the ROW, but this reduces the total floor space of the building.
- The occupiable space above the ROW typically extends for as many stories as the building.
- The spacing and sizes of columns and/or arches can allow for maximum visibility to and from the street into the ground floor spaces.
- The vertical clearance within an Arcade facilitates signage that projects from the ground floor shops or hangs from the Arcade ceiling.

Example Standards

Arcade



REQUIRED STANDARDS		
Depth, Clear	At least 6' or 8'	A
Ground Floor Height, Clear	At least 10' depending on the ground floor height	B
Setback from Curb	At least 2' to 4' depending on the space available; some locations with enough street width include a planting strip that includes street trees.	C
ROW Location	Depending on Public Works Department	D

ADDITIONAL STANDARDS
Consistent depth across the entire primary front and/or secondary front façade.
Occupy at least 50% of façade on lots over 50 feet wide.
Lighting is required within the Arcade.
Planting is not required.
On a non-residential ground floor, the Arcade is also subject to the Shopfront type standards.

Ⓢ **SUPPLEMENTAL TOPIC**

2.2.B Gallery

PLACETYPE	
Neighborhood	○
Corridor	○
Center	●

INTENT

Provide covered space along the ground floor to shelter pedestrians from the weather while adding visual appeal and identity to the building.

DESCRIPTION

A Gallery is a one- or two-story structure that projects from a building façade to cover the sidewalk with a colonnade or arches. When used in nonresidential settings, the Gallery type is used with the Shopfront type; when used in residential settings the Gallery type is used with Stoops, Patios and Forecourts, as recommended by the Placetype.

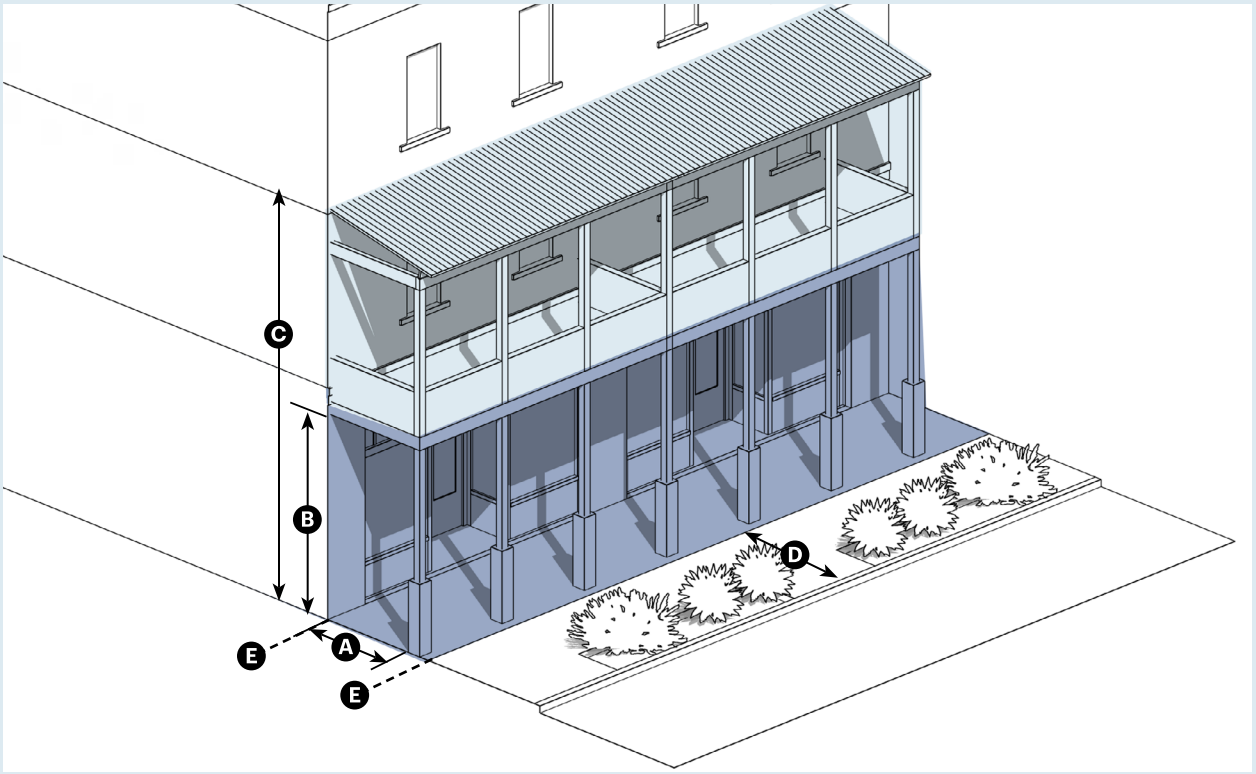
Example of a Gallery.

GUIDANCE

- The Gallery type is most often used in **Centers** but can be applied to buildings in **Neighborhoods** and **Corridors**.
- The Gallery provides an opportunity to add visual appeal and identity to the building and its ground floor business(es).
- The Gallery typically spans over the public sidewalk (ROW). If the public works department does not allow this, it can be moved behind the ROW, but this reduces the total floor space of the building.
- The Gallery structure can be independent of the building if necessary for public works encroachment permit purposes.
- The spacing and sizes of columns and/or arches can allow for maximum visibility to and from the street into the ground floor spaces.
- The vertical clearance within a Gallery facilitates signage that projects from the ground floor shops or hangs from the Gallery ceiling.
- In **block-scale Centers** and **Neighborhoods**, the Gallery is often multiple stories in height providing exterior space to units along the façade.

Example Standards

Gallery



REQUIRED STANDARDS		
Depth, Clear	At least 6'; Up to 20'	A
Ground Floor Height, Clear	At least 10'; Coordinate with ground floor height	B
Height	1 to 2 stories	C
Setback from Curb	At least 2' to 4' depending on the space available; some locations with enough street width include a planting strip that includes street trees.	D
Height	Up to 2 stories	
ROW Location	Depending on Public Works Department	E

ADDITIONAL STANDARDS
Consistent depth across the entire primary front and/or secondary front façade.
Occupy at least 50% of façade on lots over 50' wide.
Lighting is required within the Gallery.
Planting is not required.
On a non-residential ground floor, the Gallery is also subject to the Shopfront type standards.

Ⓢ **SUPPLEMENTAL TOPIC**

2.2.C Gateway

PLACETYPE	
Neighborhood	●
Corridor	●
Center	●

INTENT

Provide a single point of access directly to the interior of a building without first entering a shop space or residential unit.

DESCRIPTION

A Gateway is a covered, open-air passage from the sidewalk to an interior courtyard. This type may accommodate a vertical change in grade from the sidewalk. The Gateway consists of three parts: the portal, the passageway and the courtyard.

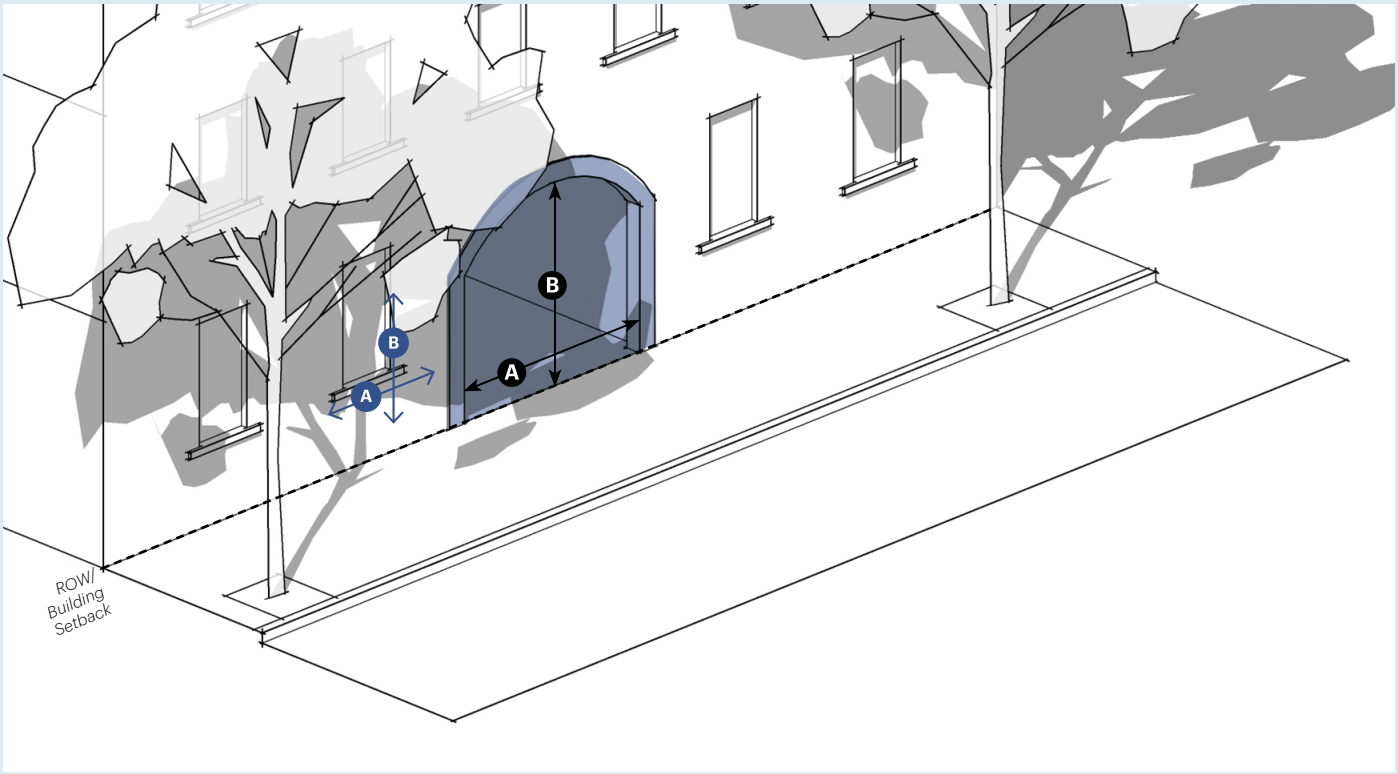
Example of a Gateway.

GUIDANCE

- The Gateway can be used in residential buildings and mixed-use buildings.
- The Gateway opening is visually prominent on the façade as the main building entry.
- Decorative door(s) or gate(s) on the streetscape side of the Gateway contribute to the streetscape.
- The Gateway space is more comfortable and inviting for pedestrians when its width is not more than its height.
- Entries and signage for businesses can be provided along the interior of the Gateway.

Example Standards

Gateway



REQUIRED STANDARDS		
Portal (into Passageway)		
Width, Clear	At least 6'; Up to 12'	A
Height, Clear	At least 10'; Up to 12'	B
Passageway (into Courtyard)		
Depth, Clear	10' to 40' (approx. the depth of one shop space/unit)	
Height, Clear	At least 10'	
Width, Clear	At least 6'	
Courtyard		
Depth x Width	At least 15' x 25'	

ADDITIONAL STANDARDS
The Gateway is to be designed consistent with the materials and finishes of the building.
Lighting is required in the passageway.

Ⓢ **SUPPLEMENTAL TOPIC**

2.2.D Shopfront

PLACETYPE		
Neighborhood	○	○
Corridor	○	○
Center	●	●

INTENT

Provide views into ground floor shops/food uses and promote an active public realm through high visual transparency of the ground floor.

DESCRIPTION

A Shopfront is a discrete and coherent assembly that is composed of an entrance, clear glass, signage and framing elements, sometimes including canopies or awnings. Shopfronts are typically between 15 and 30 feet wide and each correlates with a single ground floor use. The type is intended for service, retail, or restaurant use and includes substantial glazing between the Shopfront base and the ground floor ceiling.

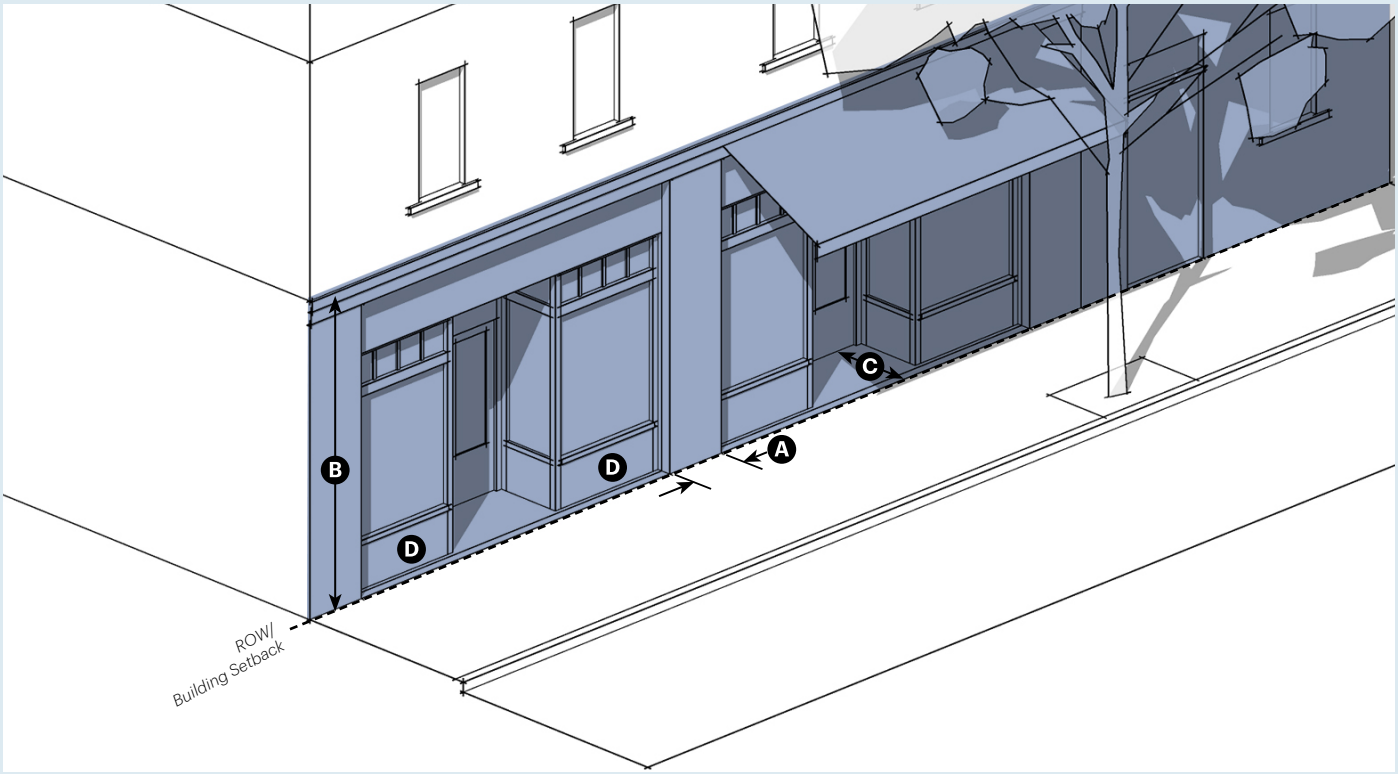
Example of a Shopfront.

GUIDANCE

- The Shopfront is an opportunity to express the image of individual businesses within the design of the overall façade of the building.
- Glazing typically occupies a majority of the surface area between the shopfront base and the horizontal expression line dividing the ground floor and the second floor.
- Transparent glazing allows better visibility to and from the shop space interior. Glazing that allows some light transmission (e.g., frosted), if allowed, is recommended along the bottom of shopfronts, no higher than 42 inches from the abutting sidewalk.
- A Shopfront base (bulkhead) contributes to a building's identity and design by emphasizing the window and display area.
- An awning, canopy, or upper story projection that overlaps the sidewalk is often included and provides an opportunity to express the image of the individual business.
- Awnings and canopies are important to extend window shopping time during rainy seasons.
- Shopfronts with a recessed entry provides more space for access, particularly in situations where the sidewalk is relatively narrow.

Example Standards

Shopfront



REQUIRED STANDARDS		
Distance between Glazing (Pilaster or Wall Width)	At least 1'; Up to 2'	A
Transparency Requirement: Ground Floor Glazing	At least 60% between 2' and 8' above sidewalk surface	B
Depth of Recessed Entry	1' to 5'	C
Shopfront Base/Bulkhead (if used)	At least 6"; Up to 24"	D

ADDITIONAL STANDARDS
Operable doors/windows that allow the space to open to the street are allowed.
Awning and canopy materials are to be made of metal, wood, glass, slate, or concrete and must be solid, without openings.

Ⓢ **SUPPLEMENTAL TOPIC**

2.2.E Maker Shopfront

PLACETYPE	
Neighborhood	
Corridor	○
Center	○

INTENT

Provide ground floor shop space for businesses that do not need display space along the sidewalk and where looking into shops is not expected.

DESCRIPTION

A Maker Shopfront type is also a Shopfront assembly, but with fewer openings and less visual transparency. Unlike a Shopfront, which is intended to attract customers in an active retail environment, Maker Shopfronts are intended primarily for industrial artisan businesses (artists, breweries, wineries, etc.).

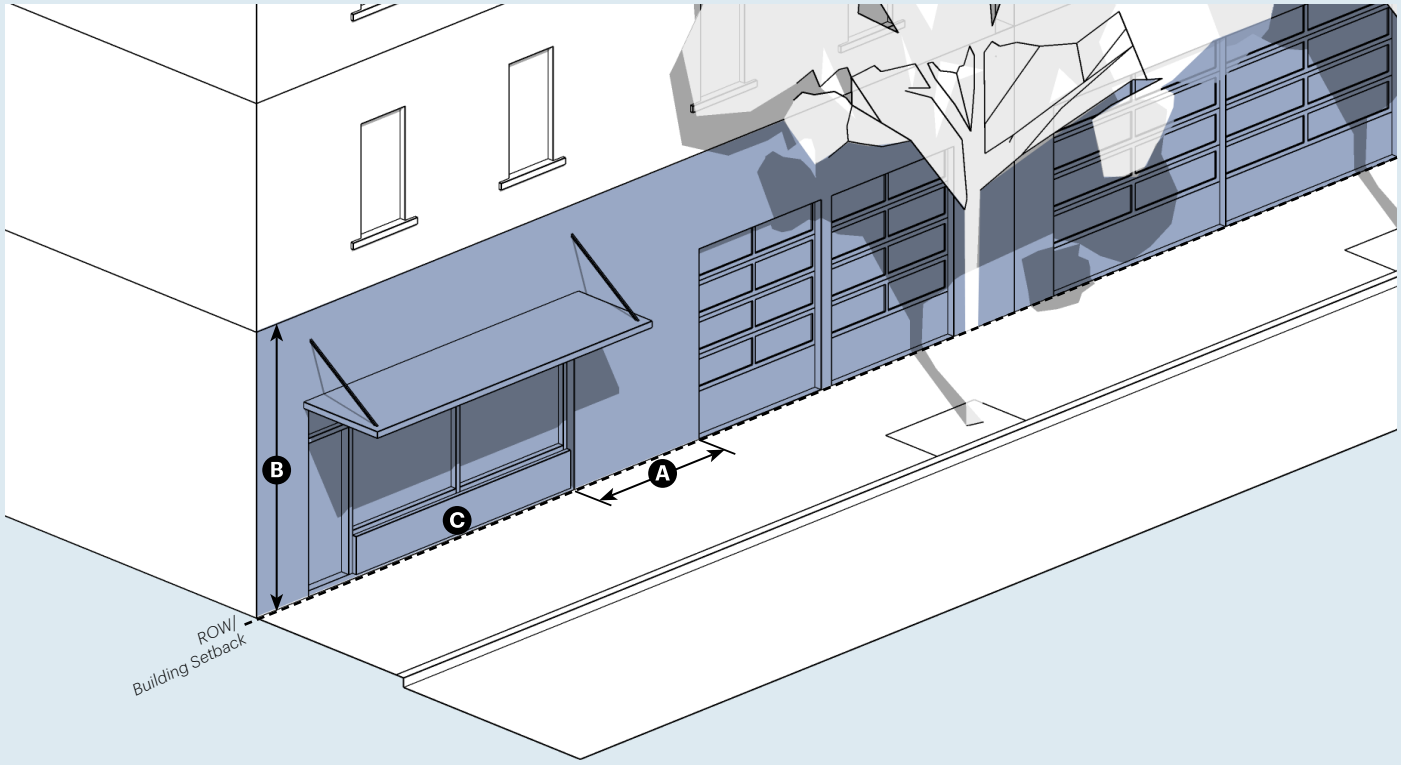
Example of a Maker Shopfront.

GUIDANCE

- The Maker Shopfront includes some glazing between the sidewalk and the horizontal expression line, but not as much as the Shopfront.
- A roll-down or sliding door(s) with or without glazing is a feature of this frontage type enabling pedestrian access directly into the space
- The roll-down or sliding door(s) can include super graphics or a mural.
- An awning or canopy that overlaps the sidewalk is often included providing additional identity and visual appeal.
- Awnings or canopies provide for business identity while contributing to the streetscape.
- A Shopfront base (bulkhead) contributes to a building's identity and design by emphasizing the window and display area.

Example Standards

Maker Shopfront



REQUIRED STANDARDS		
Distance between Glazing and/or Door(s)	At least 1'; Up to 12' depending on the building transparency requirement	A
Ground Floor Glazing between Sidewalk and Horizontal Expression Line	At least 30%	B
Depth of Recessed Entries	No max.	
Shopfront Base/Bulkhead (if used)	At least 6" to 48"	C

ADDITIONAL STANDARDS
Accordion-style doors/windows or other operable windows that allow the space to open to the street are allowed.
Awning and canopy materials are to be made of metal, wood, glass, slate, or concrete.

E **ESSENTIAL TOPIC**

2.2.F Terrace

PLACETYPE	
Neighborhood	●
Corridor	● ●
Center	● ●

INTENT

Where natural topography is variable or when ground floors are raised above grade, provide a consistent grade for entries to ground floor units or businesses.

DESCRIPTION

A Terrace is an elevated area for pedestrian circulation along the façade that typically provides access to multiple building entrances. Access to the elevated level(s) is provided via stairs and ramps. The type is used for retail, service, office uses, or housing to provide outdoor areas along the sidewalk and/or to accommodate an existing or intended grade change.

- The Terrace is intended to provide for comfortable seating and circulation without having to move chairs or other seating.

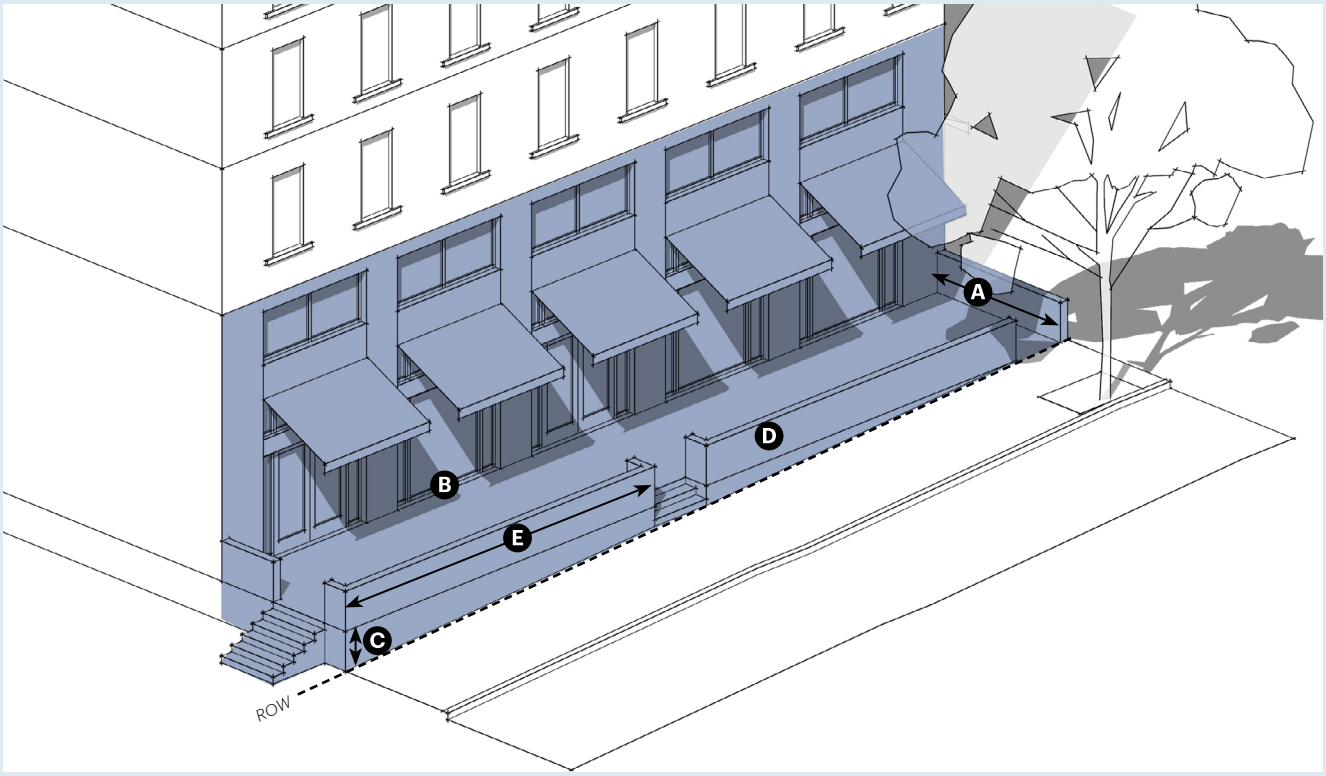
Example of a Terrace.

GUIDANCE

- A low wall along the streetscape edge can provide some seating opportunities and visually contribute to the streetscape.
- A low wall along the streetscape edge is often used as a design opportunity to match the building finishes or to match the streetscape finishes.
- For live/work, retail, service and restaurant uses, the Shopfront or Maker Shopfront frontage type can be used in coordination with the Terrace.
- A Shopfront base (bulkhead) contributes to a building's identity and design by emphasizing the window and display area.
- The overall Terrace can be divided for individual residential units and entries through landscaping in planters or containers, or it can be designed as one continuous seating and circulation area along the façade.
- Ramps can be integrated into the Terrace footprint in coordination with the adjacent sidewalk and public realm.

Example Standards

Terrace



REQUIRED STANDARDS		
Depth of Terrace, clear	At least 6' for residential and 10' for non-residential; up to 15'	A
Distance between Glazing	At least 1' or 2'	
Ground Floor Glazing between Sidewalk and Finished Ceiling Height	At least 75%	
Depth of Recessed Entries	1' to 5'	
Shopfront Base/Bulkhead	At least 6" to 24"	B
Finish Level above Sidewalk	1' to 3' depending on the context	C
Height of Low Wall	At least 24"; Up to 42"	D
Distance between Stairs	Up to 25'	E

ADDITIONAL STANDARDS
All nonresidential ground floor shops that front onto the Terrace must be accessed from the Terrace.
For live/work, retail, services and restaurant uses, the Shopfront or Maker Shopfront is required in conjunction with the Terrace.
The finished level of shops and/or housing along the Terrace is measured in relation to the finished level of the Terrace instead of the sidewalk along the street.

E **ESSENTIAL TOPIC**

2.2.G Forecourt

PLACETYPE	
Neighborhood	●
Corridor	○ ●
Center	○ ●

INTENT

Visually extend the public realm into the front of buildings to provide open space and additional active ground floor uses.

DESCRIPTION

A Forecourt is an open-air space that connects to the public sidewalk and hosts the building's primary entrance(s). This space is a visual extension of the public realm into the site to create a shared garden or courtyard space for housing or an additional shopping or restaurant seating area for retail and service uses. Fences or low walls sometimes enclose Forecourts from the street. The Forecourt occurs on one lot and is distinct from a plaza, which can be adjacent to multiple lots. The following building frontage types can be combined with the Forecourt: Stoop, Shopfront, Maker Shopfront, Gallery, or Arcade.

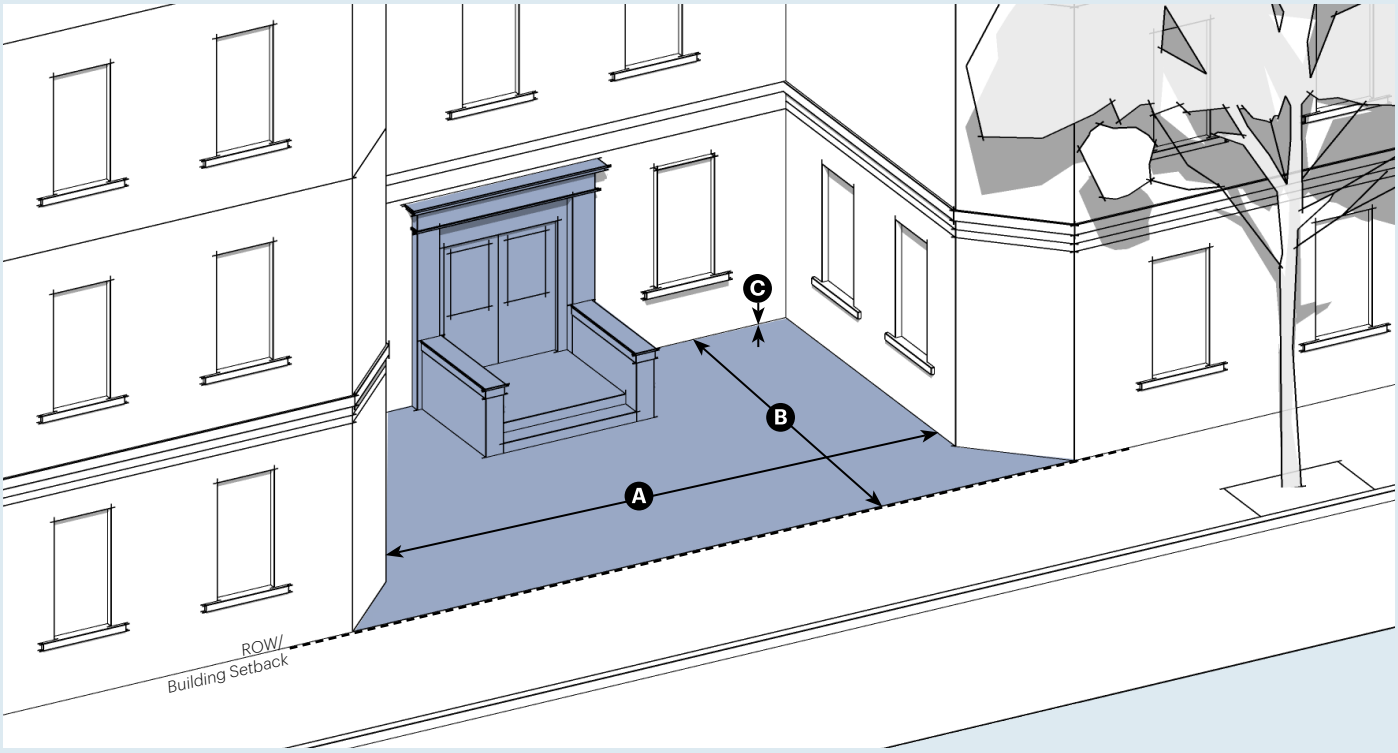
Example of a Forecourt.

GUIDANCE

- The Forecourt can be used to enlarge the adjacent sidewalk and pedestrian environment by extending it into the lot. If desired, a low wall can be used to define the edge of the Forecourt along the streetscape while emphasizing the pedestrian entry from the public sidewalk. The Forecourt is often used to group several business or unit entries at a common grade.
- The proportions and orientation of a Forecourt are intended for optimal solar exposure and user comfort.

Example Standards

Forecourt



REQUIRED STANDARDS		
Width, Clear	25' if 1 to 3 stories; 35' to 50' if 4 or more stories	A
Depth, Clear	15' to 50'	B
Finish Level above Sidewalk	Up to 12"	C
Along the ground floor of the Forecourt, the following building frontage types are allowed to encroach up to a total of one-fourth of the Forecourt's width: Stoop, Shopfront, Maker Shopfront, Gallery, or Arcade		

ADDITIONAL STANDARDS
Where low walls are used, they shall be at least 24" and not exceed 42" in height. Low walls are to be of same materials used on the primary building.
Forecourts may be utilized to group several entries at a common elevation in coordination with ground floor finish level standards.
Pedestrian access shall be provided from the public sidewalk.

E **ESSENTIAL TOPIC**

2.2.H Common Entry

PLACETYPE	
Neighborhood	●
Corridor	○ ●
Center	○ ●

INTENT

Provide a single, primary point of entry for a building with multiple units.

DESCRIPTION

A Common Entry type consists of a large opening in the façade that leads directly into the lobby or common space of the ground floor, which provides access to the individual units. The Common Entry is typically near the front lot line or within a Forecourt.

GUIDANCE

- The Common Entry is recessed (at least 18 inches) to provide shelter from the weather while opening the door but not so deep that it presents security issues (typically about eight feet maximum).
- The Common Entry can reflect a more residential character or commercial character depending on its physical context through the amount of glass used and the type of canopy (if used).
- Depending on its physical context, the Common Entry could include amenities for the building (e.g., leasing office, food service, gym).
- The Common Entry is typically prominent and distinct from the main façade through its materials and finishes.

CLOSER LOOK

Common Entry Size

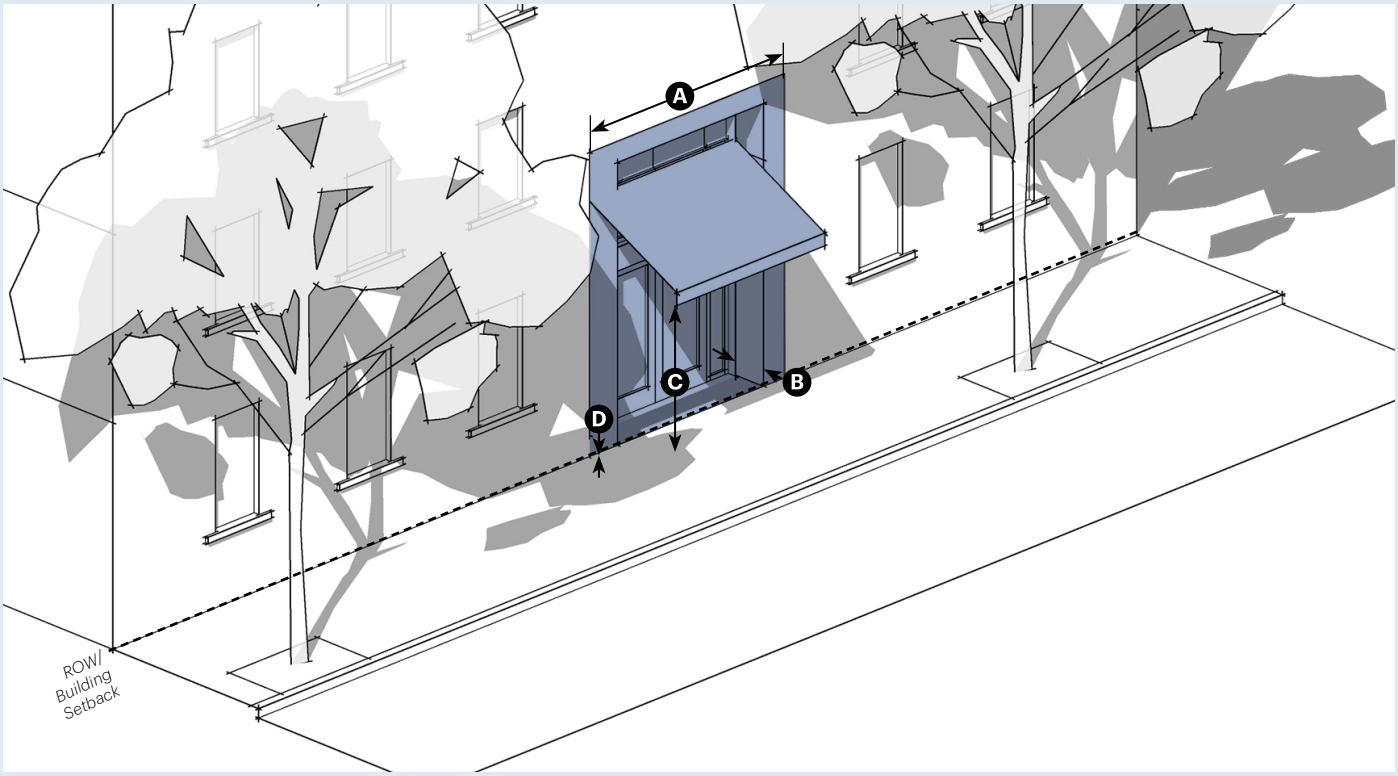
The Common Entry type can work on buildings as small as **house-scale** four-plexes up to multi-story **block-scale** buildings. Determining how wide or deep your Common Entry should depend on the building size and context.

In **house-scale** contexts, the width is typically between four feet and eight feet, a size that would look appropriate on a large house. Similarly, the depth is typically between one-and-a-half feet and four feet, enough room for occupants to stand out of the weather.

In **block-scale** contexts, the width is typically between 10 feet and 15 feet, enough to accommodate lobby entries that often provide views from the sidewalk into the ground floor amenities. The depth is typically either one-and-a-half feet, placing the entry closer to the streetscape, or six to eight feet, providing a comfortable area for seating and hardscape as a transition from the streetscape.

Example Standards

Common Entry



REQUIRED STANDARDS		
Width, Clear	5' to 15' depending on the scale of the building	A
Depth, Clear	1.5' to 8' depending on the context	B
Height, Clear	8' to 10' depending on the ground floor height	C
Finish Level above Sidewalk	0' to 4' depending on the context	D

ADDITIONAL STANDARDS
Entry doors are covered or recessed to provide shelter from the elements.
All doors face the street.

E **ESSENTIAL TOPIC**

2.2.I Stoop

PLACETYPE		
Neighborhood	●	●
Corridor	●	●
Center	○	●

INTENT

Provide a controlled single point of access to a building and/or for ground floor units near the sidewalk.

DESCRIPTION

A Stoop is a small-raised landing outside of the front door(s) to a building or unit. Stairs connect the Stoop directly to the sidewalk.

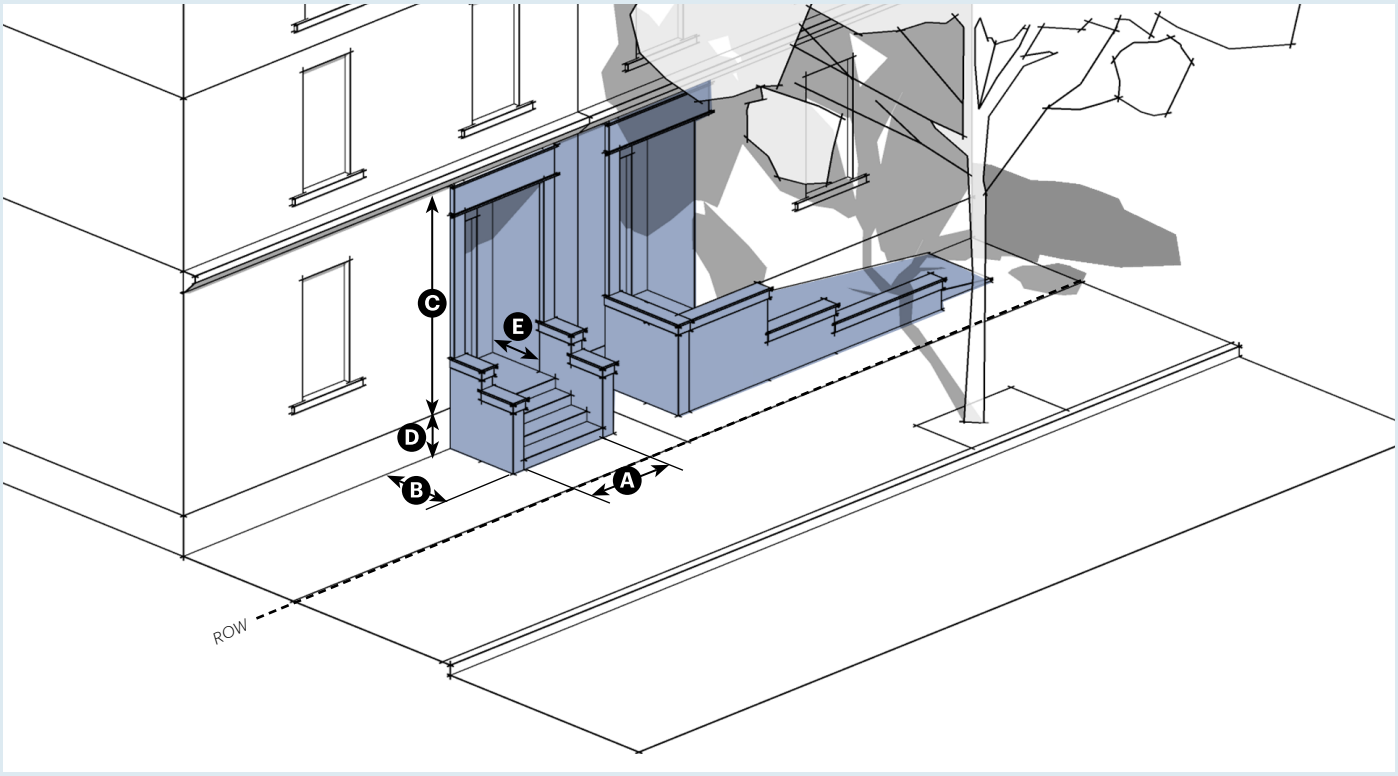
Example of a Stoop.

GUIDANCE

- The Stoop is elevated above the sidewalk to provide some visual privacy along the sidewalk-facing rooms.
- Low walls containing the ramp or stair provide an opportunity for enhancing the unit/building identity through coordinated materials and architectural expression of the associated building.
- If some privacy is desired while sitting out on the stoop, visibility to and from the sidewalk can be maintained through walls containing the ramp or stair, generally not exceeding 42 inches.
- The ramp or stair can be parallel or perpendicular to the adjacent sidewalk. A minor landscape area adjacent to the ramp/stair and the sidewalk provides a visually softer transition.
- When there is a habitable ground floor below the story accessed by the Stoop, a separate defined entrance for the lower-level unit will distinguish it from the Stoop entrance.

Example Standards

Stoop



REQUIRED STANDARDS		
Width, Clear	4' to 10' depending on the scale of the building	A
Depth, Clear	3' to 9' depending on the front setback available	B
Height, Clear	8' to 10' depending on the ground floor height	C
Finish Level above Sidewalk	1' to 6'	D
Recessed Stoop(s), Depth	1' to 5'	E
Distance Between Stoop Stair and ROW/Lot Line	3' to 10' depending on the existing pattern	

ADDITIONAL STANDARDS
Stairs are perpendicular or parallel to the building façade. Ramps are parallel to the building façade.
Entry doors are covered or recessed to provide shelter from the elements.
Gates are not allowed.
All doors face the street.

E **ESSENTIAL TOPIC**

2.2.J Patio

PLACETYPE		
Neighborhood	●	●
Corridor	●	●
Center	○	●

INTENT

Provide an individual at-grade entry and outdoor area for ground floor units.

DESCRIPTION

A Patio, sometimes referred to as a Dooryard, is a space outside of the front door of a building or unit that is defined by a low wall or hedge and extends alongside the façade. Patios are separated from each other and are typically at grade.

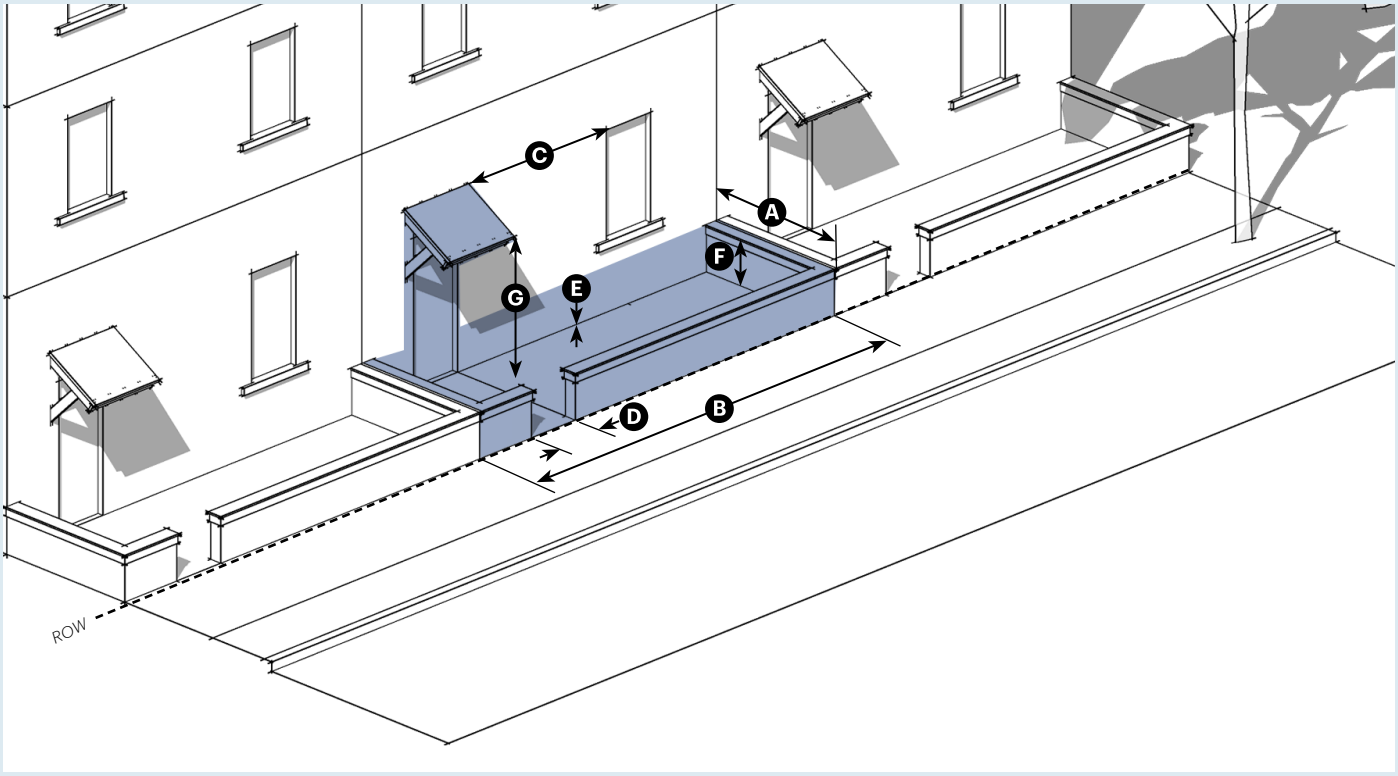
Example of a Patio.

GUIDANCE

- Patios provide access to the ground floor entry and are separated from adjacent Patios to provide semi-private space for each unit.
- A low wall helps physically define the area while maintaining visibility to and from the Patio along the streetscape.
- For live/work, retail, service and restaurant uses, the Shopfront or Maker Shopfront frontage type can be used in conjunction with the Patio.

Example Standards

Patio



REQUIRED STANDARDS		
Depth, Clear	At least 5'; Up to 10' max. depending on the space available for setbacks	A
Length, Clear	At least 15'	B
Distance between Glazing (Pilaster or Wall Width)	1' to 4'	C
Pedestrian Access	3' to 6' depending on the scale of the building	D
Finish Level above Sidewalk	Up to 12" to create a seamless public private realm	E
Height of Patio Fence/Wall above Finish Level	1' to 3'	F
Vertical Clearance of Covered Entry	7'-6" to 10' depending on the ground floor height	G

ADDITIONAL STANDARDS
Each Patio shall provide access to only one ground floor unit.
Patios shall include a covered entry, except for recessed entries.
Recessed entry shall be at least 18" deep.

E **ESSENTIAL TOPIC**

2.2.K Porch

PLACETYPE		
Neighborhood	●	○
Corridor	●	○
Center	○	

INTENT

Provide a covered outdoor area that protects the building entryway and helps define the architectural character of the building.

DESCRIPTION

The Porch is a fully covered structure that either projects (Projecting Porch) or is a part of the main façade of the building (Recessed Porch). It can be one to two stories and open on at least two sides.

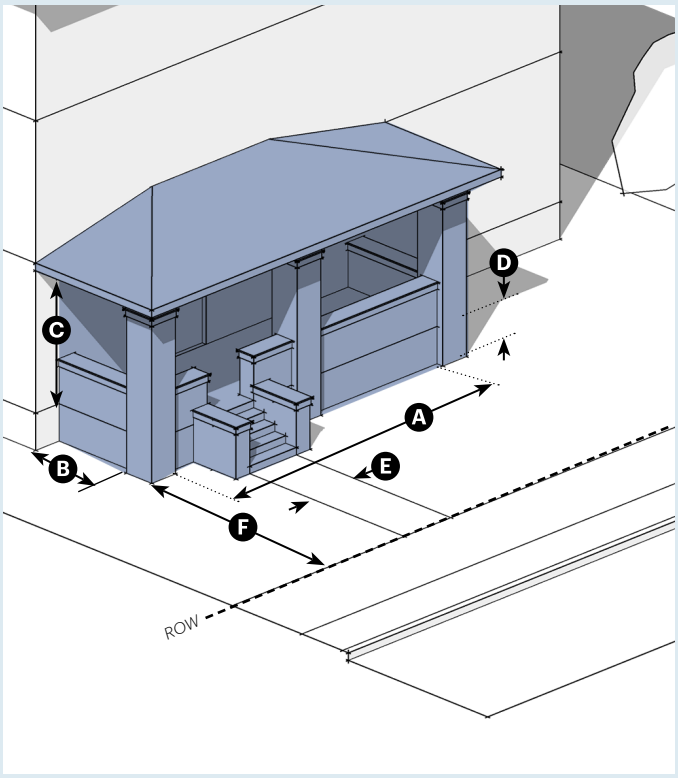
Example of a two-story Recessed Porch.

GUIDANCE

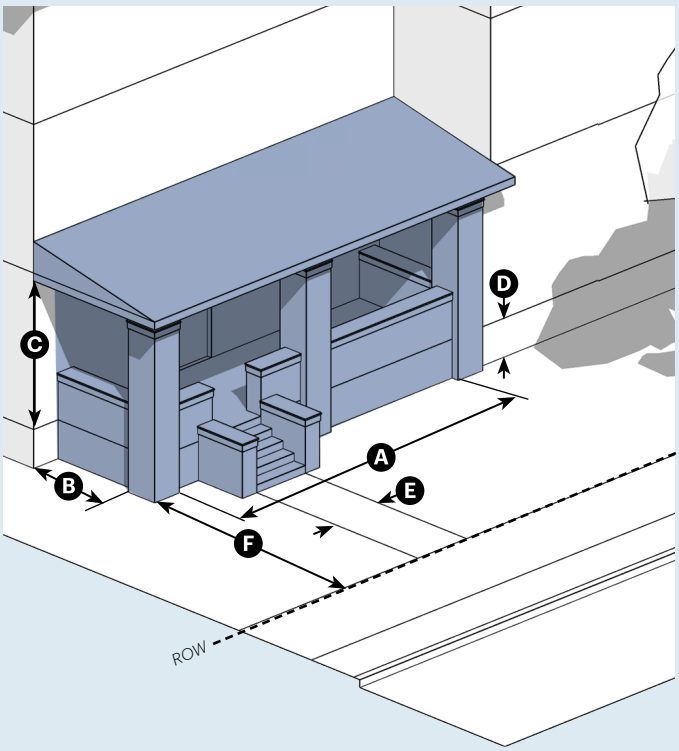
- A Projecting Porch projects beyond the building façade into the front setback, is open on three sides and has a roof.
- A Recessed Porch is open on only two sides and has a roof. Note that this frontage type provides for a portion of the building façade to encroach into the front setback (see photo at left for example of this).
- Porches are typically raised from the adjacent grade to provide a minimal level of visual separation from the streetscape and some privacy for the residents. Porches can be at grade when the distance between the porch and the sidewalk is enough that the minimal level of visual separation from the streetscape is not necessary (at least five feet).
- The yard sometimes includes a fence along the front and/or side street.
- The Porch roof can be of various types (flat, hipped, shed, gable).
- The Porch depth can vary but is sufficient to provide space for seating and pedestrian access (typically minimum three feet).

Example Standards

Projecting Porch



Recessed Porch



REQUIRED STANDARDS		
Width, Clear	At least 10'; Up to 15' depending on the context	A
Depth, Clear	At least 6'; Up to 12' depending on the area available	B
Height, Clear	8' to 10' depending on the ground floor height	C
Stories	1 to 2 stories	
Finish Level above Sidewalk	1' to 6'	D
Pedestrian Access	At least 42"	E
Distance between Porch and ROW/Lot Line	5' to 10' depending on the existing pattern on the block face	F

ADDITIONAL STANDARDS
Porch shall be open on two sides and have a roof.
Pedestrian access allowed at either the front or either side of Porch.

E **ESSENTIAL TOPIC**

2.3 Streetscape Frontage Design

PLACETYPE		
Neighborhood	●	●
Corridor	●	●
Center	●	●

INTENT

Streetscapes along all streets and community spaces are coordinated with the building frontage types in each physical context (Neighborhoods, Corridors, Centers) to generate a cohesive and appealing public realm.

GUIDANCE

There is a wide variety of streetscape types but they have been summarized into three types for the Handbook: Neighborhood Streetscapes, Mixed-Use Streetscapes and Paseos.

NEIGHBORHOOD STREETSCAPES

- This type provides a landscaped area on each side of the sidewalk: one landscaped area along the parcel edge between the front of the building and the sidewalk; the other landscaped area along the curb between the sidewalk and the street. In **house-scale Neighborhoods**, the planters should be continuous. In **block-scale Neighborhoods** and in **Centers** and **Corridors**, landscaping should be in landscaped areas, continuous or not. The planters should be wide enough to accommodate street trees, typically about five feet wide. If not continuous, the planters should be at least as long as they are wide. The planters can be at sidewalk level with planting or tree grates, or in a raised planter that will need to be setback from the curb by at least 18 inches, further reducing sidewalk width. In all cases, the planter should be located along the curb to provide a buffer for pedestrians from the adjacent street while maintaining the pedestrian area along the sidewalk.
- This streetscape frontage type is recommended in: **Neighborhoods, Corridors** and flex areas of **block-scale Centers**.

Example of a Neighborhood Streetscape.

MIXED-USE STREETSCAPES

- This type provides a wider sidewalk than the Neighborhood Streetscape and a planter, planting in containers and/or seating along the curb, placing the sidewalk directly along the front of each abutting parcel. This type assumes a high amount of foot traffic as compared to the Neighborhood Streetscape. In **block-scale Centers** and **Corridors**, landscaping should be in planters. The planters should be wide enough to accommodate street trees, typically about five feet wide and at least as long as they are wide. The planters can be in containers or at sidewalk level with planting, or tree grates in a raised planter which reduces sidewalk width.
- This streetscape frontage type is recommended in: flex areas of **Neighborhoods** and **house-scale Corridors**, **block-scale Corridors** and **Centers**.

Example of a Mixed-Use Streetscape.

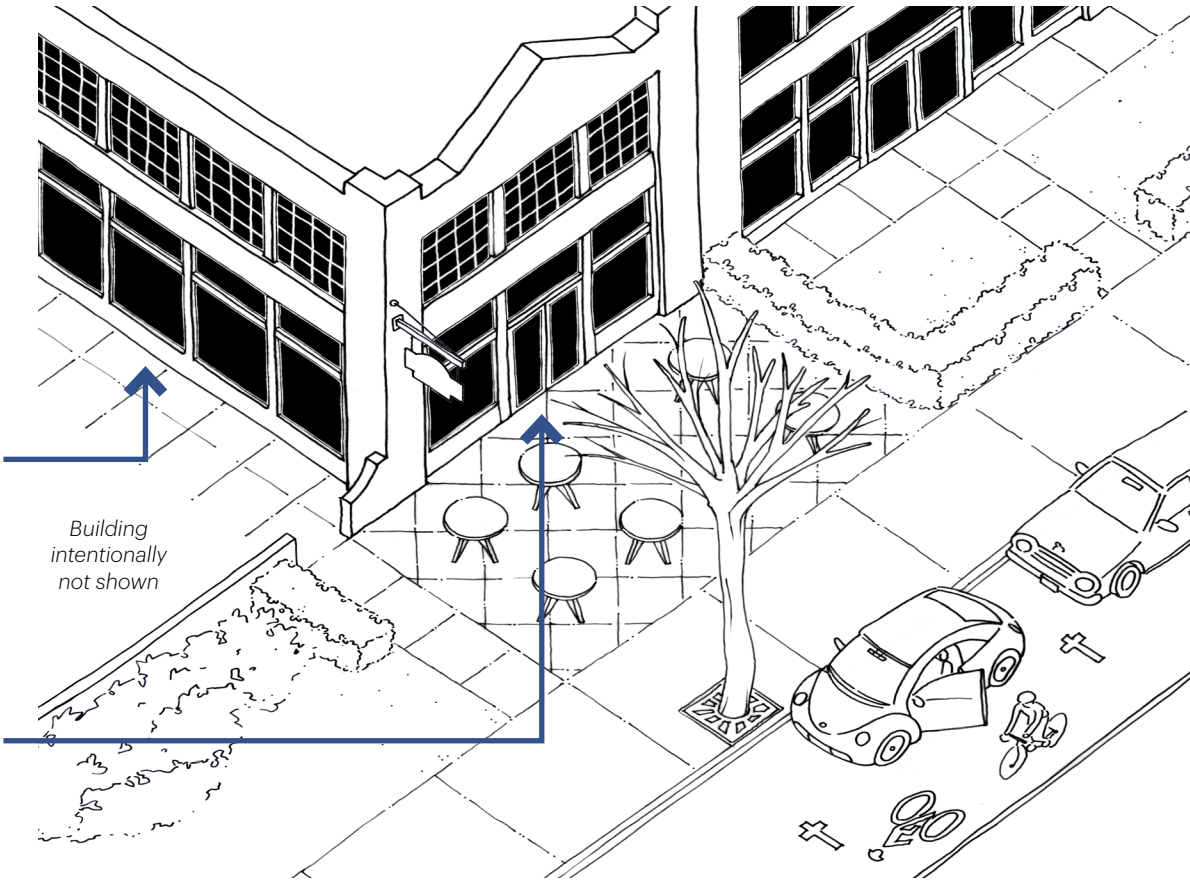
PASEOS

- This type is typically used to provide access from one side of a block to the other. This type is recommended for long blocks (e.g., over 600 feet) to increase pedestrian options. The Paseo includes planting along both sides with a path or sidewalk in the center. Depending on where this type is being applied the Paseo can take different forms: in **Neighborhoods**, it is often designed as an informal path and in **Corridors** or **Centers**, it is often designed as a hardscaped area with planting in containers. Lighting is recommended along the Paseo in addition to the lighting of adjacent buildings.
- This streetscape frontage type is recommended in all Placetypes (**Neighborhoods, Corridors** and **Centers**).

Example of a Paseo.

Streetscape Frontage

- **A** *Ground floor design*
- **B** *Building frontage with pedestrian access oriented towards the street*
- **C** *Activated ground floor adjacent sidewalk space*



PEDESTRIAN ACCESS

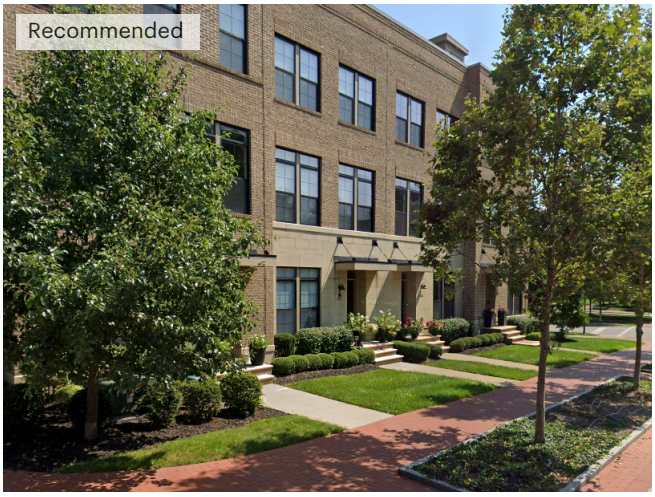
- Buildings benefit from having a clearly defined primary entrance close to the sidewalk. This can be achieved by a combination of building frontage type(s), prominent architectural features, signage, use of materials and other strategies as appropriate.
- Building or shop entries in **Centers** should be frequent, typically not further than 50 feet between entries to promote an active streetscape. Building or unit entries in **Neighborhoods** and **Corridors** should be oriented to the sidewalk or a shared space along the side or rear of the lot.
- Where a courtyard, forecourt or other shared space connects to the public sidewalk, buildings around the shared space should orient their entries along that shared space or the public sidewalk whichever is closer.

CLOSER LOOK

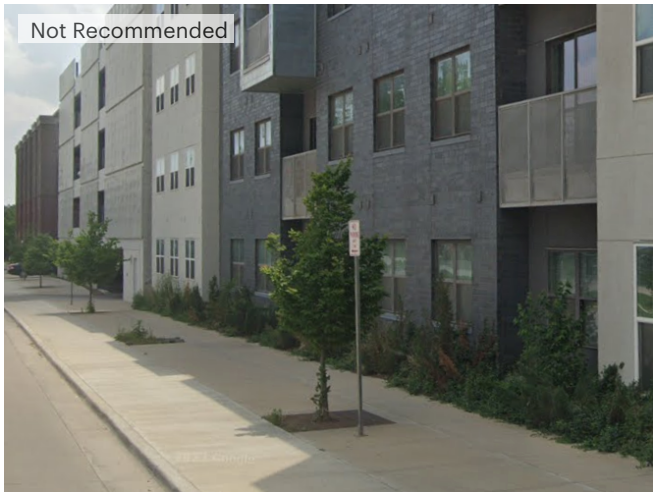
Active Ground Floor Uses

Active uses are uses such as service, retail, restaurants, gyms, amenity areas, galleries and workshops that want to be located on the ground floor, along the streetscape. Active uses help to activate the public realm by allowing pedestrians to observe activities taking place in the ground floor of buildings. Office uses can also be complementary to an active ground floor if they are the type of office that does not mind being exposed to pedestrians viewing into their space such as real estate offices. However, medical offices typically do not want such visibility and will use curtains to block viewing from pedestrians.

Guidance Example: Neighborhood Streetscapes

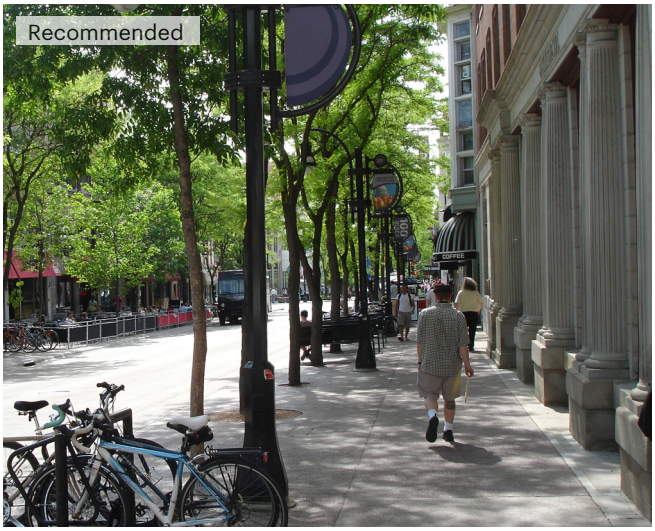


Example of sidewalk flanked by planter areas; one along the curb with street trees and the other along the front of the building.

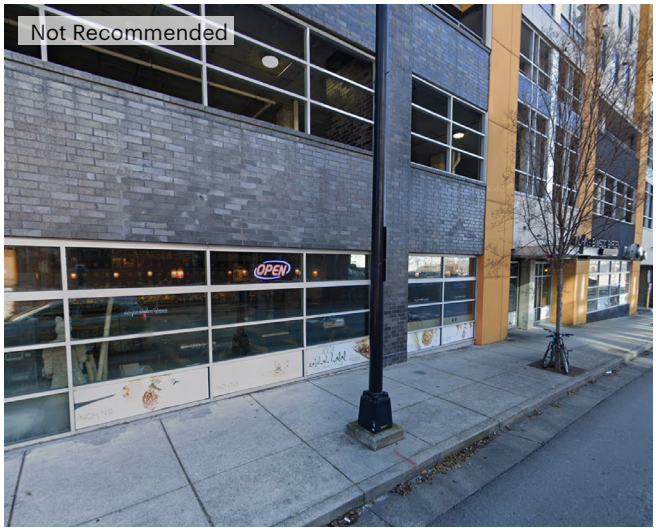


Example of monolithic curb gutter and sidewalk with tree wells and a small planter along the front of the building.

Guidance Example: Mixed-Use Streetscapes



Example of wide sidewalk with tree wells for canopy trees along the curb and landscaping along the fronts of buildings.



Example of narrow sidewalk with few tree wells and non-canopy street trees.

Guidance Example: Paseos

Example of pedestrian Paseo used to create new blocks. Paseos connect to internal circulation on sites and to the sidewalk along intersecting streets or open spaces.

Example of narrow walkway with landscape planters ending in a parking lot instead of the other side of the block.

CLOSER LOOK

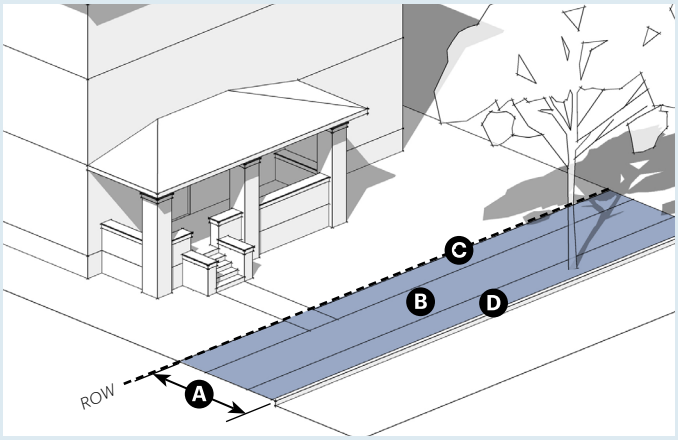
Sidewalk Elements

Standardizing sidewalk elements for new projects represents a baseline foundation for streetscape design. To bring streetscapes to life and create places where people want to shop and gather, planners can further coordinate streetscape planning by establishing a catalog for streetscape furniture such as streetlights, benches and bicycle racks that developers must select from, or establishing modest fees for streets and open space improvements that communities can implement in a more comprehensive way.

Example Standards

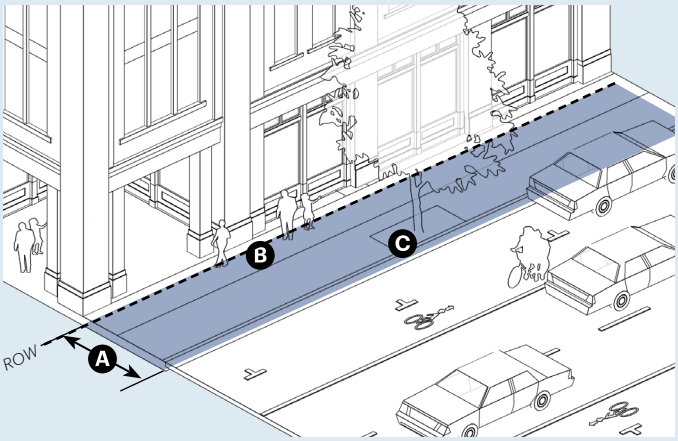
Neighborhood Streetscapes

REQUIRED STANDARDS		
Total Width	12' to 15'	A
Walkway/Pedestrian Zone Width	5' to 6'	B
Planter/Furnishing Zone Width	2' to 4'	C
Streetside Planter/Furnishing Width	5' to 6'	D



Mixed-Use Streetscapes

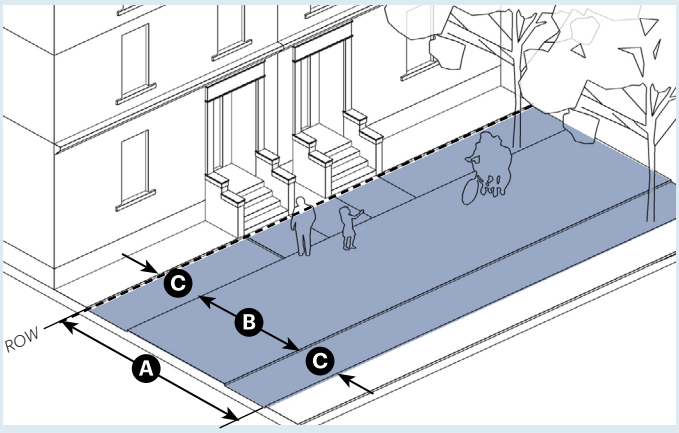
REQUIRED STANDARDS		
Total Width	10' to 15'	A
Walkway/Pedestrian Zone Width	6' to 10'	B
Planter/Furnishing Zone Width	4' to 5'	C

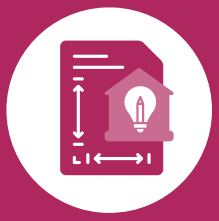


Paseos

REQUIRED STANDARDS		
Total Width[1]	20' to 25'	A
Walkway/Pedestrian Zone Width	10' to 15'	B
Planter/Furnishing Zone Width	5' to 7'	C

1 Local Fire Department requirements may exceed recommended values.





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3.0 Why Building Design Matters

THE DESIGN OF INDIVIDUAL BUILDINGS SHAPES AN APPEALING PUBLIC REALM AND COMPLEMENTS NEIGHBORING BUILDINGS.

Individual buildings are designed in response to the intended physical scale and context.

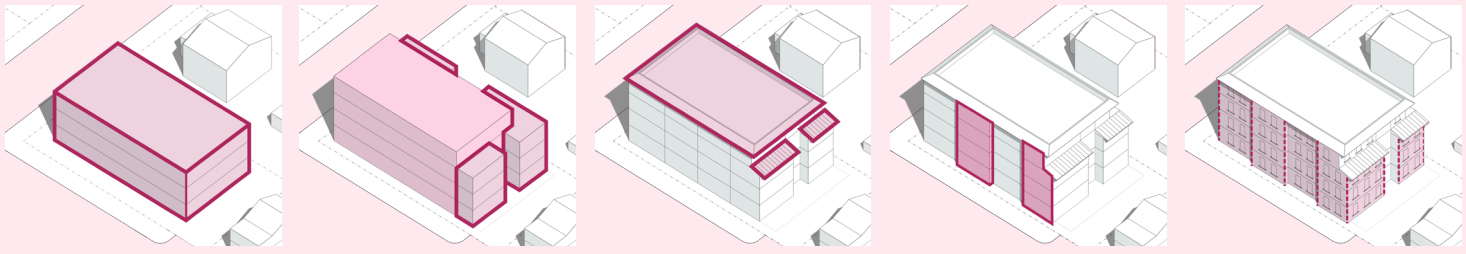
The massing and façade design of individual buildings contributes not only to the attractiveness of the buildings but also to how those buildings shape the public realm and play a positive role in creating an active environment.

Building design starts with refining the overall building envelope (as defined by the local zoning code) into appropriate massing and roof forms for its local context, particularly by reducing the perceived building size and scale near smaller buildings. Then, massing features are included in the building design to emphasize certain portions of the building. Building design then shifts to organizing elements on the façade(s) of the building along the public realm to provide visual rhythm and continuity along the streetscape. This process is illustrated in the Building Design Process below.

In addition to building design standards, supplemental building type standards shape and refine the overall building envelope in predictable ways to articulate form at the scale of individual buildings and at the scale of an area (e.g., neighborhood, corridor, center). Building types do this by presenting a range of building sizes and forms for each zoning district where they are required. An applicant can choose from the building types allowed in a zoning district and know that the form does not need any further review or decision making by the jurisdiction. The neighbors know the forms that they can expect and that those forms are contributing to the existing or intended form of the area.

CLOSER LOOK

Building Design Process



Overall building envelope → *Refine building massing for adjacencies* → *Articulate roof forms* → *Apply massing features* → *Organize façade elements*

DESIGN PRINCIPLES

The following principles inform the guidance and example standards in this chapter.

(E) 3.1 Building Massing

- The mass of the building is shaped and scaled to fit in the context of the surrounding built forms (existing or yet to be realized).
- Transitions between **house-scale and block-scale** buildings are not abrupt and purposefully designed.
- Overall massing is refined by shaping the roof and adding massing features that reinforce the building's character and identity.
- Massing standards apply to all sides of a building and are dependent on adjacencies.

(E) 3.2 Façade Articulation

- Façades are organized by a system of bays to generate coherent and visually pleasing buildings along public or private streetscapes (street, passage, open space).
- Façade design, or the organization of elements on a façade, is intended to minimize or avoid the need for vertical and horizontal plane-breaks (e.g., recesses/ projections) that are typically included in the attempt to make a building more visually pleasing and to reduce cost impacts.
- Façade length is regulated to avoid long façades (e.g., over 80 feet) that apply unnecessary articulation in an attempt to visually decrease their length. Instead, façade design on long buildings is intended to generate multiple, distinct façades on a single building.

(S) 3.3 Building Types

- Building types offer predictability of form and size for neighbor and builder alike.
- **House-scale** building types already present an overall form and size that fits their context, typically avoiding the need for massing adjustments.
- Allowed building types for each zoning district are specified based on the context and intended physical character to address compatibility with existing buildings.

(E) **ESSENTIAL TOPIC**

(S) **SUPPLEMENTAL TOPIC**

E ESSENTIAL TOPIC

3.1 Building Massing

PLACETYPE		
Neighborhood	○	●
Corridor	●	●
Center	●	●

INTENT

Shape the overall form of a building to fit within and complement the physical context of its surroundings.

GUIDANCE

Development standards in the local zoning code define the overall building envelope, typically through height and setback standards. Building design refines the overall building envelope into a form that responds to its context and contributes to the built form patterns of the area.

ADJACENCY ADJUSTMENTS

- Adjacency adjustments are applied when new development abuts a parcel with **house-scale** building(s) or historic building(s).
- Massing transitions are achieved through stepbacks on upper floors of the **block-scale** building and/or by wing additions to the main body of the building.
- Where appropriate, reduced volumes through upper story stepbacks can be added to the remaining areas of the upper story to maintain allowed densities.

ROOF FORMS

- Roof forms visually reinforce the building's massing and contribute to the clear identification of the top of the building.
- Roof forms follow the prevalent pattern of roof forms in the surrounding one to two blocks to fit the new building(s) into the context.

MASSING FEATURES

- Massing features are applied to larger **block-scale** buildings (e.g., over 80 feet long or 4 stories), especially along public realm facing façades, to add visual interest without visually complicating the design.
- Massing features are purposeful in their use and design.
- Massing features are perceived as integral elements of the building.

E **ESSENTIAL TOPIC**

3.1.A Adjacency Adjustments

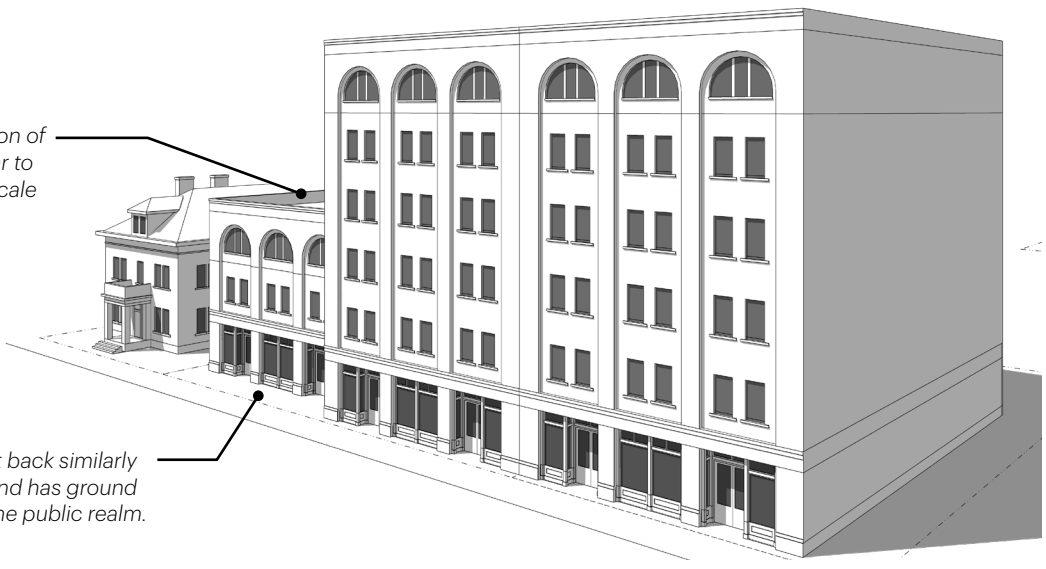
PLACETYPE		
Neighborhood	●	●
Corridor	●	●
Center	●	○

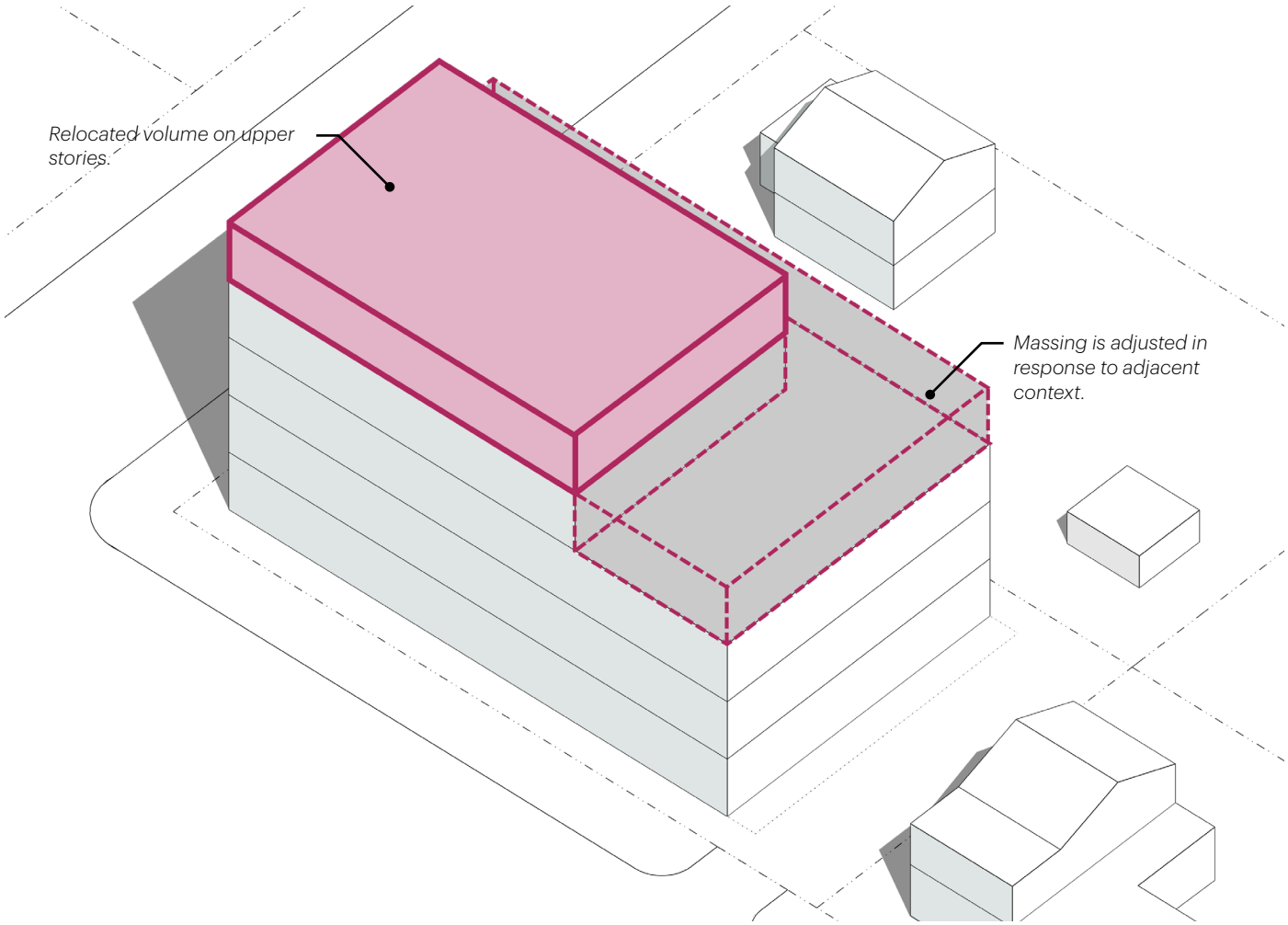
INTENT

Refine the massing of individual buildings through scale and size transitions sensitive to adjacent buildings.

GUIDANCE

- Adjacency requirements are used to reduce **block-scale** building massing to **house-scale** massing where the building abuts parcels with **house-scale** or historic buildings. In other words, **block-scale** buildings transition to **house-scale** volumes within a specified distance of a shared property line.
- The transition area is where the massing adjustments occur, both along the front of the new building and the side abutting the **house-scale**/historic building. This area starts at the setback line as defined by the local development standards. It is important to identify the transition area in the standards because it also clearly identifies where the building can be as large as the zoning allows.
- The height of the adjusted massing is similar to that of the adjacent **house-scale**/historic building. Next to a historic building, the front of the building is also adjusted to be of similar scale in both height and width.
- Transitions in scale and size can result in reductions of the maximum zoning envelope. To regain that loss of volume, standards can allow for that volume to be placed on upper stories away from **house-scale** buildings and/or the addition of wings to the main body of the building.





CLOSER LOOK

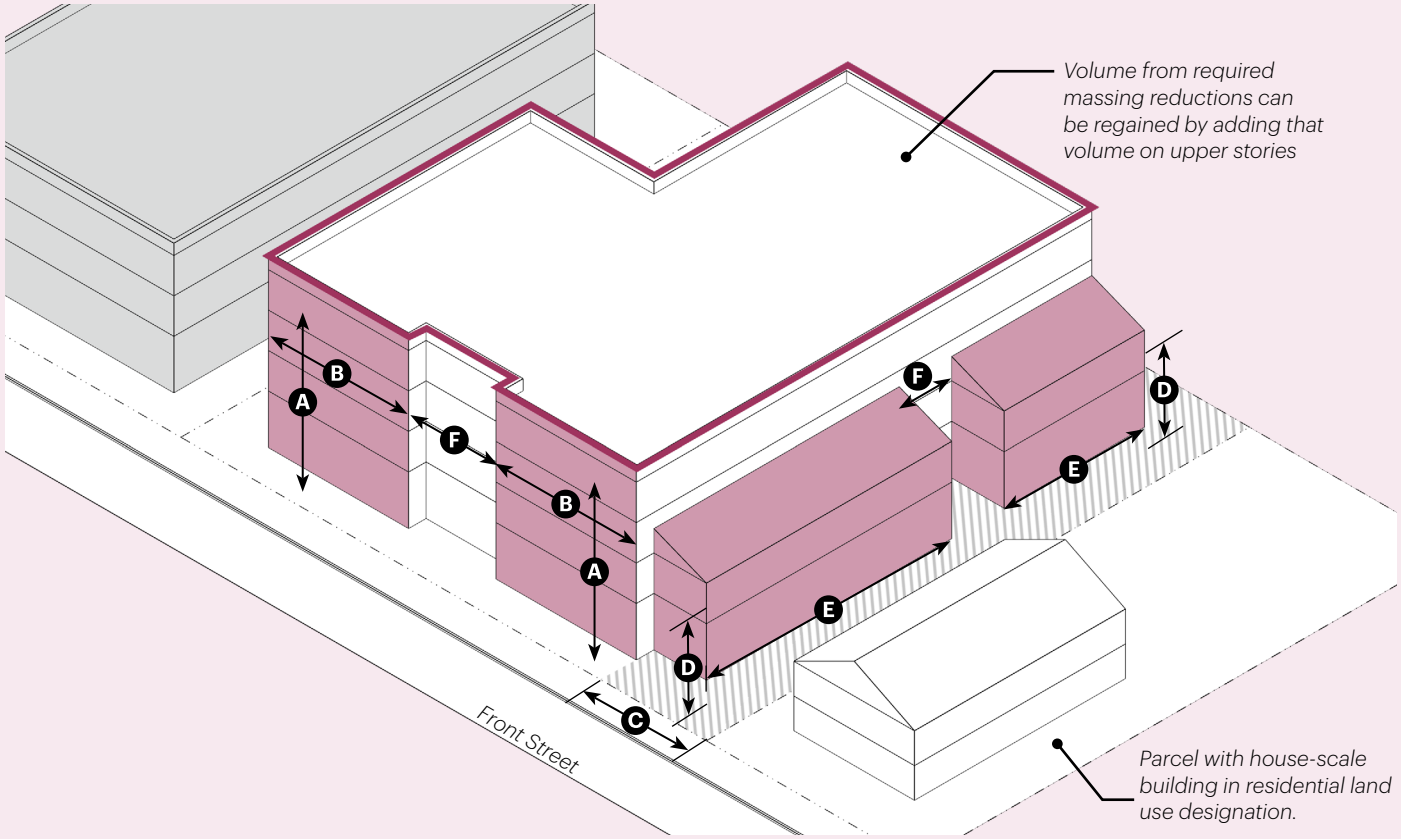
How to Relocate Building Volume

The volume that is reduced due to adjacency adjustments to building massing can be regained by strategically replacing that volume elsewhere on the building. It is important to note that regaining reductions in volume is more easily attainable (i.e., feasible) if it is done within the parameters of the construction type (e.g., not needing to add an elevator because of the additional floor or changing the fire rating because the building height now exceeds 85 feet).

- In **block-scale Centers, Corridors** and **Neighborhoods**, reductions from the building volume can be regained by placing that volume on upper stories away from **house-scale** buildings.
- In **house-scale Centers** and **Corridors**, reductions from the building volume can be regained by placing that volume on upper stories away from **house-scale** buildings and/or the addition of wings to the main body of the building.
- In **house-scale Neighborhoods,** reductions from the building volume can be regained by the addition of wings to the main body of the building.

Example Standards

Adjacency Adjustment: Adjacent to House-Scale Building

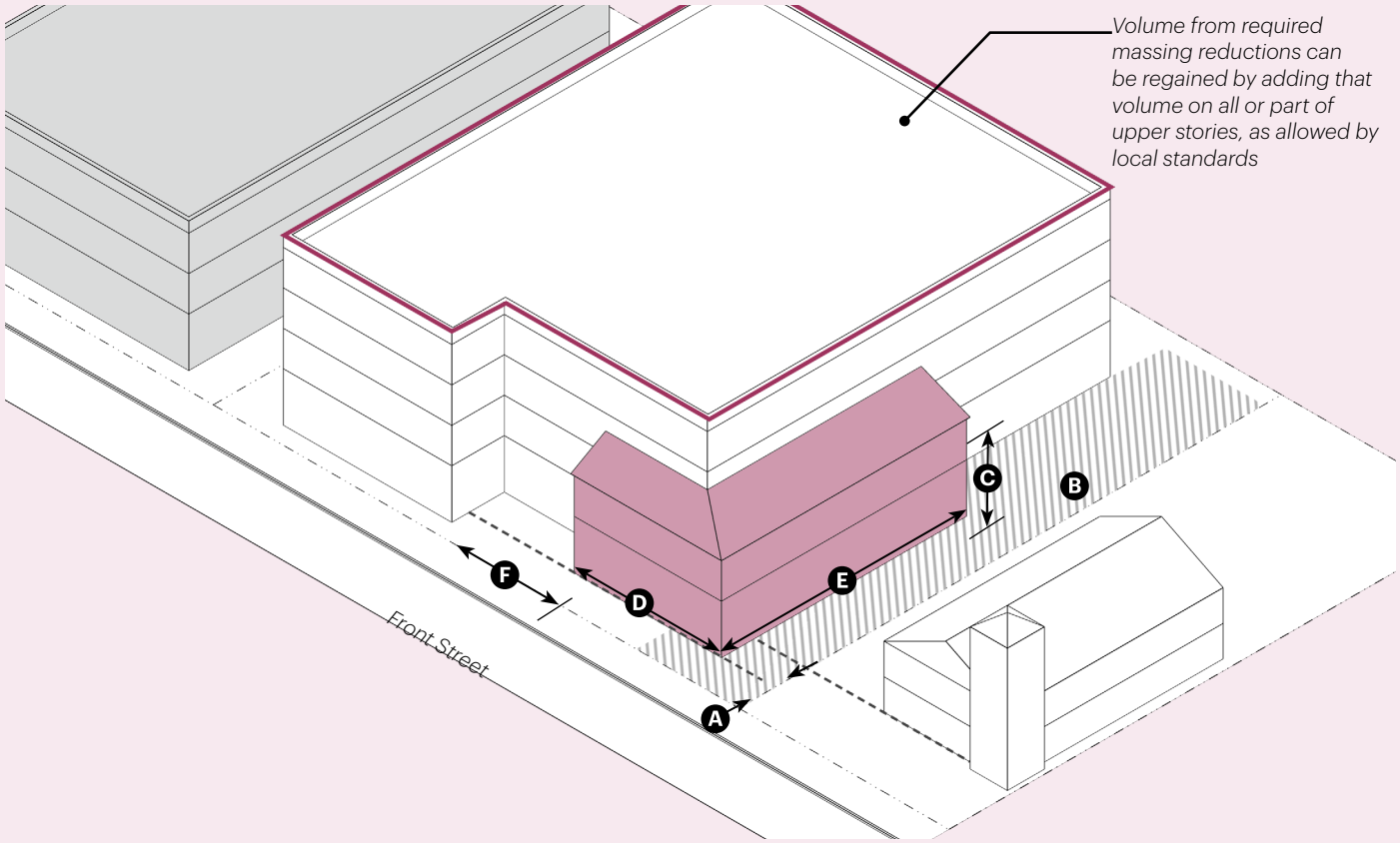


REQUIRED STANDARDS		
Adjacent to House-Scale Building		
Front of New Building		
Height	Per local development standard, except up to 1 additional story to regain volume from required massing reductions	A
Width	Up to 10% more than existing adjacent building	B
Abutting Side of New Building		
Transition Area	Up to 30' from shared lot line in coordination with required side setback.	C
Height	At least same height and up to 10% more than existing adjacent building	D
Length	Up to 10% more than existing adjacent building	E

ADDITIONAL STANDARDS	
Where separation between volumes occurs, the separation shall be at least 10'.	F
Reductions in allowed zoning envelope can be located elsewhere on the building in compliance with all standards.	
Massing features apply in transition areas, except along side lot lines.	

Example Standards

Adjacency Adjustment: Adjacent to Historic Building



REQUIRED STANDARDS		
Adjacent to Historic Building		
Transition Area		
Front	At least 5' to 10' from main façade of historic building in coordination with required front setback.	A
Abutting Side	At least 20' to 30' from shared lot line in coordination with required side setback.	B
Adjusted Massing		
Height	Up to 10% more than existing historic building.	C
Width		D
Length		E

ADDITIONAL STANDARDS	
Where separation between volumes occurs, the separation shall be at least 15'.	F
Reductions in allowed zoning envelope can be located elsewhere on the building in compliance with all standards.	
Massing features apply in transition areas, except along side lot lines.	

E ESSENTIAL TOPIC

3.1.B Roof Forms

PLACETYPE	
Neighborhood	●
Corridor	●
Center	●

INTENT

Relate new buildings to their physical surroundings, enhance the building massing and identity.

GUIDANCE

- Regulating roof forms provides for the orderly arrangement of rooflines in a manner that reinforces established or intended physical patterns of the area.
- Roof form shapes the building massing to complement the building's design and identity. Allowed roof forms are generally based on the prevailing pattern and climate of the area and can be allowed by zone or by building type (if used).
- **House-scale** building roof forms help to frame the streetscape by adding visual variety and interest along the tops of buildings.
- Applied mansard forms (e.g., projecting from the building **façade**) and other artificial rooflines that do not connect elevations and are not an integral component of the architectural design are not recommended.

FLAT ROOF

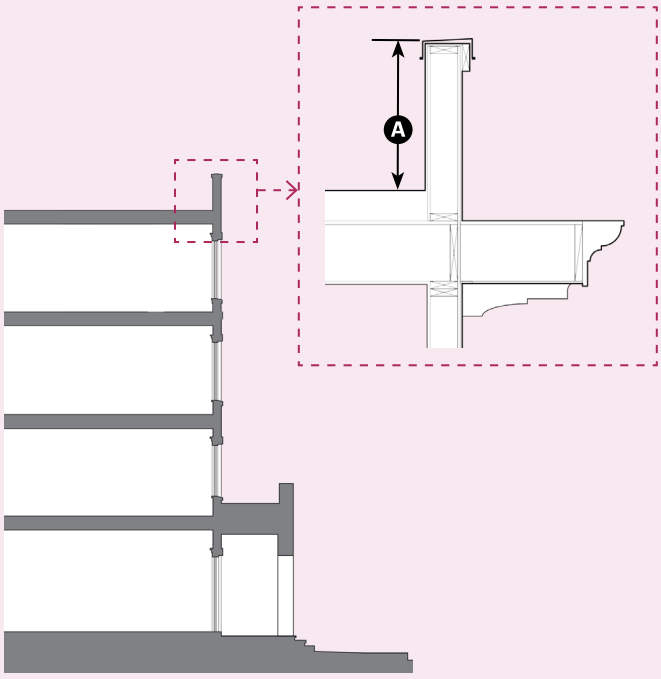
- Flat roofs are compatible in both **house-scale and block-scale** building contexts.
- Flat roofs include a parapet for safety purposes and to conceal roof top equipment. The parapet is of similar material and finish as the building façade.
- Flat roofs can be designed with a sloped parapet to look like a pitched roof. In areas with a prevalence of pitched roof forms, this is a cost-effective approach for both **house-scale** buildings and **block-scale** buildings up to five stories.

PITCHED ROOF

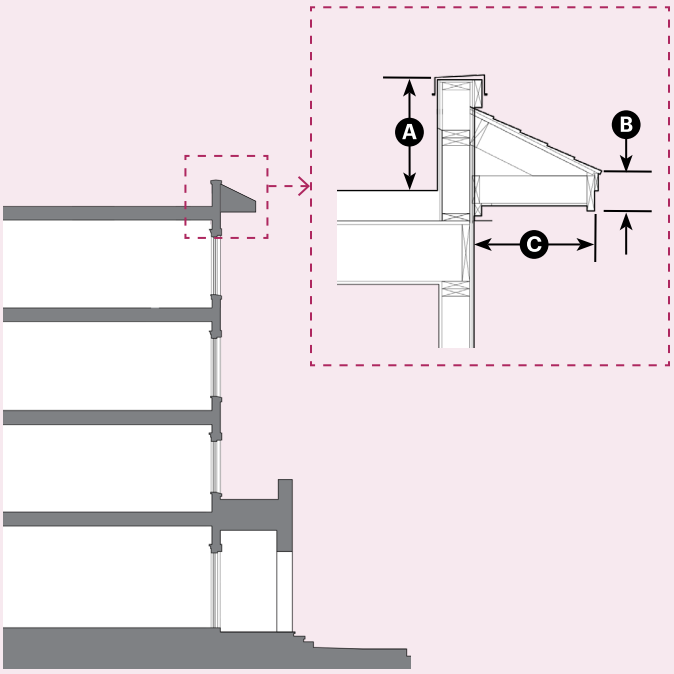
- The differing shapes of pitched roofs can be categorized into hip roofs, gable roofs, shed roofs and mansard roofs.
- Hip and gable roofs are typically applied to **house-scale** buildings.
- Shed roofs can be applied to both **house- and block-scale** buildings if this roof type is prevalent, or intended, in the area. The shed roof is typically used on smaller massing and wings, or as the primary roof on **house-scale** buildings.
- Mansard roof forms are compatible on buildings that are three stories or more in both **house- and block-scale** building contexts.
- Mansard roofs are an effective way to minimize the visual massing of a larger building while allowing substantial buildout of the top floor(s).
- The pitch of the roof depends on the building's architectural style.
- Eaves can be flush (i.e., eave projection is 0 inches) depending on the building's architectural style (e.g., contemporary, industrial).
- Buildings with pitched roofs can encourage better use of the maximum height available by excluding the height of the pitched roof from the overall building height (if the roof space is not habitable).

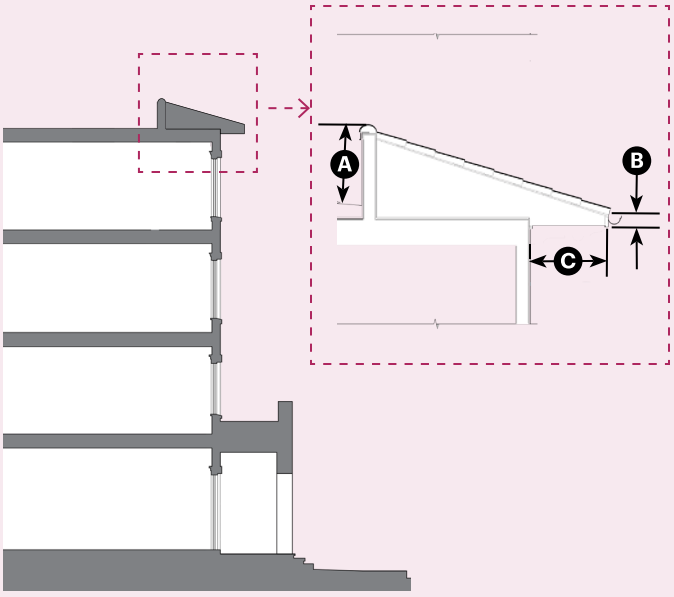
Example Standards

Flat Roof with Parapet



Flat Roof with Sloped Parapet



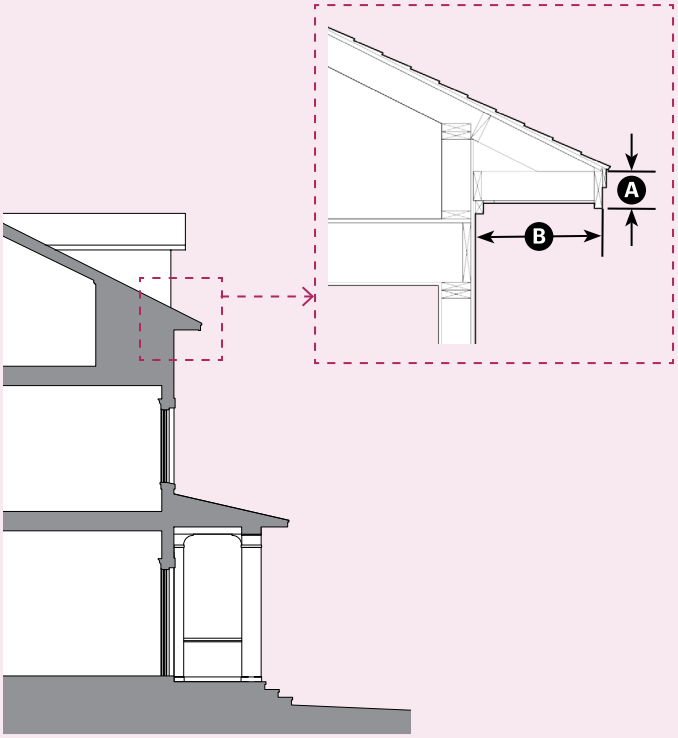


REQUIRED STANDARDS			
	Flat	**Sloped Parapet**	
Parapet[1]			
Height	At least 30"	At least 30"	A
Eave			
Height	N/A	At least 6"	B
Projection	N/A	At least 12"	C

1 Check local building code for requirements when parapet is used as railing on occupiable roof

Example Standards

Pitched Roof

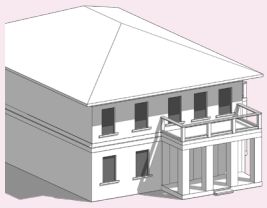


REQUIRED STANDARDS		
Eave		
Height	At least 0" to 6"	A
Projection	At least 0" to 8"	B

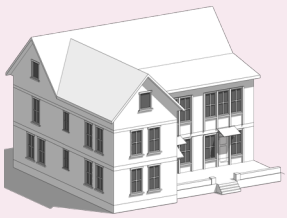
ADDITIONAL STANDARDS
Ends of gable and shed roofs shall be finished to match nearest wall finish and materials or can be left open to expose the structure.
Dormers are allowed on pitched roofs.
Dormers shall be setback 12" min. from building façade.
Distance between dormers shall be wider than dormers.
Width of dormer windows shall not exceed the width of windows on lower floors.

CLOSER LOOK

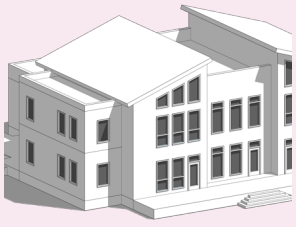
Types of Pitched Roofs



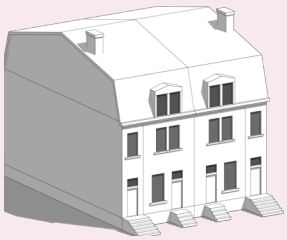
Hip
This type has all sides of the roof slope downward to the walls, usually with a gentle slope.



Gable
This type has at least one flat end called a "gable."



Shed
This type is a single-pitched roof. It is commonly set at a steep pitch and often used in combination with other roof forms.



Mansard
This type has two slopes on each of its sides, with the lower slope at a steeper angle than the upper slope.

E ESSENTIAL TOPIC

3.1.C Massing Features

PLACETYPE	
Neighborhood	●
Corridor	○ ●
Center	○ ●

INTENT

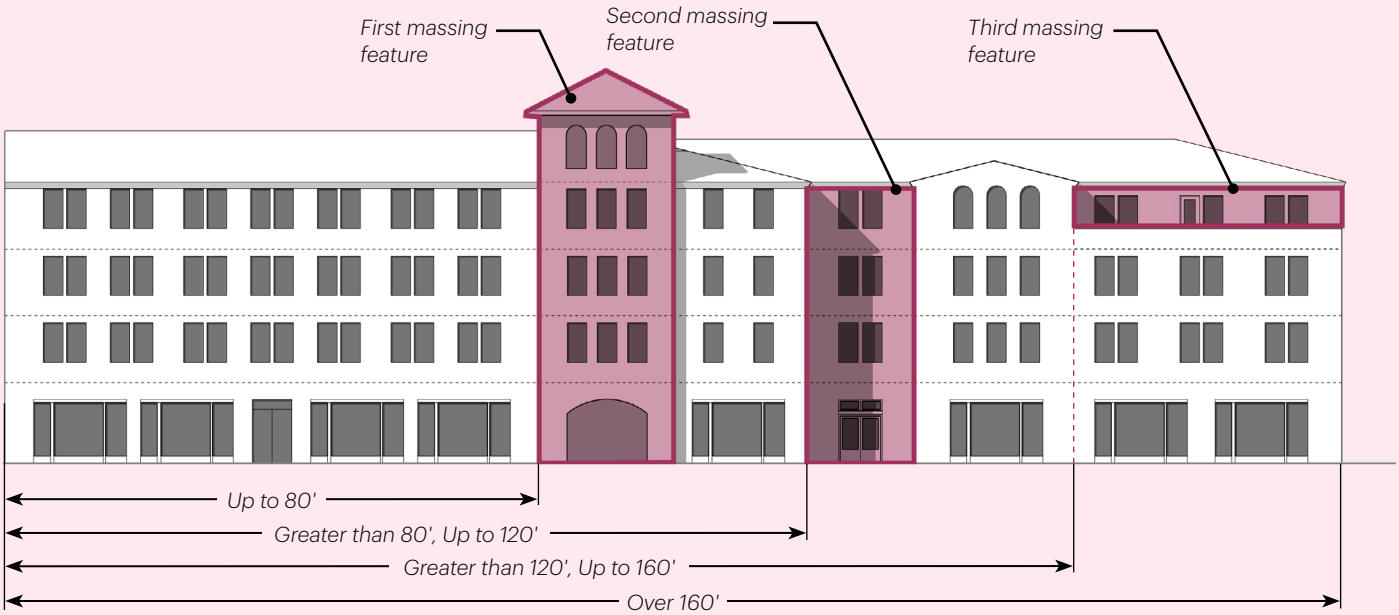
Refine the shape of the building to add visual interest while minimizing the visual impact of larger **block-scale** buildings.

GUIDANCE

- Massing features are applied to long façades of **block-scale** buildings (e.g., over 80 feet long) to add visual interest without visually complicating the design.
- Identifying a purpose for massing refinements helps them be designed and eventually perceived as integral elements of a building.
- Requirements for massing features are based on the length of the building. In general, buildings with lengths less than 80 feet are not required to have massing features. Buildings greater than 80 feet in length are further categorized as shown in the table on the following page.
- Where 2 or more features are required (i.e., building length is greater than 120'), the massing features can be used in combination or the same massing feature can be used more than once on the same façade.
- The overuse of massing features contributes to excessive designs that are costly and do not necessarily contribute positively to the public realm.
- Along rear yards at least 10 feet deep and side yards less than 5 feet wide, massing features are not typically necessary unless the new building abuts parcels with **house-scale** buildings and is longer than 80 feet tall or 4 or more stories.
- The following general types of massing features can be applied individually or in combination to enhance the building design. Further guidance on each of these features is provided on the following pages.
  - Tower: An area of a building where the building massing and/or additional height are expressed as a distinct feature of the building.
  - Wing: A secondary building mass that is attached to the main body of the building on the lot.
  - Stepback: An area of the upper floor(s) façade of the building that is recessed from the façade below by at least one story to give the appearance of a shorter building along the streetscape.
  - Projection: An area of a façade that physically projects from the exterior wall surface by at least four inches.
  - Recess: An area of a façade that is physically recessed from the exterior wall surface by at least two inches.

Example Standards

Massing Features



Note: This diagram illustrates the minimum massing features required. Any allowable feature can be applied as the first, second, or third feature.

REQUIRED STANDARDS

Building Length[1]	Features Required[2]	Allowable Features
Up to 80'	None	• Tower • Wing • Stepback • Projection • Recess
Greater than 80', Up to 120'	1	
Greater than 120', Up to 160'	2	
Over 160'	3	

1 Along front street, side street, or community open space.
2 Required massing features are allowed at any point along the façade.

ADDITIONAL STANDARDS

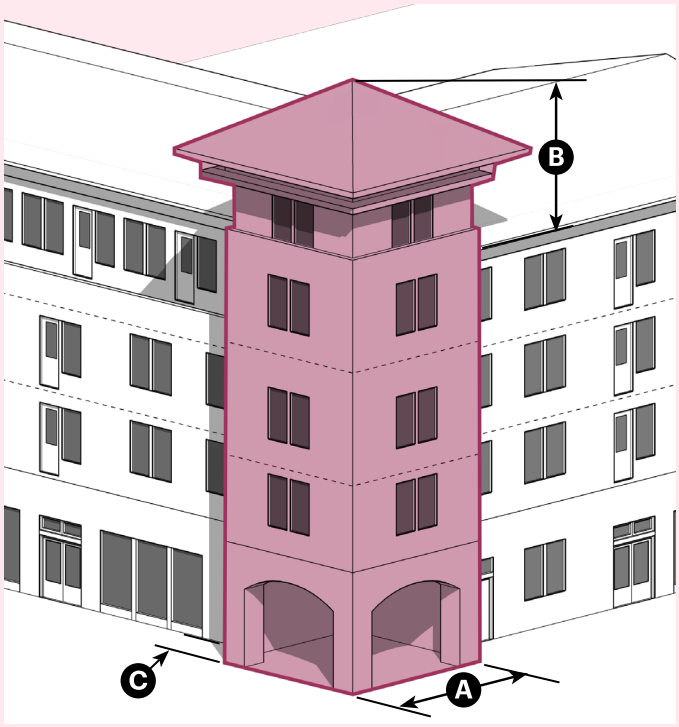
Distance between features: At least 30'

TOWER

- A tower adds interest to the roofline and further shape the building's character and identity. It can also serve as a landmark for the area.
- Applying a tower in a strategic area of the building instead of always at a building corner helps to emphasize its presence and the building's location.
- Coordinating the size of a tower with the floor plan provides for options to project or recess the tower from the main façade without disrupting the unit floor plans and circulation.
- Coordinating a tower with the ground floor and any entries can emphasize the tower's functional and visual importance.
- Allowing a tower to project beyond the maximum building height provides flexibility for how to use the additional floor area (e.g., additional units or additional space for some units).

Example Standards

Tower



REQUIRED STANDARDS		
Dimensions	10' x 10' min.; 30' x 30' max.; Towers shall include at least one bay and up to three bays maximum.	A
Height Allowance	When the highest story of the building is at the maximum height allowed by the zone, tower element is allowed to exceed the maximum height allowed by the zone by up to 10'	B
Projection or Recess from Adjacent Façade	3' min.	C

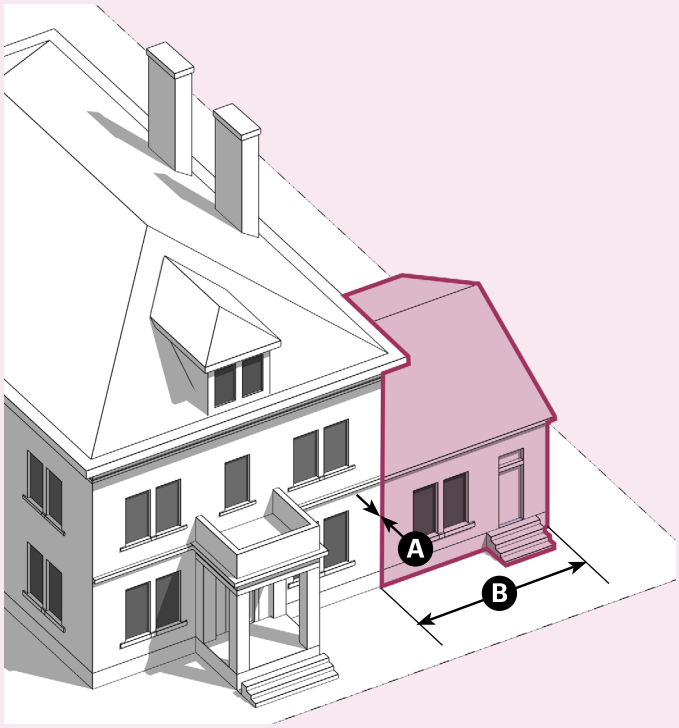
ADDITIONAL STANDARDS
A tower element using the height allowance is allowed to add occupiable floor area to the structure,
Façades adjacent to the tower are not be counted as a projection or recess.

WING

- Wings provide for physical transitions in scale by extending secondary volumes from the main body of the building while increasing the building footprint.
- By making a wing visually secondary to the primary building through its number of stories, overall height, or width, the primary building is emphasized while enabling additional floor area for housing. This is especially important for **house-scale Neighborhoods**.
- In low intensity neighborhoods, further emphasizing that a wing is secondary to the primary building is possible through two approaches: recessing the wing from the façade of the primary building by one to a few feet and/or limiting the wing to be at least one story less than the primary building.
- Providing physical separation between two or more wings on the same façade helps to emphasize the façade of the primary building while generating functional outdoor space between wings.
- **Block-scale** buildings that abut parcels with existing single-unit buildings can use one or more wings to generate a visible transition in scale and size. Other massing features are less effective in these situations.
- Wings vary in height and width, depending on if they are being applied to a **house-scale** building (usually two and sometimes three stories) or a **block-scale** building (as tall as the primary building).

Example Standards

Wing



REQUIRED STANDARDS			
	House-Scale Context	**Block-Scale Context**	
Height Difference from Main Body	Lower by at least 1 story[1]	Same height as main body	
Offset from Main Body Façade	1' to 3'	None	A
Length	At least 10'		B

[1] In 3-story house-scale contexts, wings can be the same height as the main body but should include an offset from the façade.

ADDITIONAL STANDARDS
Façades adjacent to the Wing are not counted as a projection or recess.

Stepback

- Stepbacks reduce the footprint of upper stories thereby reducing the building's presence along the streetscape or to neighboring parcels.
- Applying a stepback is most effective in contexts where there is a prevalence of shorter buildings (e.g., under four stories) and that is the desired physical character but slightly taller new buildings (five or six stories) need to be accommodated.
- Applying a nominal depth that works with local construction systems (e.g., 10 feet) and floor plan designs is most effective.
- Applying a stepback at building corners provides visual relief while allowing some units to be built up to the edge of the façade below.

CLOSER LOOK

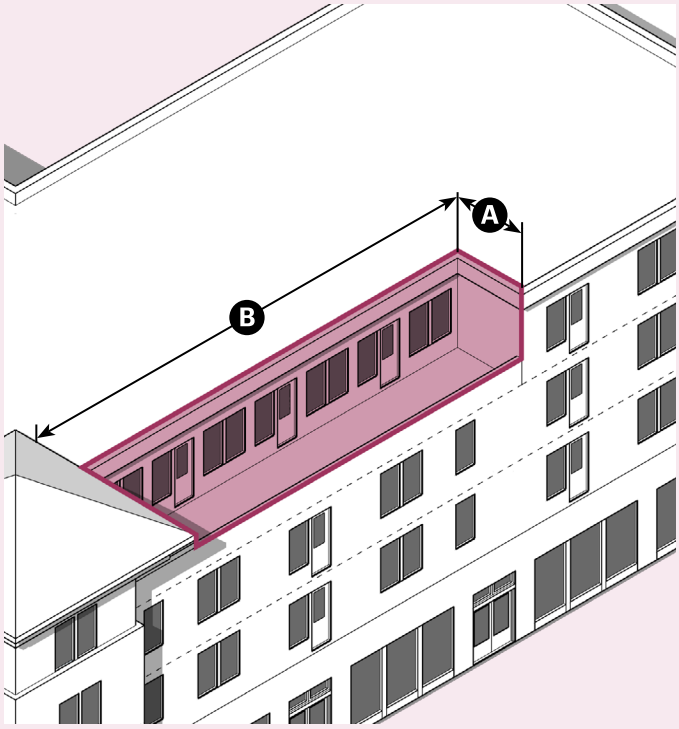
When to Require Stepbacks

Three key questions should be asked when considering stepback requirements: 1) is there a community design objective and purpose for requiring a stepback in new buildings? 2) can certain locations be identified where that objective should be achieved? 3) what is the reality of achieving stepbacks on other nearby or adjacent buildings?

For instance, if there are many infill developments expected in an area and the community is generally supportive of three- and four-story buildings along the streetscape but is concerned about seeing the fifth story of new buildings, then a stepback should be considered to determine if it should be required. But if an area has enough recent (e.g., less than 20 years old) infill development without stepbacks, requiring that new buildings apply stepback to upper stories will not necessarily achieve an overall effect for the area and should not be required. When stepbacks are required, allow the removed volume(s) to be combined and placed elsewhere on the building (e.g., additional story, wing).

Example Standards

Stepback



REQUIRED STANDARDS		
Stepback from Primary Façade	At least 10'; Up to 25'	A
Length of Stepback	At least 1/2 of façade length	B

ADDITIONAL STANDARDS
The exterior area created by the stepback shall be roofed or designed as an elevated deck.
A corner that is at least 5 feet lower in height than the surrounding building volume is counted as a stepback.

PROJECTIONS

- Projections provide visual interest along façades while increasing the building footprint.
- Strategically applying projections for a purpose (e.g., highlighting a portion of the building, providing a shadow line along a façade, increasing the size of certain units) provides visual interest while not conflicting with the floor plan.
- Projections that are at least one bay in width and one story in height will more easily correspond to the underlying façade design and construction system.
- Projections are most effective on large **block-scale** buildings. For example, a 3- or 4-story **block-scale** building that is less than 100 feet long and that is designed using the bay composition approach might not need any projections. But a **block-scale** building of 6 or more stories and longer than 100 feet starts to present large façades that could benefit from one or more projections. This can be achieved by identifying one or more of the bays to project from the façade, coordinating the floor plan with a purposeful projection while adding a few square feet to those units.
- When applied to **house-scale** buildings, projections tend to be focused on a particular element instead of a large area of the façade. For example, an upper story bay along a side façade can be projected a foot or two over the lower stories to visually break the façade while maintaining a simple and visually complementary façade design.
- For projections to be visually perceived, they can be less deep when closer to the pedestrian (e.g., four stories or less) and need to be deeper on taller buildings (five or more stories)

RECESSES

- Recesses provide visual interest in specific areas or along entire façades.
- Strategically applying recesses for a purpose (e.g., highlighting a portion of the building, providing a shadow line along a façade, providing exterior space) provides visual interest while not conflicting with the floor plan.
- Recesses that are at least one bay in width and one story in height will more easily correspond to the underlying façade design and construction system.
- Making vertical recesses wide enough to be perceived visually will make them effective in providing visual interest while not complicating the design or construction.
- Recesses should be used sparingly because they reduce the size of the units involved with the recess(es). However, when coordinated with a unit to provide exterior space, recesses can offer the space that a balcony provides without needing to attach the balcony to the façade.
- As with projections, for horizontal recesses to be visually perceived, they can be less deep when closer to the pedestrian (e.g., four stories or less) and need to be deeper on taller buildings (five or more stories).

Economic feasibility insight for façade recess standards is provided on page 31.

CLOSER LOOK

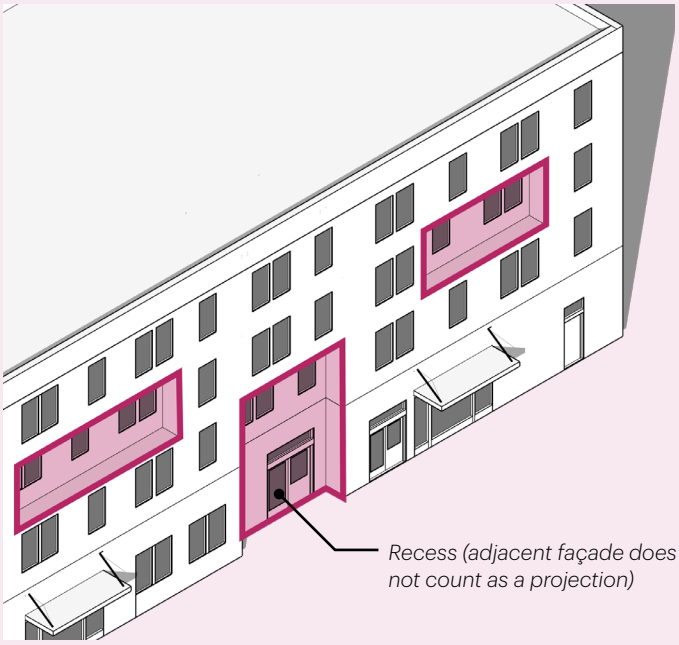
Measuring the Depth of Projections and Recesses

The depth of a projection or recess is measured as the shortest distance between the adjoining façade and the façade parallel to it. Where a projection is identified, any façade from which the projection is measured is not to be counted as a recess. The same applies to a recess.

Example Standards

Projection

Recess



REQUIRED STANDARDS		
	Projection	**Recess**
Depth	At least 4"	At least 2"
Width	At least 1 to 3 bays.	

ADDITIONAL STANDARDS
Projection and/or recess shall extend vertically throughout the building's middle and can extend through the top and/or base.
The roof form of a projection and/or recess shall correspond to that of the volume from which it projects and shall maintain the same eave or parapet height.
Gable or hip roofs shall break at the recess by maintaining the same eave height on all sides of the recess where eaves occur.
Recessed area on the ground plane shall incorporate landscape, outdoor seating and/or an extension of the sidewalk pavement.
Distance between projection/recess shall be at least 100'

ECONOMIC FEASIBILITY INSIGHT

MASSING FEATURES | PROJECTION & RECESS

COST CONSIDERATIONS

Requiring building articulation translates into more complex building forms, which increases material costs for both the exterior and interior of the building—potentially restricting the typology and floor plan of the building. Massing standards that provide a range of treatments (tripartite, modules, etc.) to break down the mass of buildings can reduce the cost impacts of this type of standard.

HARD COSTS ($$)

Requiring building forms that extend or cut into the façade means more complicated types of construction. More materials will be required and weatherization of these building forms will be high cost.

SOFT COSTS ($)

Determining if articulation design meets the standard is often complex and there can be many rounds of review during entitlement that can add time and ultimately carrying costs.

OPPORTUNITY COSTS ($)

Weatherizing building components increases operating costs down the road, as these potential fail points need to be repaired periodically.

CLOSER LOOK

How to Reduce the Cost of Façade Articulation?

Development professionals we spoke to agreed façade articulation requirements were one of the most expensive standards to address without necessarily resulting in buildings that are any better designed.

If projections and recesses are required, it is critical to define a functional minimum spacing. A designer noted that requiring a projection or recess every 20 - 40 feet would make a project too complex and force costly redesigns of individual units. According to designers, this is even more important for affordable projects. Repetitive design modules, including projections or recesses, need to match typical unit sizes to avoid expensive redesigns of building layouts.

A larger minimum span helps designers avoid needing to "fit" units around articulation in a façade to avoid changes in wall planes mid-unit. This causes costly increases in interior finishing and construction costs. Developers agreed that requiring a projection or recess no more than every 100 feet is generally feasible and that articulation every 200 feet struck a good balance between cost and placemaking impact.

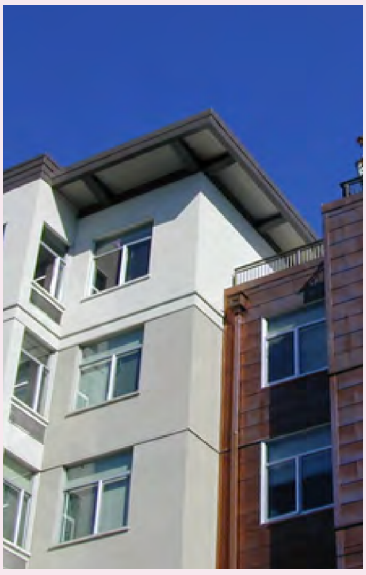


Image Credit: City of San Diego

E ESSENTIAL TOPIC

3.2 Façade Articulation

PLACETYPE	
Neighborhood	○ ●
Corridor	● ●
Center	● ●

INTENT

Compose the elements of a façade to present visual balance along the public realm and promote high quality building design.

GUIDANCE

Façades are composed horizontally by tripartite design and vertically by modules and bays to form a grid framework for the orderly placement of openings. Exterior materials and finishes are used to further complement and support façade composition and articulation.

TRIPARTITE DESIGN

- Façades are horizontally divided into base, middle and top elements.
- Each of the three horizontal sections of the façade is designed to reflect their position on the building and contribute to the whole of the building design.

MODULES AND BAYS

- Façades are vertically divided into modules and bays within which openings are arranged.
- Modules are larger divisions of the façade intended to organize long walls into discrete compositions.
- Bays are nested within a module and typically repeat along the façade to convey order and balance that enhance the visual quality of the building and public realm.

FENESTRATION

- Openings in the façade in proportion to the solid walls bring balance to the façade composition (i.e., not too much wall or too much glazing).
- Solar orientation is another consideration for a balanced façade.
- Streamlined and simple patterns of openings help control cost and contribute to a cohesive, holistic building design. One or two accent items can be used to deliver visual interest in a systematic approach.

EXTERIOR MATERIALS

- Materials and finish complement the whole of the building. They are used to reinforce tripartite design and distinguish modules. They are not overused or applied without purpose.

CLOSER LOOK

Less Can Be More

A look at these two buildings located directly across the street from each other shows how good design reflects the topics presented in this Handbook.

Building 1 clearly shows tripartite design—the top, middle and base are identifiable by using materials and finishes, fenestration and floor height. The building is vertically divided into shorter lengths with discrete design (modules) and bays are composed in a rhythmic pattern. This visually breaks down the **block-scale** building so it is not perceived to be a massive wall along the street. Openings are composed in symmetry and vertically aligned in the bays. They are also appropriately sized based on tripartite design. Materials and finish reflect tripartite design and distinguish modules.

Building 2 does not have a clear base, middle, top design, through there is some emphasis on the corner element and entry points. This does not draw the eye of the passerby but instead creates visual complexity. Modules are not clearly defined which leads the building to present as a larger building than the one across the street from it. While the building reflects a contemporary architectural style, the windows do not fit with the style and are more typical of craftsman style buildings. Lastly, the exterior materials and finish are not used to complement the whole of the building but rather to accentuate certain parts of the building.

Ⓢ **SUPPLEMENTAL TOPIC**

3.2.A Tripartite Design

PLACETYPE	
Neighborhood	●
Corridor	●
Center	●

INTENT

Organize the façade of a building into three sections—the top, middle and base—to direct the visual emphasis on the parts of the building that are most readily experienced.

GUIDANCE

- Building façades are designed to visually express a base, middle and top. The building's base is experienced from the street, while the middle section draws the eye to the building's top.
- Boundaries between the base, middle and top are articulated by a cornice, projecting profile/string course, or other horizontal element that is consistent across the length of the building.
- Including definitions for these elements/terms changes a potentially subjective topic into an objective topic, improving implementation.

BASE

- The base comprises the lowest story/stories (up to two for buildings up to seven stories and up to three for buildings over seven stories) of the building and requires a high attention for detail because it is experienced close at street level.
- The base is designed to visually ground the building, providing the look of a weighted base like a column's base.
- Larger windows along the base façade communicate the activities and use of the interior space to the exterior (e.g., retail store).
- The base is typically identifiable through a material change distinct from the primary wall finish material of the middle.

MIDDLE

- The middle typically comprises more stories than the base and top.
- The middle incorporates the building's primary wall color and finish material.
- Vertically aligned openings in the middle draw the eye upward to the building top.

TOP

- The top typically comprises the roof or cornice treatment to visually cap the building.
- The top can include the uppermost story, provided that a cornice, projecting profile/string course and change of material or color are expressed on the façade starting at the floor level of the uppermost story.
- The height of the top is typically less than that of the base to emphasize visual weight at the base of building.
- Upper-level stepbacks with appropriate depth can be used to define the top of building.

Example Standards

Tripartite Design

REQUIRED STANDARDS	
Base Stories	Up to 3 (including the ground floor)
Middle Stories	Same as or more than the number of stories in the base or top
Top Height	Less than or equal to the height of the base

ADDITIONAL STANDARDS
Top is allowed to include the uppermost floor defined by a horizontal expression line.
Any horizontal changes in exterior materials and finish shall occur at the divisions of the base, middle or top.

CLOSER LOOK

Origins of Tripartite Design

The concept of the tripartite façade originated with architect Louis Sullivan, dividing taller buildings into sections—akin to a column's base, shaft (middle) and capital (top)—to draw the eye. A weighty base prominently displays entry and ground level uses, a tall middle section comprised of stacked openings implies vertical orientation and a decorative top crowns the building's form.

E **ESSENTIAL TOPIC**

3.2.B Modules and Bays

PLACETYPE	
Neighborhood	○ ●
Corridor	● ●
Center	● ●

INTENT

Vertically organize the façade to create discrete compositions and orderly patterns of openings.

GUIDANCE

Dividing long **block-scale** buildings (e.g., over 80 feet long) into individual modules and then applying bays to each module generates a distinct façade on each module, reducing the perceived length and size of the building.

MODULES

- D ivision into individual modules is most appropriate when the context is made up of smaller (shorter) buildings and new development will result in larger (longer) buildings.
- Modules comprise two or more bays and are typically no more than nine bays.
- Minimum and maximum width of a module depends on the overall length of the building.
- A module is differentiated from the abutting module typically by two or more of the following features.
  - Primary wall finish or material
  - Module width
  - Different width of bays
  - Different building frontage type
  - Different elements used to define base/middle/top
  - Different eave/parapet height
  - Recess or projection of module (two feet min.)

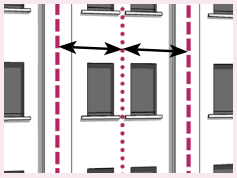
BAYS

- Bays in a module generally repeat in the same pattern along the façade.
- The pattern of bays can differ between the base, middle and/or top so long as they are vertically aligned. This allows variety in fenestration while maintaining cohesion and balance.
- Bays are not required to be equal in width.

CLOSER LOOK

Bay Measurement

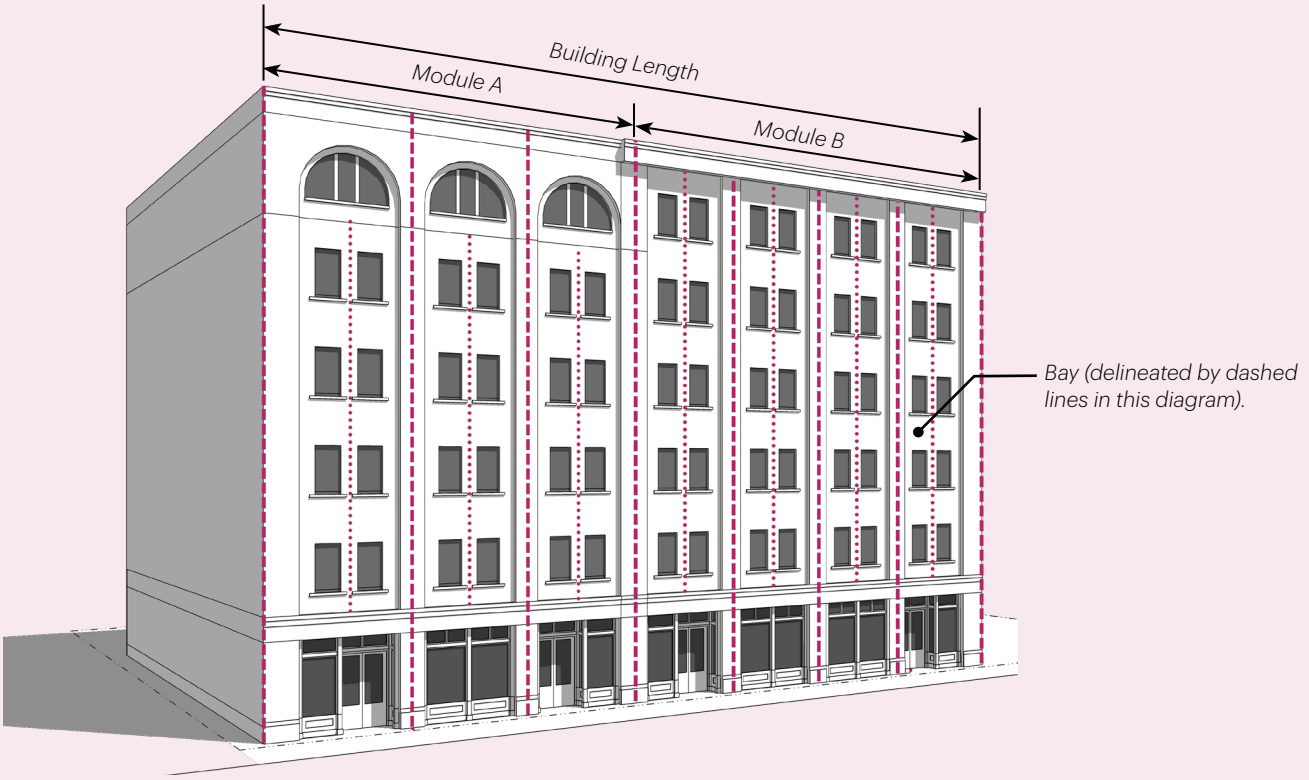
The width of a bay is measured horizontally from the midpoint between successive openings to the next midpoint between openings, except when there is a clear edge (e.g., edge of building, edge of projection, etc.). Boundaries of each bay extend vertically from the lower boundary of the base, middle, or top to the upper boundary of the same division and do not intersect any opening.



Bay width measurement

Example Standards

Modules and Bays



REQUIRED STANDARDS	
Module	
Building Length	**Module Length**
Up to 80'	At least 40'; Up to 80'
Greater than 80'	At least 40'; Up to 100'

ADDITIONAL STANDARDS

Modules shall be differentiated by at least two of the following features:

- Primary wall finish or material
- Module width
- Different width of bays
- Different building frontage type (See Chapter 2)
- Different elements used to define base/middle/top
- Different eave/parapet height
- Recess or projection of module (two feet min.)

REQUIRED STANDARDS	
Bay	
Width	At least 6'; Up to 30'

ADDITIONAL STANDARDS

Within each module, the horizontal pattern of bays are allowed to differ between the base, middle and/or top, but shall be vertically aligned.

Except as required by utility provider and fire department, blank walls shall not exceed 10' in length, measured horizontally from the edge of each opening to the nearest opening or façade edge.

Where appliable, bay boundary shall coincide with the boundary of any massing features.

E **ESSENTIAL TOPIC**

3.2.C Fenestration

PLACETYPE		
Neighborhood	●	●
Corridor	●	●
Center	●	●

INTENT

Provide definition to the façade in a manner that is cohesive with the surrounding architectural context and reinforces the overall character of the building.

GUIDANCE

Fenestration is the arrangement, proportioning and design of windows and other openings, such as doors and balconies, on a building façade. The following guidance is provided assuming compliance with fire and building codes and window-washing requirements.

- The percentage of openings to solid wall is at least 25 percent to create a balanced façade. Ground floors generally have a higher opening percentage (at least 60 percent for non-residential and 40 percent for residential) for greater transparency.
- Privacy between neighboring buildings (typically within 20 feet) can be maintained through the following:
  - Offset openings from the opposing opening;
  - Orient openings away from the neighboring building by placing the opening at an angle of at least 30 degrees; and/or
  - Along side yards in **house-scale** contexts, clerestory windows provide light while providing privacy.

WINDOWS

- Window size and placement indicate the activity behind the façade. For instance, smaller windows indicate the need for privacy, like in bathrooms and larger openings used for more public rooms, like living and dining rooms. Window size and placement ideally respond to solar orientation where feasible.
- Window proportions are typically vertical (e.g., portrait orientation). Where used, square secondary/accent windows and horizontal opening proportions are grouped.
- Recessing windows create shadow lines that provide detail and definition to the overall façade. Requirements for window depth need to consider cost and construction tolerances.

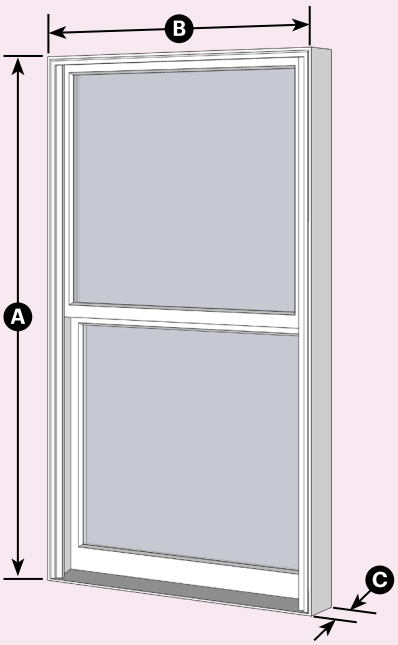
CLOSER LOOK

Construction Tolerances

When requiring detailed standards, it is important to keep construction tolerances, or allowable variation from specified values in mind due to the difference in nominal and actual dimensions of construction materials. For example, the actual size of a 2" x 3" lumber (the nominal size) is around 1.5" x 2.5". In many cases, the actual size of lumber is shorter than the nominal size.

Example Standards

Windows



REQUIRED STANDARDS		
Proportion	Height is greater than width	A > B
Depth[1]	At least 2" to 3"	C

ADDITIONAL STANDARDS
Trim and decorative surround: At least 2" to 4"
Awnings shall exceed to the width of opening to properly shelter the opening below.
When placed within punched openings, all windows or window groupings shall include a sill.
Permanent or retractable security gates, grill or bars are prohibited.
Square/horizontal openings are allowed through compositions of vertical windows.

1 Requirements for window depth may create additional cost and complications depending on wall construction.

CLOSER LOOK

Aligning Window Standards to the Building's Architectural Style

Openings (doors and windows) play a significant role in a building's compatibility/adherence to a particular architectural style and character.

While there is compositional guidance not tied to architectural style, such as larger ground floor openings in relation to upper floor openings, other guidance is necessary to maintain the integrity of the expression of the architectural style for the building. An example of this would be the relatively taller window proportions of the Victorian style (to give the illusion of a taller house or building) in relation to other styles with wider window proportions not typical of Victorian architectural design.

Because the intent of façade composition is to create balance and harmony, simply composed windows can add to the façade's attractiveness, where the repetition and sizing of both windows and doors create a clear pattern as opposed to a cluttered one.

DOORS

- The placement and design of doors on a façade establish a sense of entrance and hierarchy for the building façade.
- The primary entry door is emphasized over secondary doors through design details, materials and the use of additional features, such as transoms, sidelights, decorative surrounds/trim and awnings.
- Awnings or other entrance coverings are used above doors to provide protective covering and emphasize the entryway.
- Recessed doors provide transition from the public realm to private space and covering for protection.
- Doors can be solid or composed of panels and panes (e.g., lites), in keeping with the building's architectural style and desired usability (e.g., full lite for visibility).

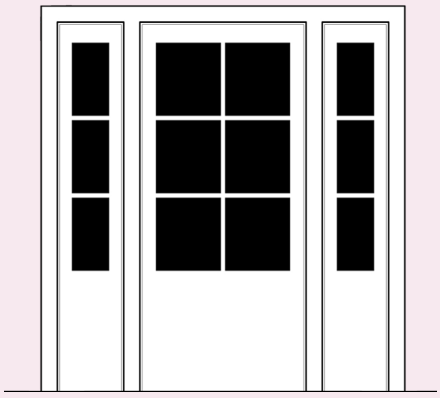
PROJECTIONS

- Balconies are placed in symmetry with other openings (i.e., windows and doors). More guidance on balconies can be found in Chapter 5 Open Space.
- Awnings and decorative surrounds/trim are added to openings to enhance the building's character and designed to match the scale/proportion of the opening (i.e., not too massive, or too thin/small). It is ideal if placement of the element reads as integral to the opening rather than tacked on (i.e., too far away, not connected).

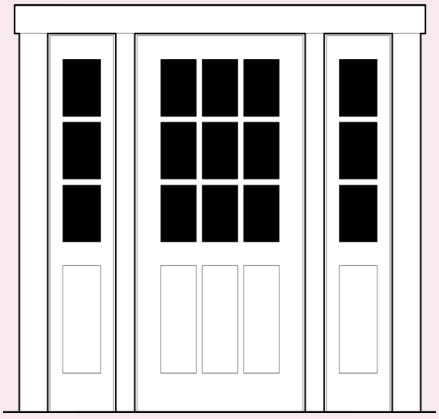
CLOSER LOOK

Division of Glazing

The configuration of glazing divisions, or lites, play a big role in reinforcing the building's architectural style. Contemporary buildings typically have less lites but they are larger in size. Highly detailed architectural styles, such as craftsman or Spanish revival, have more lites of smaller size. The proportion and size of lites to panels also impacts the door's level of privacy and access to daylight.



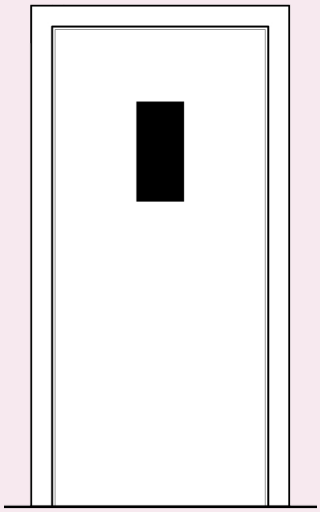
Contemporary-style door



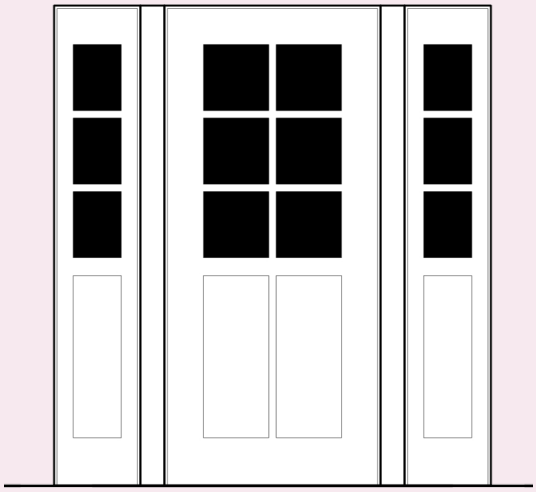
Craftsman-style door

Example Standards

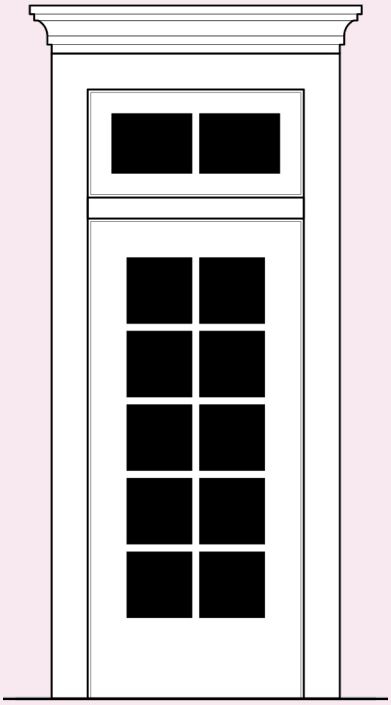
Doors



Vision-Glass Door with Square Span



Half-Glass Door with Sidelites



Full-Glass Door with Transom and Entablature

REQUIRED STANDARDS	
Allowed Materials	Wood, aluminum, fiberglass, composite wood

ADDITIONAL STANDARDS
No portion of door shall be allowed within 1'6" of outside corners of building.
Doors shall be centered along width of balconies and arches, where they occur.
Awnings shall exceed the width of the door and be at least 2' deep.
Recessed entryway shall be at least 3' deep.

E ESSENTIAL TOPIC

3.2.D Exterior Materials

PLACETYPE	
Neighborhood	●
Corridor	●
Center	●

INTENT

Compose and clad buildings with sustainable and durable materials that are sensitive to the local and regional context.

GUIDANCE

- Exterior materials contribute to the character and identity of a building and complement the building's architectural style.
- Local materials, climate and building use are important considerations in selecting the appropriate materials for a building.
- Materials can visually communicate heaviness or lightness. For instance, masonry, even veneer-style, is visually heavy and typically not used on upper story projections such as bay windows.
- Protectants are required for some exterior materials.
  - Exterior timber are protected from decay by application of a stain and sealant or paint.
  - Exterior ferrous metals are protected from corrosion by painting or other impermeable coating and/or metallurgical properties, including galvanized steel, stainless steel (matte effect finish only) and/or weathering steel (e.g., COR-TEN).
- Color and/or material change on a façade occurs at the following locations:
  - At inside corners rather than outside corners;
  - At a horizontal articulation (e.g., string course); and/or
  - At the boundaries between modules.

CLOSER LOOK

Innovations in Materials

Building materials evolve with time and the need for new innovative materials continues to be pressing with high demand for housing, protection against disasters and escalated construction costs. While current best and common construction practices are to be followed, standards should not prohibit the exploration of new practices. Some emerging innovative materials are transparent wood (alternative to glass and plastic), pollution absorbing bricks (which filter air from outside) and pigmented concrete (which is not affected by abrasion and does not fade in color).

Example Standards

Exterior Materials

STANDARDS		
Façade	**Allowed Materials**	**Prohibited Materials**
Exterior Wall Cladding	Wood, fiber cement, brick, stucco, masonry, metal, tile	EIFS, aluminum lap siding, T1-11 siding, vinyl siding/soffit
Base or Foundation (where applicable)	Brick, cast stone, wood, fiber cement, treated concrete, masonry, metal	Aluminum lap siding, T1-11 siding, vinyl siding/soffit
Roof and Roof Elements		
Roofing, mansard	Slate shingles, metal	Asphalt
Roofing, pitched	Asphalt, slate shingles, metal	
Roofing, flat	Asphalt, SBS (Styrene-Butadiene-Styrene), TPO (thermoplastic polyolefin), PVC (polyvinyl chloride)	
Windows, Bay Windows and Entry Doors		
Trim or Surround	Metal, composite wood, wood, fiber cement	
Entry Door	Wood, fiberglass, composite wood, wood-clad aluminum	
Window Frames	Wood, fiberglass, vinyl, metal, wood-clad aluminum	
Window Sill	Wood, composite wood, fiber cement, cast stone, metal	
Glazing	Clear glass; shall not be tinted, mirrored, or colored (unless required by Energy Code)	
Balconies		
Guard/Railing	Metal, glass, wood, composite wood	
Fascia	Metal, wood, composite wood	
Porches and Galleries		
Columns	Wood, composite wood, fiberglass, cast stone, masonry, metal	
Guard/Railing	Metal, wood, composite wood, metal, glass	
Storefronts		
Storefront	Brick, wood, composite wood, metal	
Columns	Wood, composite wood, fiberglass, metal	
Storefront Base/Bulkhead	Wood panels, brick, stone, cast stone, tile, fiber cement, stucco	

Note: This list is not intended to be exhaustive for both allowed and prohibited materials

Ⓢ SUPPLEMENTAL TOPIC

3.3 Building Types

PLACETYPE		
Neighborhood	●	○
Corridor	●	○
Center	●	○

INTENT

Generate predictable building forms for new housing that fits well and contributes to the intended physical character of its context.

GUIDANCE

- Building types offer a nuanced approach to building size and scale, either within a development or between adjacent lots with existing buildings.
- Predictability about the intended form and site plan is provided by addressing six basic topics for each building type: it's description and intent, building size, massing and lot coverage, pedestrian access, vehicle access and parking and on-site open space.
- Building types provide for **house-scale and block-scale** building forms to address the six Placetypes supported by this Handbook.
- **Block-scale** building types are expressed as a main body and where appropriate, as a main body and wings. **House-scale** building types are always expressed as a main body and wings. This approach of a main body and wings lends to predictability of the maximum building footprint and the resulting housing yield.

CLOSER LOOK

Why Use Building Types?

Building type standards offer predictability in built outcomes and can be used to generate building forms that conventional zoning and market trends do not. Building type standards specify refinements to the overall zoning envelope to further shape the intended built form for the area. They are especially worth considering for areas with a specific form vision, whether maintaining the existing pattern(s) or creating something new.

As an example, in a **house**-scale **Center**, an L-shaped courtyard building with a ground floor shopfront has many details that can be challenging to regulate through typical zoning standards, such as the building frontage, courtyard size, driveway location and access to parking at the rear of the site. When this level of predictability is desired, building type standards can be a convenient and useful tool.

CLOSER LOOK

Where to Use Building Type Standards

Building type standards are most effective in walkable environments with **house-scale** or lower intensity **block-scale** buildings, such as **house-scale Neighborhoods and Corridors**. In these environments, buildings are mostly detached and there is an expectation for each building to be perceived as an individual building on its own lot. In **Centers**, building type standards are effective where buildings are detached or attached and **house-scale**, such as small-town main street environments.

Building type standards are not recommended for auto-dependent environments and higher intensity **block-scale** contexts. These types of environments do not necessarily need the finer-grained details that building type standards provide.

Wherever you are considering using building type standards, make sure to coordinate your standards with the existing or new lot widths and depths in those areas. Also, make sure that the zoning district standards support what's needed by the building type(s) you're regulating. For example, the zoning district allows a maximum of 40 percent lot coverage but the multiplex building works well with 45 to 50 percent lot coverage. In these situations, either increase the maximum allowed in the zoning district for the areas where the multiplex building is allowed or, exempt the multiplex building type from the zoning district maximum and instead regulate the maximum footprint of that type.

WALKABLE ENVIRONMENTS

Building Type Standards	Neighborhood		Corridor		Center	
	House-Scale	Block-Scale	House-Scale	Block-Scale	House-Scale	Block-Scale
Recommended	✓		✓		✓	
Optional		✓		✓		
Not Recommended						✓

CLOSER LOOK

How Much Regulation is Enough?

As with all zoning and design standards, there is a need for predictability, creativity and variety. The question is what needs to be regulated and to what level of detail, to achieve your intended predictability, creativity, variety and built outcome(s)? Considering the answers to this question is a necessary step in preparing your standards. It is recommended to work with local design professionals and builders to find the balance that works for you.

Ⓢ **SUPPLEMENTAL TOPIC**

3.3.A Mid- to High-Rise Buildings

PLACETYPE	
Neighborhood	○
Corridor	●
Center	●

INTENT

Allow for dense development in transit- and amenity-rich walkable neighborhoods in buildings that define the public realm with active and human-scaled ground floors.

DESCRIPTION

This type addresses the spectrum of buildings starting at 4 stories and up to towers of 20 or more stories.

The lower range of this type includes the Mid-Rise: a **block-scale** building, four to eight stories tall. It is used to provide a vertical mix of uses with a focus on housing or it can provide entirely housing. The Mid-Rise is appropriate for **block-scale** contexts.

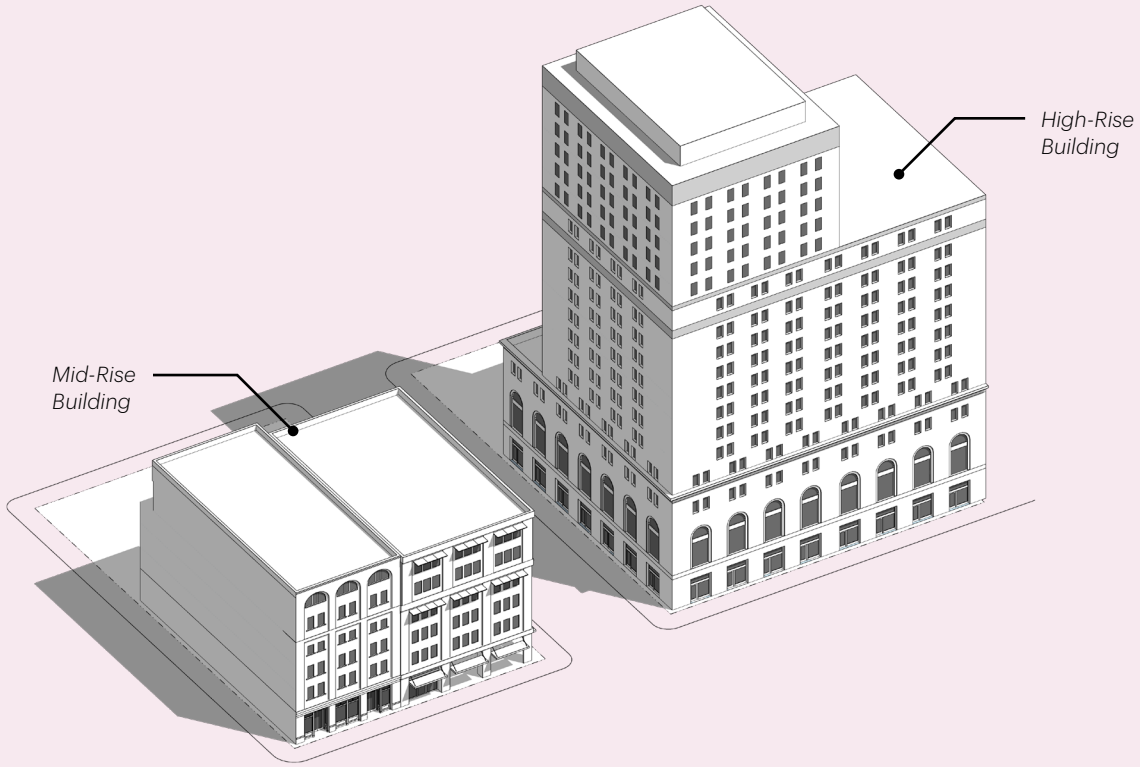
The upper range of this building type is the High-Rise: an extra large, **block-scale** building with portions or all of the building more than 8 stories tall up to 20 or more stories. It is used to provide a vertical mix of uses with a focus on housing. The High-Rise is appropriate for very intense **block-scale** contexts.

GUIDANCE

- **Lot Coverage.** From 100 feet wide up to an entire block in building size/footprint (lot coverage) with at least two façades along the streetscape and enhanced by massing features.
- **Pedestrian Access.** Access is provided through one or more ground floor lobbies. Direct access from the sidewalk where ground floor housing occurs.
- **Vehicle Access and Parking.** If provided, parking is located in a podium or subterranean garage with access along side street on corner parcels and along the main façade (center or side) for interior parcels.
- **On-Site Open Space.** Open space is provided through one or more podium-level courtyards depending on the building size. For buildings that are more than half of a block in size, paseos also provide on-site open space and additional pedestrian access.

Example Standards

Mid- to High-Rise Buildings



REQUIRED STANDARDS

	Mid-Rise	High-Rise	
Units per Building	Unlimited		
Stories	4 to 8	Up to 20+	
Width/Depth	Up to 400'	Up to 400' (up to 12 stories)	Up to 200' (portion(s) over 12 stories)

ADDITIONAL STANDARDS

The ground floor shall be arranged into a series of residential or commercial spaces, which vertically correlate with bays of windows grouped and stacked above.

Entrances to sprinkler rooms, fire exits, utility equipment (such as gas meters) and vehicular entrances shall be internalized away from the street-facing building façades.

Ⓢ **SUPPLEMENTAL TOPIC**

3.3.B Courtyard Buildings

PLACETYPE	
Neighborhood	●
Corridor	●
Center	●

INTENT

Generate multifamily buildings that are designed around semi-private landscaped open spaces serving as as shared spaces for residents.

DESCRIPTION

This type includes a **house-scale** (Neighborhood Courtyard) and a **block-scale** version (Core Courtyard).

The Neighborhood Courtyard is a detached building, up to three stories, that consists of multiple attached and/or stacked units, accessed from a shared courtyard in L or U-configurations and is appropriate for **house-scale** contexts.

The Core Courtyard is an attached building, up to seven stories, that consists of stacked units, accessed from a shared courtyard in L, U, or O-configurations and is appropriate for **block-scale** contexts including **Centers** where the ground floor along the street contains non-residential uses (e.g, at corners or along main streets).

GUIDANCE

- **Lot Coverage**
  - Neighborhood Courtyard buildings cover the space of one wide residential lot (typically 100 feet) or two regular residential lots.
  - Core Courtyard buildings are 100 feet wide or more up to an entire block in building size/footprint with at least two façades along streetscapes and courtyards, enhanced by massing features.
- **Pedestrian Access**
  - Building access is provided through one or more shared courtyards.
  - Ground floor units in Core Courtyards can be accessed directly from the street or a lobby.
- **Vehicle Access and Parking**
  - Neighborhood Courtyards typically provide parking toward the rear of the parcel in a surface parking lot and tuck-under spaces along the rear of the building. Access is provided along the side for interior lots or along the rear for corner parcels.
  - Core Courtyard parking is typically provided in a podium or subterranean garage. On corner parcels, access is from the side street. On interior parcels, access can be in the center of the parcel or along a shared lot line. On parcels large enough, parking can be provided in a surface parking lot if desired.
- **On-Site Open Space.** Open space is provided through one or more shared courtyards depending on the building size. The minimum open space width is clear of encroachments (e.g., porches, patios, etc.).
  - Neighborhood Courtyards have a courtyard that is open to the street, emphasizing the **house-scale** size of the building. Along **block-scale Corridors** and lower-intensity **block-scale Neighborhoods**, the Courtyard is not open to the street and is accessed by a Gateway building frontage (see Gateway in Chapter 2.3 Building Frontage Design for more details).
  - The courtyard of Core Courtyard buildings is typically not open to the street, maximizing the floor area and often including non-residential along the ground floor street façade. The courtyard is accessed through a Gateway from the sidewalk along the street.

Example Standards

Courtyard Buildings

REQUIRED STANDARDS	Neighborhood Courtyard	Core Courtyard
Units per Building	Up to 12	Unlimited
Stories	Up to 2.5	3.5 to 5
Width	86'	Up to the size of block
Depth	Up to 100'	Up to the size of block
Courtyard		
Width	15' to 20'	30' to 40'
Depth	30' to 40'	65' to 75'

ADDITIONAL STANDARDS
Unit access shall be directly off the courtyard or street.
The courtyard shall be accessible from the primary front.
Neighborhood Courtyards shall be defined by 2'-6" to 4' tall wall with entry gate/door.
Multiple courtyards shall be connected via a passage through or between buildings

Ⓢ **SUPPLEMENTAL TOPIC**

3.3.C Townhouses

PLACETYPE	
Neighborhood	● ●
Corridor	● ●
Center	● ●

INTENT

Ensure that this often-attainable housing type is enabled and built to line streets and open spaces with active ground floors.

DESCRIPTION

This type includes a **house-scale** version (Neighborhood Townhouse) and a **block-scale** version (Core Townhouse).

The Neighborhood Townhouse is a detached building of three to five attached townhouse units, in up to three stories, appropriate for **house-scale** contexts.

The Core Townhouse is an attached building of six or more attached and stacked units, in up to five stories, appropriate for **block-scale** contexts.

Note: Townhouses in fee simple configurations can result in lost density. If Townhouses are desired, consider how the standards could encourage efficiency (stacked configurations) and attainability (smaller unit sizes with fewer parking spaces).

GUIDANCE

- **Lot Coverage**
  - The Neighborhood Townhouse building covers the space of one wide residential lot (typically 100 feet) or two regular residential lots. This version presents a building that looks like a large house but has multiple units behind the single façade.
  - The Core Townhouse building is 100-feet wide or more up to an entire block in building size/footprint (lot coverage) with at least two façades along the streetscape enhanced by massing features. This version can also be designed for individual townhouse units to have their own façades.
- **Pedestrian Access.** Access is provided directly from the sidewalk.
- **Vehicle Access and Parking.** Parking is provided along the rear of the parcel in a surface parking lot and/or tuck-under spaces along the rear of each unit. Access is provided along the side for interior lots or along the rear for corner parcels. On parcels with steeper slopes (e.g., over 10%), parking can be along the front, when setback from the street at least to the main building façade. Garages accessed directly along the front shall be accessed by a group entry or individual garage doors.
- **On-Site Open Space.** Open space is provided through a small rear patio. Where the rear is used only for parking, the patio is provided along the front of each unit.

Example Standards

Townhouses

REQUIRED STANDARDS

	Neighborhood Townhouse	Core Townhouse
Units per Building	3 to 5	6 or more
Stories	Up to 3	Up to 5
Width	At least 16' per unit	
Depth	Up to 40'	Up to 48'

ADDITIONAL STANDARDS

Each townhouse and its units shall have an individual entry facing a street.

At-grade tuck-under parking shall be set behind at least 20' of occupiable space along the front façade.

Ⓢ **SUPPLEMENTAL TOPIC**

3.3.D Multiplexes

PLACETYPE		
Neighborhood	●	●
Corridor	●	●
Center	●	●

INTENT

Achieve residential densities in lower-intensity neighborhoods that are supportive of walkable environments with a wide variety of housing options and unit sizes.

DESCRIPTION

This type includes a **house-scale** version (Neighborhood Multiplex) and a **block-scale** version (Core Multiplex).

The Neighborhood Multiplex is a detached building, up to three stories of stacked units, typically between three and five units, appropriate for **house-scale** contexts.

The Core Multiplex is a detached or attached building, up to four stories of six or more stacked units, appropriate for **block-scale** contexts. The Core Multiplex also lends itself to **Center**s where the lot is not wide enough for the Core Courtyard or where the intent is for up to four stories. In these situations, the Core Multiplex could take an alternative, mixed-use form: a sideyard building with a shopfront along the street. This variation presents a shopfront along the street and then inside the lot, behind the shopfront portion of the building, half of the lot is a garden and the other half is housing facing the garden.

GUIDANCE

- **Building Size, Massing and Lot Coverage.**
  - Neighborhood Multiplexes cover the space of one residential lot (typically 50- to 60-feet wide).
  - Core Multiplexes have a larger footprint covering the space of one larger residential lot (typically 75- to 100-feet wide).
- **Pedestrian Access.** Access is provided through one or more lobbies directly from the sidewalk.
- **Vehicle Access and Parking.** Parking is provided along the rear of the parcel in a surface parking lot and/or tuck-under spaces along the rear of the building. Access is provided along the side for interior lots or along the rear for corner parcels.
- **On-Site Open Space.** Open space is provided through a shared rear patio. Where the building is within a short walking distance (about 1,000 feet) of an existing open space, on-site open space is typically not provided. On lots at least 50 feet wide with rear vehicle access and parking, there is a variation of this type that presents an L-shaped building with a wide façade along the front. Behind that massing, a shared garden is on one half of the lot and housing on the other half. In **house-scale Centers**, the front façade can include a shopfront as the example described on page 86.

Example Standards

Multiplexes

REQUIRED STANDARDS

	Neighborhood Multiplex	Core Multiplex
Units per Building	Up to 12	Unlimited
Stories	Up to 3	Up to 4
Width	42' to 60'	58' to 82'
Depth	Up to 60'	Up to 110'

ADDITIONAL STANDARDS

Units shall be accessed by a common entry along the front or side street.

Ⓢ **SUPPLEMENTAL TOPIC**

3.3.E Duplexes

PLACETYPE	
Neighborhood	●
Corridor	
Center	

INTENT

Ensure that this traditional housing type is enabled and built to enable a wide variety of housing options and unit sizes.

DESCRIPTION

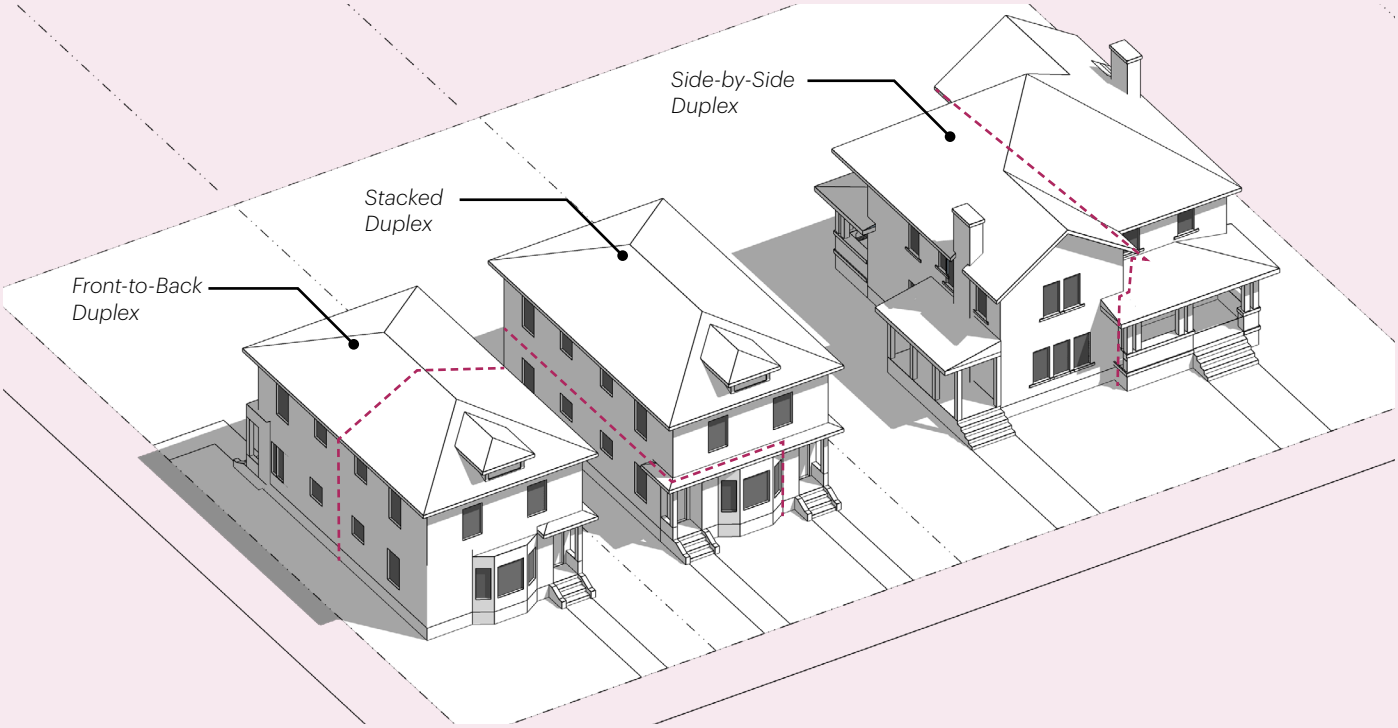
This type provides three **house-scale** versions: Side-by-Side Duplex, Stacked Duplex and Front-to-Back Duplex. The Side-by-Side is a detached building of two attached units. The Stacked is a detached building of two stacked units. The Front-to-Back is a detached building of two attached units, one facing the street and the other facing the rear yard. The units in the Side-by-Side and Stacked versions face the street. All versions are typically two stories in height but can have an additional "half-story" and are appropriate for low-intensity **house-scale Neighborhoods**. Depending on the intended physical character, duplexes can be effective where a **Center** or **Corridor** transitions to a lower-intensity **Neighborhood**.

GUIDANCE

- **Lot Coverage.**
  - Side-by-Side Duplexes cover the space of one regular residential lot (typically 50- to 60-feet wide).
  - Stacked Duplexes cover the space of one narrower residential lot (typically 35- to 45-feet wide).
  - Front-to-Back Duplexes cover the space of one narrow residential lot (typically 35- to 45-feet wide) but, unlike the other two versions, need enough lot depth (at least 100') to provide a rear yard/patio for the 'back' unit to face that is separated from parking areas.
- **Pedestrian Access.** Access is provided directly from the sidewalk.
- **Vehicle Access and Parking.** Parking is provided along the rear of the parcel in a surface parking lot. Tuck-under parking along the rear of the building is possible for the Side-by-Side and Stacked versions. Access is provided along the side for interior lots or along the rear for corner parcels.
- **On-Site Open Space.** Open space is provided through a shared rear yard/patio or through individual patios for each unit. Where the building is within a short walking distance (about 1,000 feet) of an existing open space, on-site open space is typically not provided.

Example Standards

Duplexes



REQUIRED STANDARDS	Front-to-Back	Stacked	Side-by-Side
Units	2 per building		
Stories	Up to 2.5		
Width	20' to 36'		38' to 48'
Depth	Up to 48'	Up to 48'	Up to 36'

ADDITIONAL STANDARDS
Each unit shall have an entry on the front façade or within 5' of the front façade.
On corner sites, units are allowed to enter from the side street.

Ⓢ **SUPPLEMENTAL TOPIC**

3.3.F Cottage and Duplex Courts

PLACETYPE
Neighborhood ●
Corridor
Center

INTENT

Generate communities of housing that enable the privacy and open space that many seek in houses at a more attainable level.

DESCRIPTION

The Cottage Court comprises detached, single-story buildings arranged around a shared garden (court). The L-version fits on a regular residential lot (typically 50- to 60-feet wide) and the U-version fits on a larger residential lot (typically 75- to 150-feet wide. Both are appropriate for low-intensity **house-scale Neighborhoods**.

The Duplex Court comprises two-story, stacked duplexes arranged around a shared garden (court) in L or U-configurations. The L-version fits on a larger residential lot (75 feet) and the U-version fits on a wider lot (120 feet). This version needs larger setbacks than the single-story versions and a slightly wide garden to not visually overwhelm the space with two-story buildings. This version is appropriate for low to moderate intensity **house-scale Neighborhoods**. Depending on the intended physical character, cottage and duplex courts can be effective where a **Center** or **Corridor** transitions to a lower-intensity **Neighborhood**.

GUIDANCE

- **Lot Coverage.**
  - The Cottage Court consists of single-story cottages that accommodate smaller unit sizes (20 to 30 feet wide or deep). Sometimes the rearmost building at the end of the shared garden consists of two attached units which could be side-by-side or stacked. Caution is advised if considering two stories for this single-story version because while the buildings might be well-designed, the shared garden can feel visually overwhelmed by the taller buildings.
  - The Duplex Court consists of 2-story stacked duplexes that accommodate 2 flats per building (25 feet wide by 30 to 40 feet deep). In this version, the rearmost building at the end of the shared garden could be attached to generate a four-plex. This is dependent on your objectives and on providing the parking you want to require.
- **Pedestrian Access.** Access is provided through the shared garden (court).
- **Vehicle Access and Parking.** Parking is provided along the rear of the parcel in a surface parking lot. Access to the rear parking area is provided along the side for interior lots or along the rear for corner parcels.
- **On-Site Open Space.** Open space is provided through the shared garden and is open to the street, emphasizing the **house-scale** size of the detached buildings. For the Cottage Court, the shared garden is typically at least 20 feet wide and at least 35 feet wide for the Duplex Court. For all versions, the minimum open space width is clear of encroachments (e.g., porches, patios, etc.).

Example Standards

Cottage and Duplex Courts

REQUIRED STANDARDS		
	Cottage Court	**Duplex Court**
Buildings per Development	Up to 10	At least 3
Units per Building	1 (2 in rearmost building)	2 (4 in rearmost building)
Stories	Up to 1.5	Up to 2.5
Building Width	20' to 30'	25'
Building Depth	20' to 30'	30' to 40''
Building Separation	At least 5'	At least 7'
Shared Open Space		
Width	At least 20'	At least 35'
Depth (from front building setback)	At least 40'	

ADDITIONAL STANDARDS
Units can take access from the court or from the sidewalk, whichever is closer.
Each cottage shall include an entry onto the shared open space incorporating a building frontage type.
Building frontage types are not allowed to encroach into the shared open space.

Ch. 4
Site Design

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4.0 Why Site Design Matters

THE DESIGN OF DEVELOPMENT SITES INFLUENCES HOW NEW BUILDINGS ENGAGE THE PUBLIC REALM AND FIT WITHIN THE CONTEXT.

New developments, whether infill or redevelopment, present prime opportunities to contribute to placemaking by locating buildings, common open spaces and thoroughfares to visually shape the public realm and complement their surrounding context.

Walkable places share many characteristics. A key characteristic is that buildings are placed and accessed in relation to the adjacent public realm and to neighboring parcels.

The content in this chapter looks beyond density and floor area ratio to how site design needs to accommodate different places in communities: **Neighborhoods, Corridors** and **Centers**. Each of these three types of places might have the same elements. Depending on the context, the elements would be different sizes and locations to serve the purpose of each place while making a cohesive community overall.

Illustrative example of how a large vacant or underutilized parcel along a corridor could be developed to produce more housing, expand and improve pedestrian and vehicular access and connectivity, and shape the public realm through building placement.

Image Credit: Opticos Design, Inc.

DESIGN PRINCIPLES

The following principles inform the guidance and example standards in this chapter.

(E) 4.1 Vehicle Access & Parking

- Vehicle access and parking are provided while maintaining an appealing pedestrian environment on-site and along the adjacent public realm.
- Vehicular driveways are sized according to the number of vehicles they serve. Those serving fewer than 20 on-site parking spaces are typically able to be narrower.
- Vehicular driveways are designed to accommodate vehicle access while providing safe, continuous pedestrian and bicycle access and circulation and minimal interruption to the public realm.
- Parking is located alongside or behind buildings to not visually detract from the public realm.

(S) 4.2 Building Placement

- Individual buildings are oriented toward the street and engage the public realm through building entries, open spaces and plazas and connections to transit, sidewalks and other circulation.
- Each building is near enough or setback enough from the street to contribute to the intended public realm.
- For **house-scale buildings** to fit their context more effectively, lot coverage standards are replaced with building footprint standards.
- In **block-scale** contexts, the building is generally shaped by the block size. Therefore, instead of building footprint standards, lot coverage standards are recommended to provide for open space.

This Handbook assumes that cities are keeping their existing building setbacks in place. However, if changes to those setbacks are desired, apply the principles for building placement and use the example setback standards in this chapter.

(S) 4.3 Building Equipment, Utilities & Service Areas

- Building equipment, utilities and service areas are in effective locations for the building and service providers while maintaining an appealing environment on-site and along the adjacent public realm.
- Utilities and building equipment are screened from public view along the public realm.
- Rooftop equipment is located toward the center of the roof area and screened from the street.
- Service areas are located toward the rear or along the interior side of parcels.

(S) 4.4 Design-Sites

- Design-sites are used to arrange two or more buildings on a single parcel so that the buildings front the public realm.
- New community open spaces (greens and plazas) and thoroughfares (paseos and streets) continue the public realm network into a development site and are used to orient the buildings.
- Existing superblocks are divided into walkable blocks that interconnect with the existing block and street network to increase walking, biking and driving routes.
- New blocks are defined by the public realm network and relate to the adjacent scale of development (existing or intended).

(E) ESSENTIAL TOPIC

(S) SUPPLEMENTAL TOPIC

E ESSENTIAL TOPIC

4.1 Vehicle Access & Parking

PLACETYPE		
Neighborhood	●	●
Corridor	●	●
Center	●	●

INTENT

Locate parking areas and vehicular access away from the public realm to generate continuous, tree-lined streetscapes oriented to pedestrians.

GUIDANCE

PARKING LOCATION

- Locating parking behind the building, not between the building and adjacent streetscape/sidewalk, creates a more pedestrian-oriented public realm.
- Temporary parking and/or drop-off areas are typically located to the sides(s) of buildings or in a feature, such as a porte-cochere, that maintains a physical connection with the adjacent streetscape.

VEHICLE ACCESS

- Vehicular access is located to not conflict with pedestrians and bikes and to not visually dominate the streetscape.
- If alley or side street access exists, vehicle access is not at the front to maintain the front of each building as pedestrian-oriented and free of parked vehicles.
- Using shared driveways for multiple buildings on a lot or between abutting lots minimizes driveways intersecting with sidewalks.
- Driveway sizes are determined according to the depth of the parcel to avoid unnecessarily wide driveways and to lessen the impact of wide driveways on the maximum building footprint.
- Corner lots can achieve more efficient site planning by orienting vehicle access along the side street when no alley is present.

CLOSER LOOK

Driveway Size

- In **house-scale** contexts, lots up to 150 feet deep and up to 75 feet wide can typically accommodate about 4 to 8 at-grade parking spaces. These lots are best served by a single-lane driveway up to 10 feet wide. In these situations, two-way traffic, although possible, is not the concern it is on a larger lot with more vehicular activity.
- In **house-** and **block-scale** contexts, lots wider than 75 feet can accommodate a driveway at both sides of the lot, or a driveway with a porte-cochere parallel to the street. Depending on the number of parking spaces (typically more than 25) and depth of the lot, a two-lane driveway may be necessary.

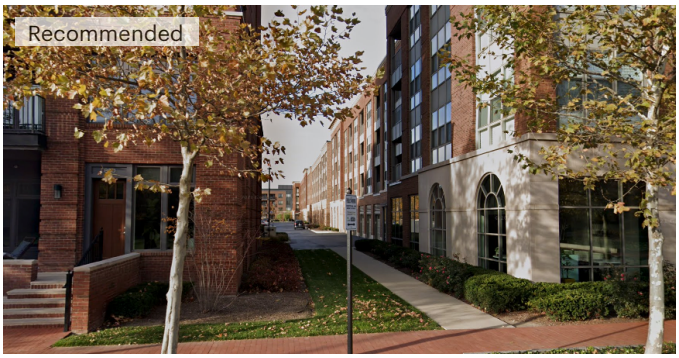
PARKING ENTRANCE DESIGN

- Along front and side street façades, minimize the presence of parking by controlling the width of the garage entry: 9 feet for single doors and up to 20 feet for entrance to a parking garage with less than 50 spaces (25 feet for more than 50 spaces).
- Parking for townhouses and other housing types with direct access from their garage to the unit is typically accessed by a rear shared driveway to avoid a streetscape of driveways and curb cuts interrupting the public realm.
- Enclosed parking and garage doors facing the street are typically setback behind the building façade in **house-scale** contexts (five feet min. for single stall; 20 feet min. for double-stall).
- In **block-scale** contexts, the garage entry can be near or at the sidewalk if the grade is relatively flat to enable visibility. If not relatively flat, the entry is typically setback at least 15 feet.

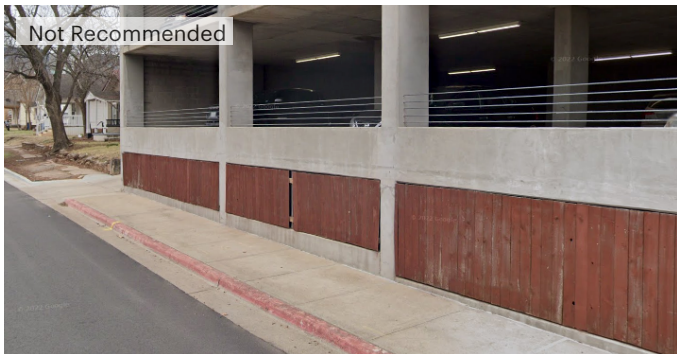
SURFACE PARKING LOT DESIGN

- Consider adjacencies along parking lot edges in the parking lot design.
- Landscaping and/or a low wall to shield vehicle lights is used to minimize light intrusion from vehicles into habitable spaces near parking spaces.
- Including shade trees for hardscaped/paved areas mitigates the potential heat island effect in parking areas.
- Use lighter colors and/or permeable materials for paved areas and hardscaped areas to reduce heat gain in parking areas.

Guidance Example: Parking Location



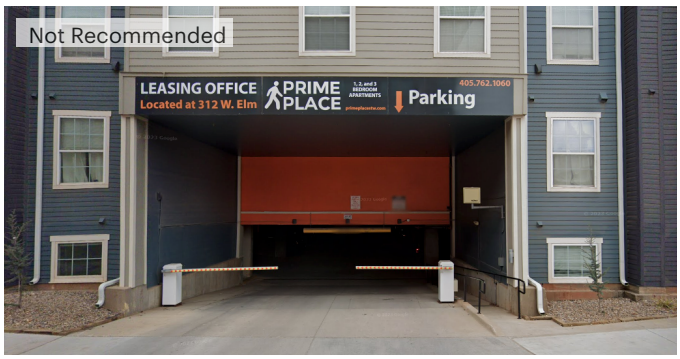
The pedestrian environment is more comfortable and appealing when the ground floor is occupied with uses other than parking.



Parking abutting or near the sidewalks does not create a comfortable or appealing pedestrian environment and can negatively affect the visual appeal of other properties.

Guidance Example: Parking Entrance Design

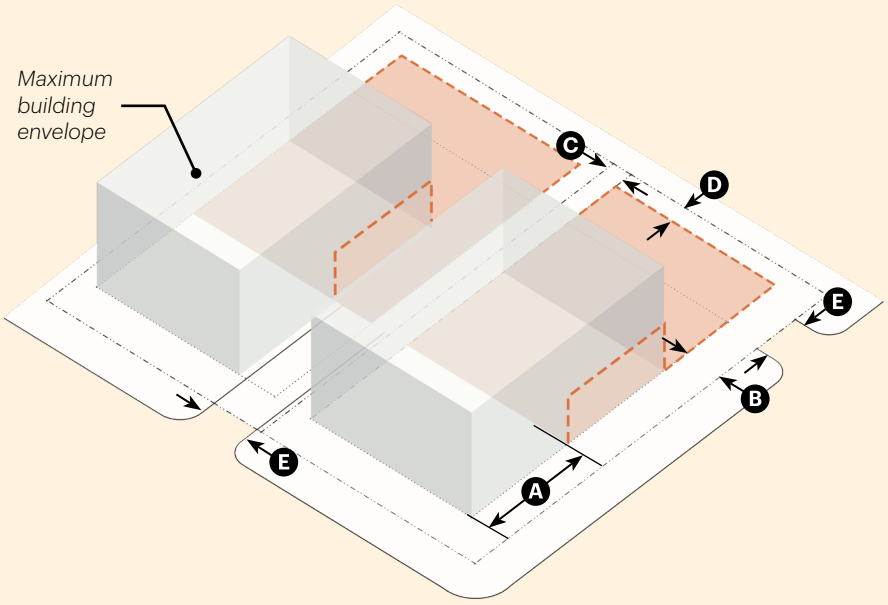
The parking entrance contributes to the overall design of the building and does not dominate the streetscape.



The parking entrance dominates the streetscape and makes the ground floor of this building visually unappealing.

Example Standards

Vehicle Access & Parking



REQUIRED STANDARDS

Setback	A Front	B Side St.	C Side	D Rear
Residential	15' to 25'	At least 10'	At least 5'	At least 5'
Non-Residential	20' to 50'	At least 0'	At least 0'	At least 5'
Subterranean Parking	At least 0'	At least 0'	At least 0'	At least 0'
Access				
Front Street	Allowed; Must be located along side of lot (within 20' of lot line) and at least 50' from another driveway (curb cut edge).			
Side Street	At least 40' to 60' from front lot line			
Rear (Alley)	Allowed			
Parking Entrance				
Curb Cut Width				E
One-Way	10' to 12'			
Two-Way	16' to 20'			
Access from Alley	May exceed 20'			

ADDITIONAL STANDARDS

Driveways may be shared between adjacent parcels.
Parking and loading areas shall be screened from adjacent residential zones by a 6' wall, fence, or evergreen.
Screening is not required when parking area(s) is adjacent to an alley.
Landscape buffer at least 5' in depth is required along property line(s) for the length of the parking area

S SUPPLEMENTAL TOPIC

4.2 Building Placement

PLACETYPE	
Neighborhood	●
Corridor	●
Center	●

INTENT

Buildings are intentionally placed on lots to face and shape the public realm.

GUIDANCE

This Handbook assumes that jurisdictions are not changing their building setbacks. The following guidance is provided if changes to setbacks are desired.

BUILDING SETBACKS

- Regulate infill development to result in a cohesive built-form environment on both sides of a street so that it's perceived as a cohesive “outdoor room."
- Enhance historically and/or culturally significant buildings and places through transition areas that refine setbacks, height and massing of new buildings.
- Generate cohesive infill development along a block through new building façades within a range of the prevalent setback along the block face.

FAÇADE ZONE

- A "build-to-line" is not recommended beause it does not provide the flexibility that the façade zone provides.
- Allowing a proposed façade to be placed anywhere within the façade zone (along front and side street setback) and not restricting its shape if it is in the specified setback range enables design creativity while maintaining orderliness as buildings are placed within the same general range of front setback.
- The façade zone is based on how close or far individual buildings need to be in each zoning district to shape the intended public realm. In **Centers**, it's going to be between zero to 10 feet. In **Neighborhoods** and **Corridors** it’s going to start about 10 or 15 feet depending on the specific context.

CLOSER LOOK

Façade Zone Buildout

The amount of façade required within the façade zone is based on the intended physical context—less in **Neighborhoods** and more in **Centers** and **Corridors**. Some codes include 'build-to-line' standards. This is an effective standard if the expected streetscape is of buildings all at the same setback. The façade zone provides for flexibility in design and in the resulting streetscape.

For example, in pedestrian-oriented **Centers** and **Corridors** where side setbacks are minimal to none, more front and side street façades are expected along the streetscape in these environments (e.g., at least 80%). In **house-scale Neighborhoods** where side setbacks are larger than in **Center**s and **Corridor**s, a lower amount of façade is typically required in the façade zone (e.g., between 60% and 75%). In **block-scale Neighborhoods**, the amount is typically higher (e.g., at least 80%).

The façade zone percentage is calculated on the buildable width between the required setbacks. Encroachments into the façade zone are allowed (e.g., building frontages, bays, stairs).

LOT COVERAGE

- Help control building size depending on the intended context.
- In **house-scale Neighborhoods**, it is recommended to more closely control building size for two reasons:
  - a) in these environments, there is a general expectation that buildings be clearly detached on all four sides and
  - b) the technique of lot coverage can produce compliant buildings that still appear too large for these environments, mostly due to the size of their footprint.
- For **house-scale buildings**, it is recommended to regulate building footprint instead of lot coverage.
- Coordinate building footprint standards with the range of existing lot sizes being regulated.
- In **block-scale Neighborhoods, Corridors** and **Centers**, buildings are expected to fill most or all of the lot. Increase lot coverage in **Corridors** and **Centers** up to 100 percent and up to 75 percent in **Neighborhoods**.

CLOSER LOOK

Building Footprint in House-Scale Neighborhoods

Building footprint standards can be as nuanced or simple as necessary depending on need but they need to reflect actual and/or intended building lengths and depths. For example, a **house-scale Neighborhood** might have a clear pattern of building footprints that are between 30 and 40 feet wide by 40 to 50 feet deep while another neighborhood might have footprints that are 24 to 32 feet wide and 35 to 40 feet deep. For efficiency purposes, it might be tempting to lump both sizes from these different neighborhoods into one grouping. But doing so would allow buildings that are too wide or too deep in the neighborhood with currently smaller buildings. Understanding the prevalent size of buildings in the **house-scale Neighborhoods** where infill is expected is key to preparing effective building footprint standards.

ECONOMIC FEASIBILITY INSIGHT

BUILDING PLACEMENT | LOT COVERAGE

COST CONSIDERATIONS

Given land costs are high in the Bay Area region, to achieve financial feasibility projects must maximize the number of leasable/salable units on a site. Standards that reduce this revenue potential for a project have a high opportunity cost. This is especially true for smaller, more constrained infill sites. The proposed lot coverage in 4.2 Building Placement allows for a high buildable area, which improves project feasibility.

HARD COSTS ($)

Any area beyond the maximum lot coverage must be programmed with parking, hardscape, or landscaping. All of these features have an associated cost for materials and generally do not generate revenue for a project.

SOFT COSTS (-)

This standard is unlikely to directly impact soft costs, unless developers need to submit variance applications.

OPPORTUNITY COSTS ($$$)

More restrictive lot coverage standards can reduce the leasable floor area that can be achieved on a site. This reduction in revenue-generating square footage has a direct impact on the potential profit of a project.

CLOSER LOOK

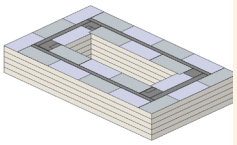
Potential Impacts of Lot Coverage Standards

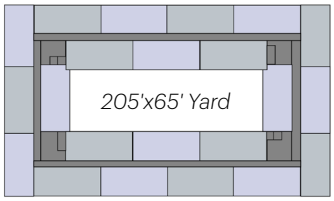
Developers and architects voiced concerns on the potential for lot coverage standards to limit the overall size and leasable area of a building. Some shared scenarios where a restriction on building footprint size necessitated adding floors to meet leasable area targets. This, in turn, required a more costly construction method—the jump from four to five stories triggers a different construction type with additional fire sprinkler systems and material combustability requirements. When faced with this predicament, more often than not, a developer will choose to forego additional heights and units to avoid switching to a more costly construction type and ultimately, may choose to not pursue a project.

Developers and architects also noted that limiting a project's footprint can rule out more efficient building forms like "double-loaded corridor" or "point access" building types. These building types have specific requirements for wing widths and floor plate sizes. If lot coverage standards reduce the area available on a lot, they have the potential to make these more efficient and cost-effective buildings impossible to build.

Double Loaded Corridor

5 Floors
110 Homes



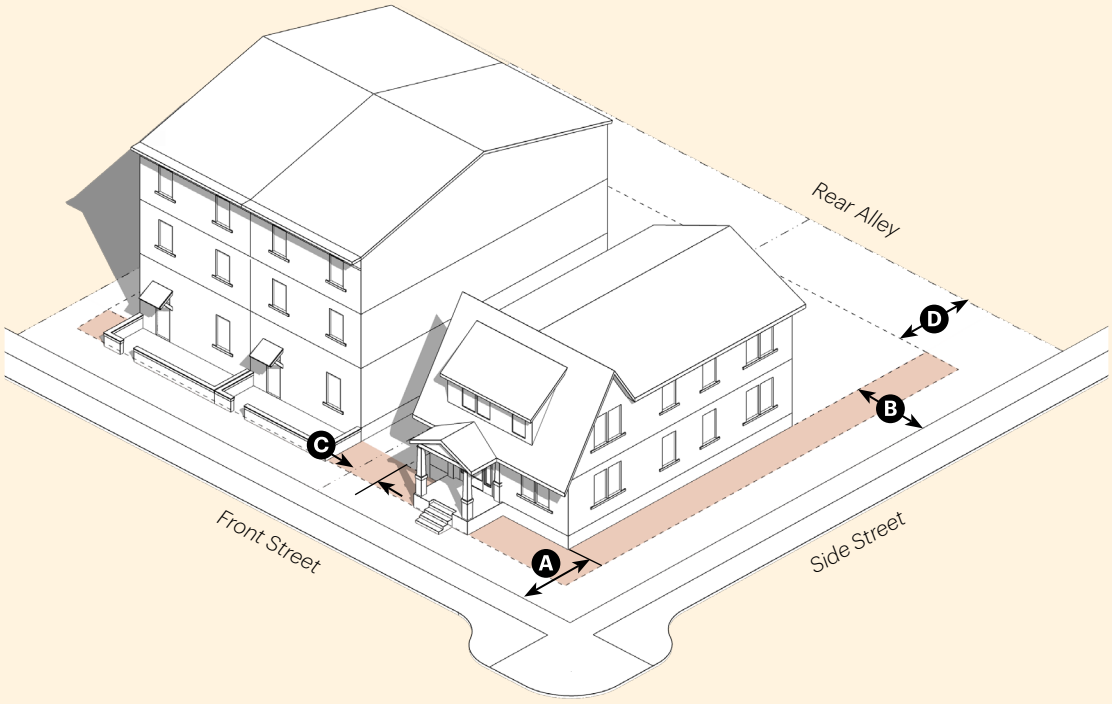


84% of floor area is in units

Image Credit: Alfred Twu

Example Standards

Building Placement: Neighborhoods



REQUIRED STANDARDS		
Setback		
Front (Façade Zone)		A
Interior Design-Site	10' to 20'	
Corner Design-Site	10' to 20'	
Side Street (Façade Zone)		B
Primary Building	10' to 20'	
Accessory Structures	10' to 15'	
Side		C
Primary Building	5' to 7'	
Accessory Structures	5' to 7'	
Rear		D
Primary Building (no alley)	20' to 25'	
Primary Building (w/ alley)	10' to 15'	
Accessory Structures	5' to 7'	

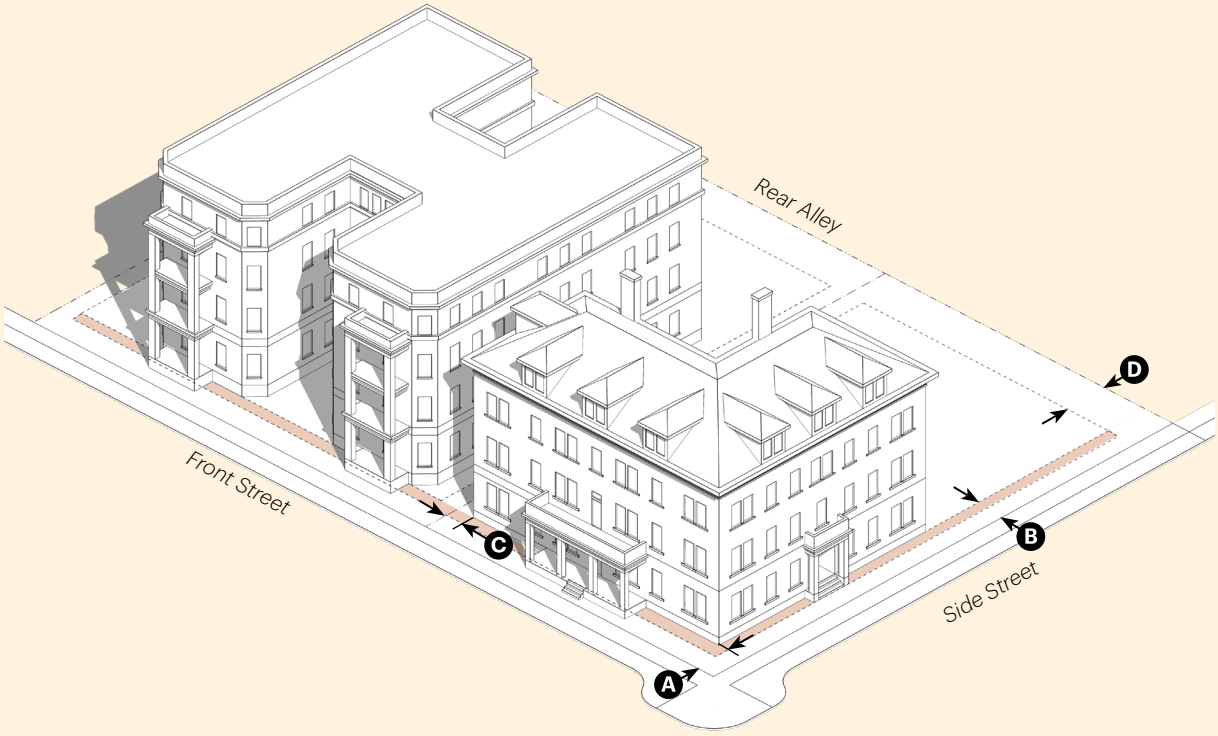
REQUIRED STANDARDS (CONT'D)		
Lot Coverage		
Max. Building Footprint		
House-scale	35' to 60' wide x 40' to 80' deep[1]	
Block-scale	At least 50' wide x 15' less than lot depth	
Façade Zone		
Buildout	**Front**	**Side St.**
Total length of façade required within or abutting façade zone	At least 65%	At least 55%

ADDITIONAL STANDARDS
Building Frontage Types are allowed to encroach into required building setbacks.

1 Includes wing(s).

Example Standards

Building Placement: Corridors



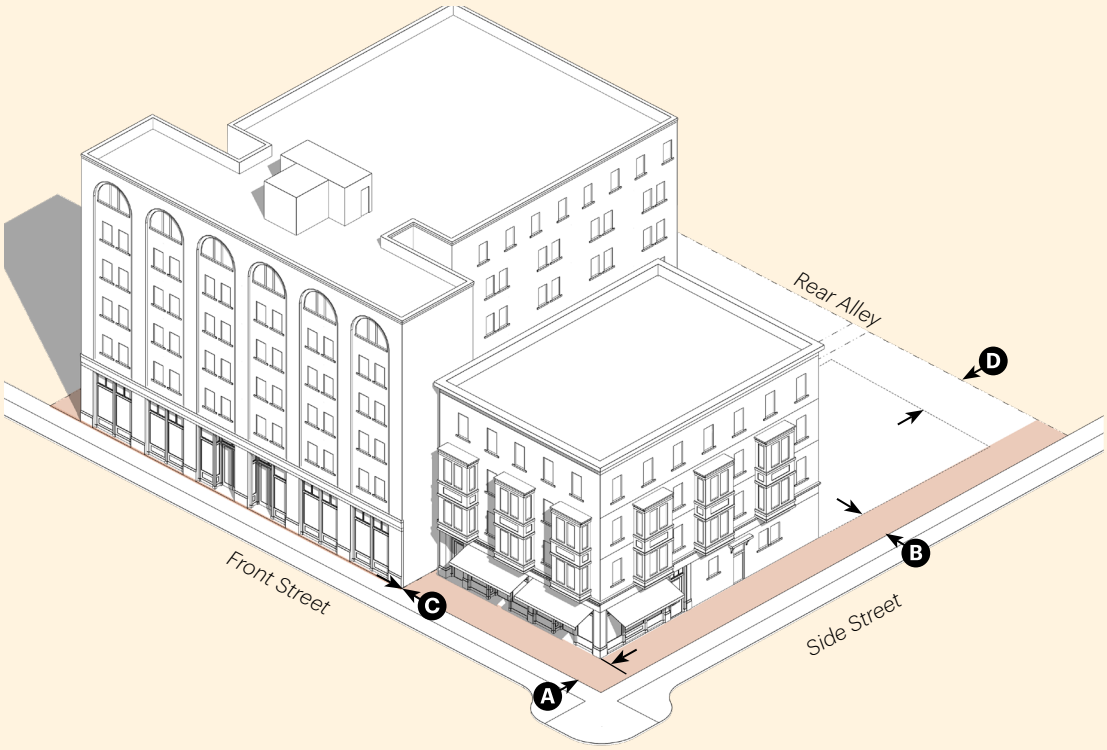
REQUIRED STANDARDS		
Setback		
Front (Façade Zone)		A
Interior Design-Site	7' to 10'	
Corner Design-Site	7' to 10'	
Side Street (Façade Zone)		B
Primary Building	5' to 10'	
Accessory Structures	10' to 15'	
Side		C
Primary Building	5' to 7'	
Accessory Structures	5' to 7'	
Rear		D
Primary Building (w/o alley)	15' to 20'	
Primary Building (w/ alley)	5' to 7'	
Accessory Structures	5' to 7'	

REQUIRED STANDARDS (CONT'D)		
Lot Coverage		
Max. Building Footprint		
House-scale	35' to 60' wide x 80' deep	
Block-scale	At least 50' wide x 15' less than lot depth	
Façade Zone		
Buildout	**Front**	**Side St.**
Total length of façade required within or abutting façade zone	At least 80%	At least 70%

ADDITIONAL STANDARDS
Building Frontage Types are allowed to encroach into required building setbacks.

Example Standards

Building Placement: Centers



REQUIRED STANDARDS		
Setback		
Front (Façade Zone)		A
Interior Design-Site	At least 0'; Up to 10'	
Corner Design-Site	At least 0'; Up to 10' max.	
Side Street (Façade Zone)		B
Primary Building	At least 0'; Up to 10' max.	
Accessory Structures	At least 0'	
Side		C
Primary Building	At least 0'	
Accessory Structures	At least 3'	
Rear		D
Primary Building (no alley)	At least 10'	
Primary Building (w/ alley)	At least 5'	
Accessory Structures	At least 5'	

REQUIRED STANDARDS (CONT'D)			
Lot Coverage			
Maximum Building Coverage	**Lot Size**		
	Less than 75' x 150'	Up to 100' x 200'	More than 100' x 200'
House-scale	30 to 50%	25 to 50%	Multiple Buildings
Block-scale	Up to 85%	Up to 95%	
Façade Zone			
Buildout		**Front**	**Side St.**
Total length of façade required within or abutting façade zone		80 to 100%	At least 60%

ADDITIONAL STANDARDS
Building Frontage Types are allowed to encroach into required building setbacks.

Ⓢ **SUPPLEMENTAL TOPIC**

4.3 Building Equipment, Utilities & Service Areas

PLACETYPE		
Neighborhood	○	●
Corridor	●	●
Center	●	○

INTENT

Strategically locate and screen service areas and mechanical equipment to minimize sound, air quality/temperature and visual impacts on nearby dwellings and the public realm.

GUIDANCE

- Locate utility vaults/boxes, water backflow preventers, air conditioner compressors and other equipment away from the front building façade and streetscape to visually enhance the public realm.
- Integrate utility vaults/boxes with the design of the building and use similar architectural materials to minimize the visual impact of the equipment.
- Enhance the streetscape by screening all mechanical equipment and storage of refuse and recycling containers from view of the sidewalk.
- Promote visual cohesion in a project by coordinating the screening material and color with those used on the building(s).
- Visually integrate massing of screening with the overall massing of the building through the height, size, location and attachment of the screening to the building to minimize its impact.
- Use sound-insulating materials such as masonry to provide sound insulation for top-story units from rooftop mechanical equipment.

Example Standards

Utility Cabinets, Meters & Backflow Preventers

REQUIRED STANDARDS

Utility cabinets and meters shall be contained within the building, or fully screened from public view by a solid wall of height at least equal to that of the utility cabinet or meter.

- Transformers proposed between the front or side street façades and the sidewalk shall be contained in below-grade vaults.
- Grade-level transformers shall be fully screened from public view by a solid wall of height at least equal to that of the transformer.
- Backflow preventers and fire department connections (FDC) within 50 feet of a public right-of-way shall be screened from the public right-of-way by landscaping of equal height and width as the backflow preventer and/or FDC.

Example Standards

Mounted Equipment

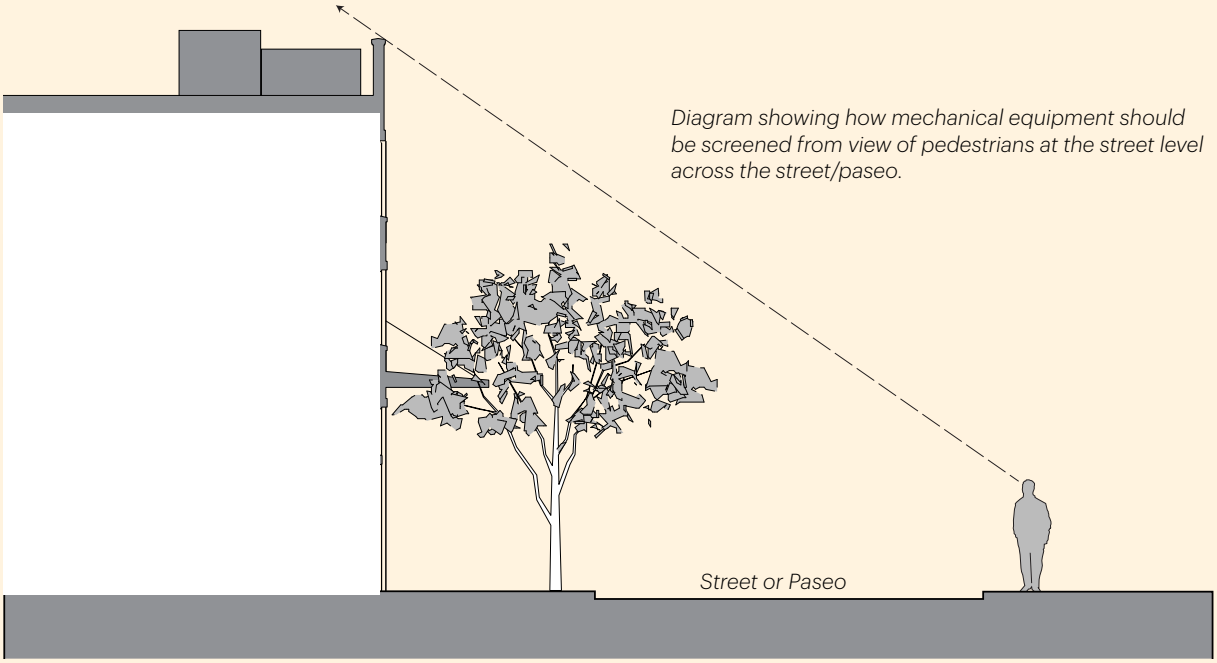


Diagram showing how mechanical equipment should be screened from view of pedestrians at the street level across the street/paseo.

REQUIRED STANDARDS
Roof-Mounted Equipment
Building parapets or other architectural elements in the building's architectural style shall screen roof-mounted equipment from view of pedestrians at street level across the street/paseo.
• New buildings shall be designed to provide a parapet or other architectural element that screens any rooftop equipment from view of pedestrians at street level across the street/paseo. • New mechanical equipment shall be located away from edge of roof so as not to be visible from view of pedestrians at street level across the street/paseo or be surrounded on all sides by an opaque screen as tall as the highest point of the equipment.
Wall- and Ground-Mounted Equipment
Equipment is not allowed between front or side street façades and the street.
• All screen devices shall be as tall as the highest point of the equipment being screened. • Grade-level equipment and screening shall be in compliance with the setbacks of the zoning district. • Screening materials shall be of the same materials and finishes as the main building. • Plant materials, when used as a visual screen, shall be consistent with the approved list of plant materials of the local jurisdiction and located in a planter at least three feet wide.

Ⓢ SUPPLEMENTAL TOPIC

4.4 Design-Sites

PLACETYPE	
Neighborhood	● ○
Corridor	● ○
Center	● ○

INTENT

On sites large enough for multiple buildings in areas of detached buildings, arrange multiple buildings on a development site to achieve a built outcome that fits the pattern of detached buildings in the area.

GUIDANCE

DESIGN-SITES

Design-sites are used for projects with two or more primary detached buildings planned for a single development site.

- Each design-site represents a lot that contains one primary building as if the site were subdivided.
- Each design-site and subsequently the building within it, must front the public realm.
- Building setbacks are applied to the design-site.
- Parking is located at the rear of or grouped behind design-sites.
- On large sites typically over 4 acres or over 700 feet in length (e.g., superblocks and parcels beyond the typical walkable block in many communities), using design-sites provides flexibility for parcelization, if desired.

COMMUNITY OPEN SPACES

- Provide usable open space that is fronted by buildings with an active ground floor.
- On development sites large enough for extensions of the public realm into the project site, new community open spaces provide frontage opportunities.
- Design each community open space as a focal point for community gatherings and passive recreation.
- See Chapter 5 Open Space for further guidance and standards on community open space types, Greens and Plazas.

STREETS AND PASEOS (THOROUGHFARES)

- Expand the pedestrian, bike and vehicular circulation network providing additional routes.
- On development sites large enough for extensions of the public realm into the project site, new streets and/or paseos provide frontage opportunities.
- Paseos are an alternative to a street for dividing superblocks while maintaining a pedestrian environment.
- Alleys provide vehicular access from the existing or new street or paseo to parking behind the buildings. This helps maintains a continuous public realm/streetscape.

CLOSER LOOK

Designing with Design-Sites

The following general steps illustrate how to apply design-sites to a large infill site where street connections through abutting parcels are not possible. Two examples are shown to illustrate different possible outcomes.

Step 1: Existing Development Site

The public realm is along the existing street (Front Street).

Step 2: Extend the Public Realm

With a new thoroughfare (example A) or new community open space (example B), the public realm is extended into the development site.

Step 3: Create Design-Sites

Design-sites are created to front the public realm along Front Street and the new thoroughfare (example A) or new community open space (example B). Design-site width and depth differ based on the intended building size/ form (see Ch 4.2 Building Placement for dimensional standards).

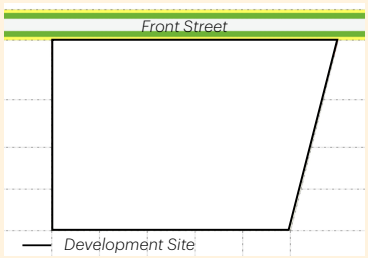
Step 4: Place Buildings

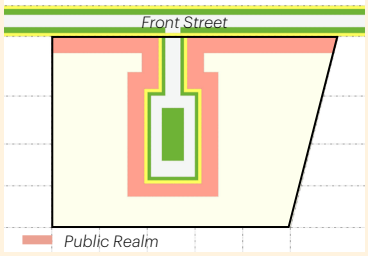
One primary building is placed on each design-site, fronting the public realm.

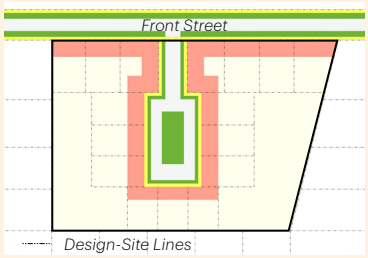
Step 5: Locate Parking

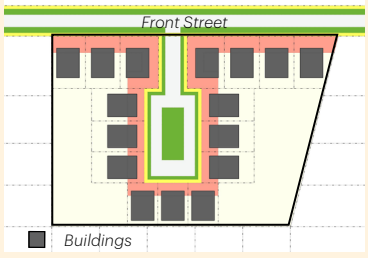
On-site parking is located on each design-site behind buildings, at the rear or grouped behind design-sites. Parking is accessed via driveways or alleys that connect from the existing or new thoroughfare.

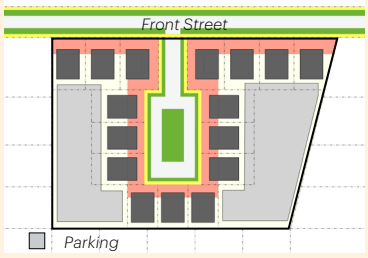
Example A



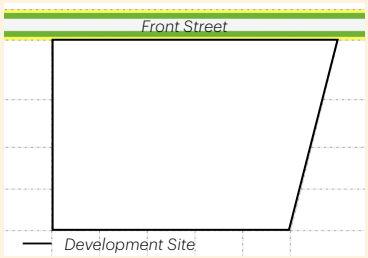


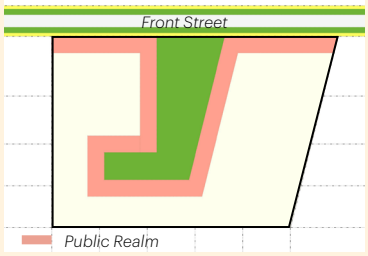


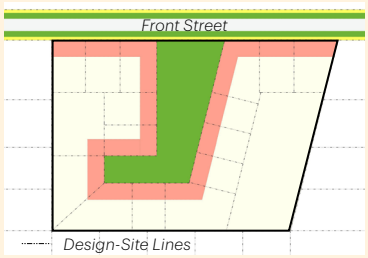


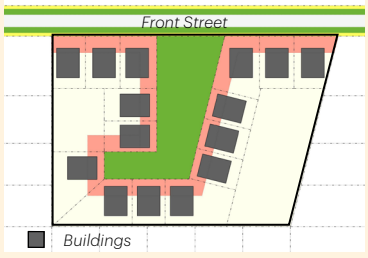


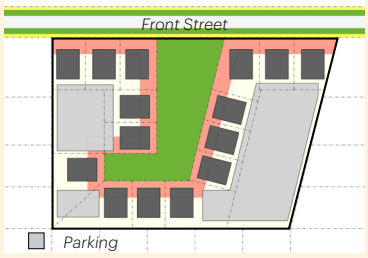
Example B











Example Standards

Design-Sites

REQUIRED STANDARDS				
Development Site Includes				
More than 1 primary building	**New thoroughfare and/or community open space**	**4 to 10 acres**	**Over 10 acres**	**Standards**
•	•	•	•	Design-sites shall be used to organize the development site. Each design-site shall include only one primary building and front the public realm.
	•	•	•	Design-sites shall front the public realm of new thoroughfares and/or community open spaces and the existing public realm.
	•	•	•	Where new blocks are created, the blocks shall be defined on all sides by public realm except where attaching to an existing block and not exceed 500' on any side.
		•	•	5% of the gross area (minus existing easements) shall be designed as community open space.
			•	At least 2 zones shall be applied to the resulting design-sites to achieve a broader mix of buildings and housing choices.

CLOSER LOOK

New Blocks and Block Size

- The creation of new blocks increases the number of routes for walking, biking and driving. An interconnected network of streets and/or paseos and/or community open spaces is used to divide superblocks (i.e., parcels over 700 feet along any street or deeper than 500 feet from the street to the back of the parcel) into new smaller, walkable blocks.
- To determine the block size that works for your context, look to adjacent or nearby block sizes to continue that pattern. Generally, the appropriate block size(s) depends on the intended environment. For **block-scale Centers** and **Neighborhoods**, blocks are between 400 and 600 feet long to accommodate large buildings. For **house-scale Centers** and **Neighborhoods,** blocks are between 300 and 500 feet long.
  Along **Corridors**, new blocks are typically only a half-block in depth but will range in length depending on the intended environment. For **Corridors**, use the above guidance for **Centers** and **Neighborhoods**.

Blocks defined by interconnected network of streets and paseos (high connectivity)

Disconnected streets and paseos (low connectivity)

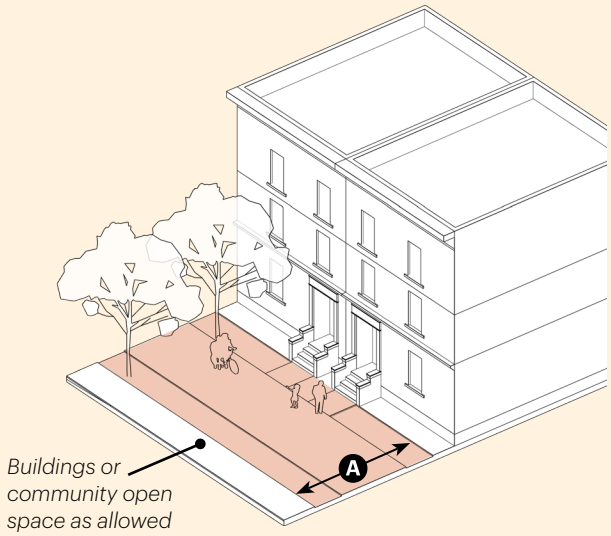
CLOSER LOOK

Streets and Paseos

- In environments of primarily **house-scale buildings**, streets and paseos typically include more landscaping and less hardscape; where mostly **block-scale buildings** prevail, streets and paseos typically include more hardscape than landscape with an emphasis on street trees.
- In many cases, bicycles can be accommodated in the traffic lanes (i.e., sharrow). Bicycle lanes can be added to create a safer biking environment and a more comfortable public realm.

Example Standards

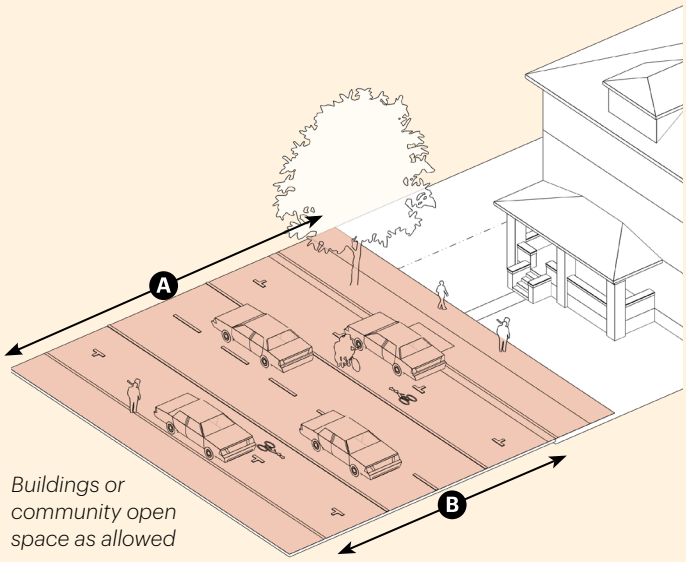
Paseo



REQUIRED STANDARDS		
Application		
Movement Type	Pedestrian, Bicycle, Emergency Vehicle Access	
Design Speed	20 to 25 mph	
Overall Widths		
Right-of-Way (ROW)	26' to 36'	A
Curb-to-Curb	Variable, flush	
Lane Assembly		
Traffic Lanes	None	
Bicycle Lanes	8' to 10', unmarked	
Parking Lanes	None	

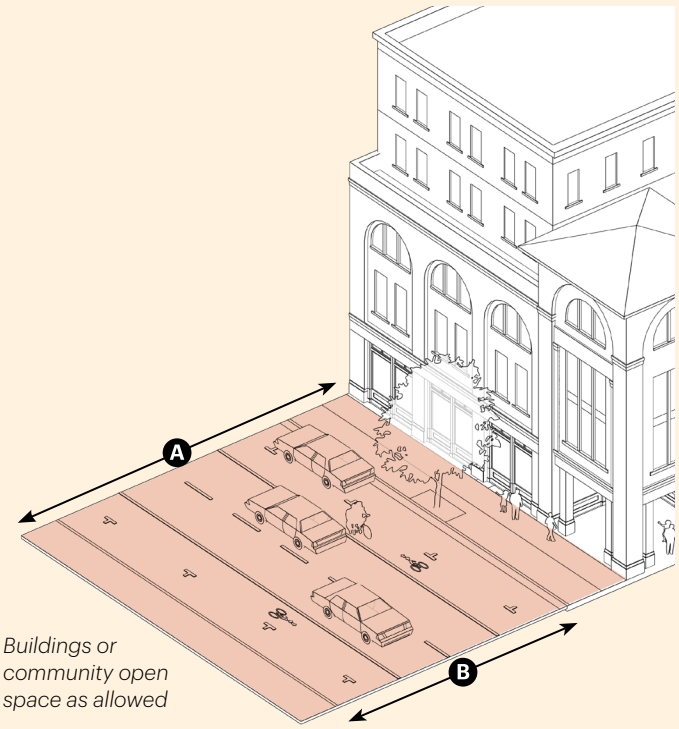
Example Standards

Neighborhood Street



REQUIRED STANDARDS		
Application		
Movement Type	Slow vehicles	
Design Speed	20 to 25 mph	
Overall Widths		
Right-of-Way (ROW) Width	34' to 58'	A
Curb-to-Curb Width	26' to 48'	B
Lane Assembly		
Traffic Lanes	8' to 10' each	
Bicycle Lanes	5' to 7'	
Parking Lanes	7' to 9'	

Mixed-Use Street



REQUIRED STANDARDS		
Application		
Movement Type	Slow vehicles	
Design Speed	20 to 25 mph	
Overall Widths		
Right-of-Way (ROW) Width	46' to 72'	A
Curb-to-Curb Width	26' to 48'	B
Lane Assembly		
Traffic Lanes	8' to 10' each	
Bicycle Lanes	5' to 7'	
Parking Lanes	7' to 9'	

Ch. 5
Open Space

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5.1 Community Open Spaces 124

5.2 Shared Open Spaces 126

5.3 Private Open Spaces 130

5.0 Why Open Space Matters

OPEN SPACE FOR PASSIVE AND/OR ACTIVE RECREATIONAL OPPORTUNITIES CONTRIBUTES TO A HEALTHIER ENVIRONMENT AND LIFESTYLE FOR RESIDENTS AND COMMUNITY MEMBERS.

Open space is provided based on the project/building size and physical context to further enhance the public realm and living on-site.

Three types of open spaces—community open spaces, shared open spaces, and private open spaces—are coordinated with building size (**house-scale and block-scale**), location and physical features, such as topography, to provide the appropriate type(s) of open space while not creating new barriers to housing production. Each open space type has the following subtypes:

- Community Open Spaces: Green and Plaza (publicly accessibly, privately owned and maintained)
- Shared Open Spaces: Rear Yard, Courtyard, and Rooftop Deck
- Private Open Spaces: Individual Patio and Balcony

Example of Green (Community Open Space) with play equipment.

DESIGN PRINCIPLES

The following principles inform the guidance and example standards in this chapter.

(E) 5.1 Community Open Spaces

- Community open spaces are provided in larger developments that could change the existing scale or residential intensity of the immediate surrounding area. For instance, sites over four acres change from **house-scale to block-scale** or from four-story **block-**scale to eight-story **block-**scale.
- The physical character of greens includes more natural elements (i.e., more landscape). Greens are typically located in **house-scale and block-scale Neighborhoods**.
- The physical character of plazas is very urban (i.e., more hardscape). Plazas are typically located in a **block-scale** context.
- Streets and pedestrian crossings need to be prioritized over vehicular movement to ensure a walkable environment.
- Buildings facing a community open space contribute to an active public realm through an active ground floor and entries connected to the public realm.

(E) 5.2 Shared Open Spaces

- Shared open spaces are at the scale of an individual building.
- These spaces generally are located relative to the building being served: behind a building (rear yard), within a building (courtyard), and atop a building (rooftop).
- Generally, these spaces are included in **house-** and **block-scale** buildings.

(S) 5.3 Private Open Spaces

- These types of spaces are at the scale of an individual building.
- These spaces generally are in two categories: at-grade spaces attached to individual units (patio) and spaces attached to individual units on upper stories (balcony).
- Generally, these spaces can be included in **house-scale** and **block-scale** buildings.

(E) **ESSENTIAL TOPIC**

(S) **SUPPLEMENTAL TOPIC**

E **ESSENTIAL TOPIC**

5.1 Community Open Spaces

PLACETYPE		
Neighborhood	○	○
Corridor	○	●
Center	○	●

INTENT

Provide privately owned public open space (POPOS) beyond the needs of the development project.

GUIDANCE

Community open spaces are provided in larger developments (over about four acres) and are purposefully designed as a community-wide amenity with gathering and recreational space. When a development is wider or deeper than a typical block size, including a community open space and creating new smaller blocks enables walkability.

GREEN

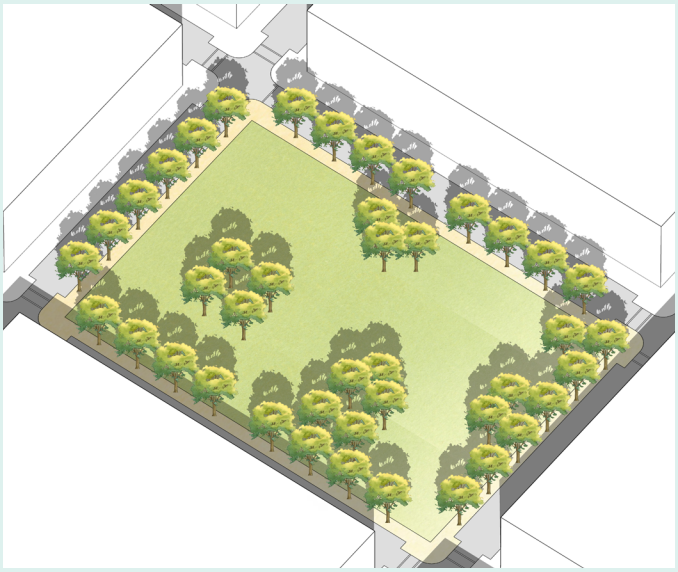
- Greens are more appropriate in neighborhoods, from **house-** to **block-scale** contexts.
- Greens vary in size and are park-like in physical character with natural turf and plantings of trees and shrubbery (not in planters). Where furniture is provided, it is minimal and typically fixed.
- Greens are generally defined by tree-lined thoroughfares and adjacent buildings. In very large developments, greens can span multiple blocks to create a linear park.
- Play and exercise equipment is often located within a green, offering a variety of activities for a wider range of users.
- Greens are generally used for passive uses and limited active recreational uses.

PLAZA

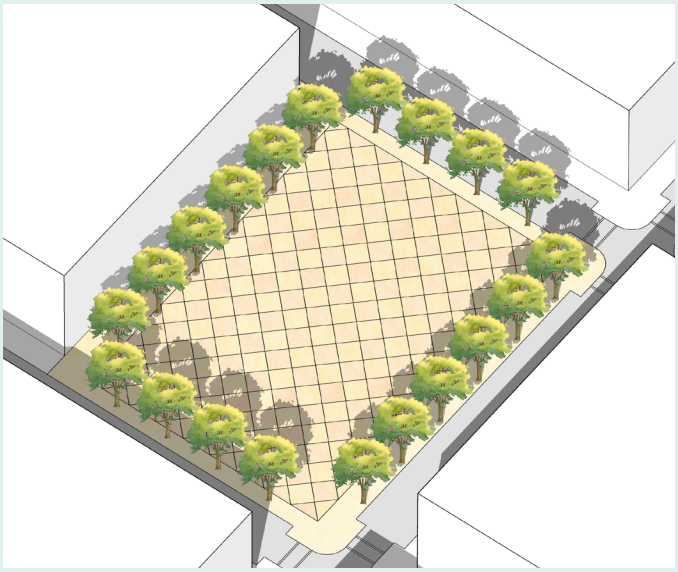
- Plazas are more appropriate in higher intensity **block-scale Neighborhoods, Corridors** and **house-scale and block-scale Centers**.
- Plazas vary in size and in physical character: some are mostly landscaping with wide sidewalks while others are more hardscaped with trees and other landscaping in tree wells or planters. Planters often also serve as seating opportunities. Plazas that are more hardscaped benefit their users greatly by having at least one-quarter of the area in landscaping with trees.
- Plazas are generally defined by the surrounding buildings. However, in very large developments, plazas can be the entirety of a small block and are defined by tree-lined thoroughfares.
- Outdoor furniture is often found in plazas, typically associated with ground floor businesses adjacent to the plaza. The furniture can be fixed or movable.
- Plazas are prime locations for active uses associated with ground floor shops and/or restaurants because of the high visibility and pedestrian activity in these spaces.

Example Standards

Green



Plaza



REQUIRED STANDARDS		
	Green	**Plaza**
Size	At least 5,000 sf with one side at least 50'	At least 50' x 50'

ADDITIONAL STANDARDS
Thoroughfare is required on at least one side of the open space.
New buildings, or portions thereof, abutting or across the street from the open space shall include building frontage(s) along the ground floor.
Building frontages that abut the open space are allowed to encroach into the open space by up to five feet.
Open space may be closed after business hours or at night consistent with city park hours of operation.
Trees are required along the perimeter of the open space adjacent to a public sidewalk.

CLOSER LOOK

Location Considerations for Community Open Spaces

Locating a community open space on the south- and/or west-facing side(s) of a block maximizes sun exposure. To maximize visibility and access, community open spaces are typically located at the corner of two thoroughfares (two streets or one street and a paseo). However, they also work well in mid- and end-block locations when the space is publicly visible and accessible.

E ESSENTIAL TOPIC

5.2 Shared Open Spaces

PLACETYPE		
Neighborhood	○	●
Corridor	●	●
Center	●	●

INTENT

Enhance common open space(s) to accommodate passive and/ or active uses and green space for the building's residents.

GUIDANCE

Shared open spaces primarily serve the residents of individual buildings and are located on-site. Their size and location depend on the scale, intensity, and type of building. Shared open space is generally not required if there is an existing community open space within a short walking distance of the building (e.g., 1,000 feet).

REAR YARD

- Rear yards are typically associated with smaller, **house-scale buildings**, reflecting the pattern of rear yards in low-intensity **house-scale Neighborhoods**.
- The rear yard is attached to the building and not separated from it by a parking area in between. This creates a more attractive and usable space with convenient and safe access to the space from the building.
- The depth of the rear yard varies depending on existing patterns of building placement within a lot. It is important to keep in mind when selecting a minimum that the rear yard should be deep enough to be perceived as more than a side setback.

COURTYARD

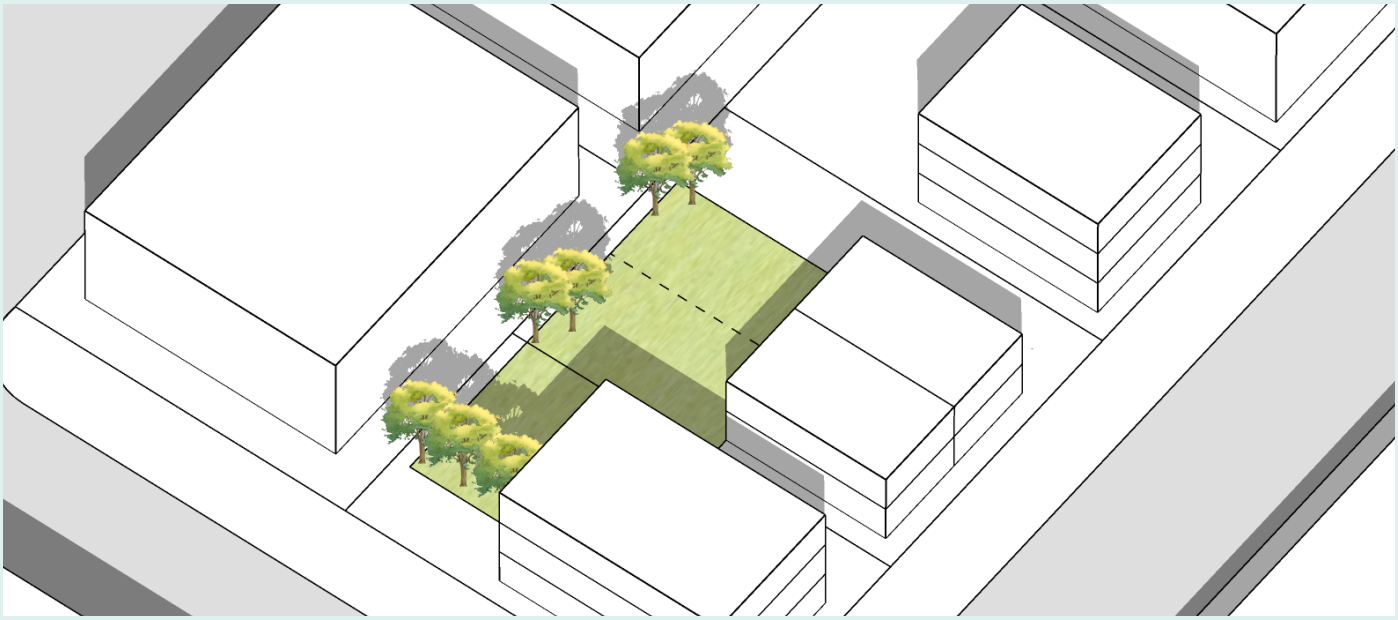
- A courtyard is defined by its surrounding building(s) and the building's shape; L-shape, U-shape, or O-shape.
- Courtyards are appropriate for **house-scale and block-scale buildings in house-scale and block-scale** contexts.
- In **house-scale** contexts, the courtyard is open to the street, softening the building's presence along the streetscape to be of similar scale to the neighboring houses.
- In **block-scale** contexts, the courtyard is typically not visible from the street because the building front is at or near the sidewalk and the building occupies most or all of the lot width. The internal courtyard has direct access from the street via a pedestrian path.

ROOFTOP DECK

- Rooftop decks require a flat roof, or a portion thereof, and are typically not enclosed.
- Rooftop decks are appropriate for **house-scale and block-scale buildings in house-scale and block-scale** contexts.
- In **house-scale** contexts, privacy concerns and sensitivity to adjacent residential uses can limit the deck area. Generally, the deck should be set back 10 feet or more from any shared lot line.
- Rooftop decks are typically accessed directly from the building with a stairway that is enclosed at the rooftop landing. Secondary access can be provided by exterior stairs.
- On **house-scale** buildings, the stairway enclosure is typically located toward the center of the rooftop to avoid presenting a larger massing along the side to neighboring buildings.

Example Standards

Rear Yard



REQUIRED STANDARDS	
Width	At least 50% of lot width.
Depth	At least 25% of lot depth or 15', whichever is greater.

ADDITIONAL STANDARDS
The Rear Yard shall be located behind the main body of the primary building up to the rear lot line.
Parking may occupy the portions of the Rear Yard that do not count toward the minimum size.

CLOSER LOOK

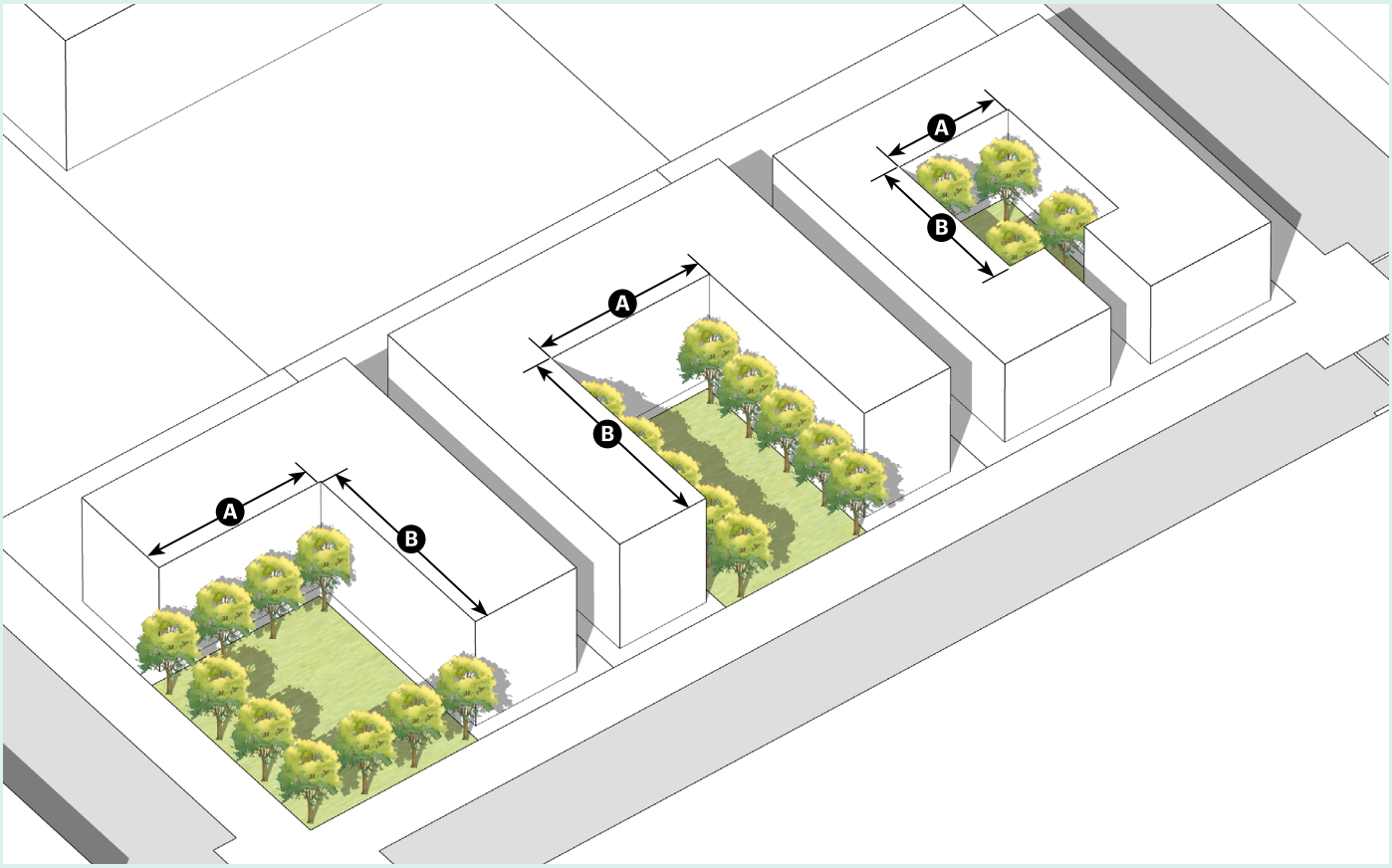
Privacy Considerations for Shared Open Spaces

Rear yards and courtyards have indoor spaces with clear views out to and from the shared open space. These indoor spaces are typically actively used common spaces, such as living rooms or kitchens rather than storage rooms or restrooms and are designed to face these open spaces.

Rooftop decks generally have views across the neighborhood or further. Depending on the context and building height, the rooftop deck may be visible from adjacent private spaces (e.g., rear yard, side yard, neighboring building). While this is not necessarily an issue in most **block-scale** contexts, in **house-scale** contexts, privacy for both the rooftop deck and the neighboring building can be addressed by setting back the rooftop deck further from the building edge.

Example Standards

Courtyard

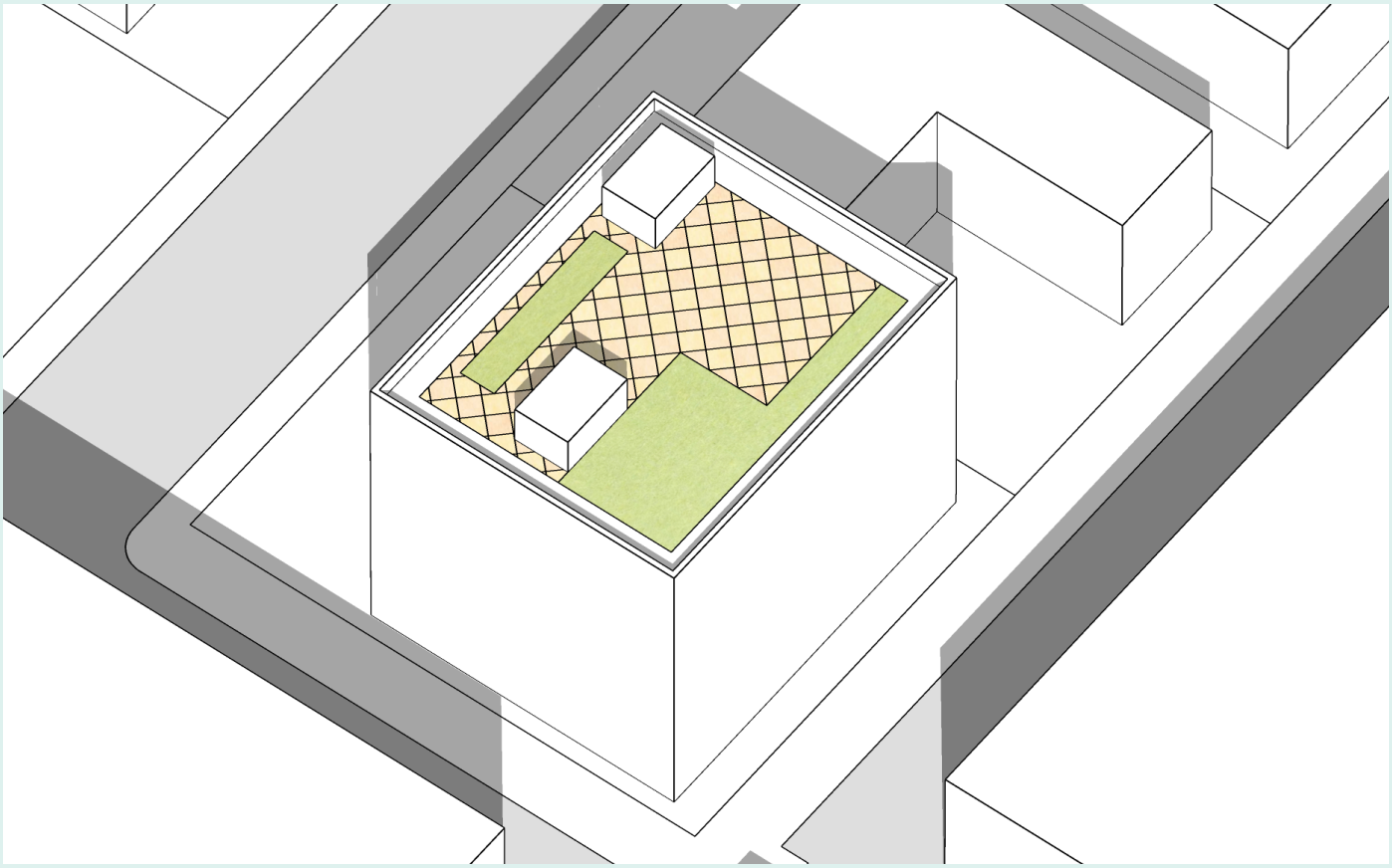


REQUIRED STANDARDS		
Overall Size	The minimum dimension shall be at least 20', with secondary dimensions relative to the height of the abutting building(s) wall. See detailed width and depth standards below.	
Abutting Wall	**Width (A)**	**Depth (B)**
Up to 2.5 stories	15' to 20'	30' to 40'
3 to 5 Stories	At least 30'	At least 40'
6 to 8 Stories	≥ Tallest Wall	At least 1/2 of tallest wall, whichever is greater.
8+ Stories	At least 80'	

ADDITIONAL STANDARDS
Courtyard(s) shall be accessible from the front street.
Multiple courtyards shall be connected via a passage through or between buildings.
Buildings shall define at least two walls of the courtyard.
Up to 1/3 of the shared courtyard(s) may be used for stormwater management if designed as a rain garden or bioswale.
Courtyards may be located at grade or elevated above a podium.
Sides of Courtyard not defined by building(s) shall be defined by 2'-6" to 5' tall wall with entry gate/door.
Parking is not allowed within a Courtyard.

Example Standards

Rooftop Deck



REQUIRED STANDARDS	
Placement	
House-Scale Buildings	At least 15' from building edge.
Block-Scale Buildings	At least 5' from building edge.
Footprint	
House-Scale Buildings	Up to 25% of total roof area.
Block-Scale Buildings	Up to 75% of total roof area.
Covering Height	
House- and Block-Scale Buildings	Up to 12'

ADDITIONAL STANDARDS
Rooftop Deck shall be located on the main body of the building.
Pergola, trellis, and/or permanent shade device are allowed.
Solid roofing is not allowed over the deck space.
Wall along the edge of the roof shall be max 42".
Deck may be hardscaped and/or landscaped.

Ⓢ **SUPPLEMENTAL TOPIC**

5.3 Private Open Spaces

PLACETYPE		
Neighborhood	○	●
Corridor	●	●
Center	●	●

INTENT

Provide access to natural light and fresh air and, if possible, usable exterior space for the resident(s) of individual units.

GUIDANCE

Private open spaces are for individual units in a building and take the form of patios at the ground floor or balconies at upper floors. Private open spaces are more applicable to **block-scale** buildings but can also be applied to **house-scale** buildings. The size and location of private open space provided depends on the scale, intensity, and type of building. Private open spaces may also be used as an emergency exit.

INDIVIDUAL PATIO

- Individual patios are at grade and deep enough to accommodate outdoor furniture (at least five feet deep).
- Patios are directly connected to a ground-floor unit and typically provide direct access to/from the sidewalk. In some cases, the individual patio can be located at the side or rear of the building and accessible only from the unit.
- Mixed-use buildings with residential units above the podium can use the podium roof surface to provide individual patios. These patios typically front a paseo or courtyard.

BALCONY

- Balconies are for upper floor units and accessible only from the unit.
- Balconies are appropriate for both **house-scale and block-scale** buildings.
  - In **house-scale** buildings, individual units typically have one balcony. This helps maintain the façade balance of the building.
  - In **block-scale** buildings, balconies are used as architectural features to enhance the façade of the building and, therefore, not all units may have balconies.
- There are two types of balconies: the occupiable balcony (projected or recessed) and the Juliet balcony.
  - The occupiable balcony creates outdoor usable space for the resident. If projected, it adds this space to the unit but if it is recessed it occupies a portion of the unit's footprint.
  - The Juliet balcony is an opening on the upper floor, typically a large window or French doors, with a small railing. It creates an open outdoor feel in an indoor space but does not provide usable outdoor space.
- It is important to note that balconies are often eliminated by developers, removing an open space option for individual units. In those situations, shared open spaces really become important as recommended in this Chapter.

Example Standards

Individual Patio

REQUIRED STANDARDS
Refer to Patio Frontage Type

Example Standards

Balcony

REQUIRED STANDARDS

	Occupiable Balcony	Juliet Balcony
Depth, clear	At least 4'	At least 12"
Width	At least 6'	At least 3'
Overall Width	Up to 10'	
Projection from façade	Up to 10'	
Recess into façade	Up to 6'	

ADDITIONAL STANDARDS

Juliet balconies shall include inward swinging door(s) with full glazing.

CLOSER LOOK

Balcony Size

The size of a balcony varies based on local construction practices. Generally, the recommended minimum depth is four feet, which is deep enough for seating and a table, and the recommended minimum width is six feet. However, the key is to understand what is appropriate relative to the size of the unit so that the standards do not excessively require private open space per unit.

ECONOMIC FEASIBILITY INSIGHT

PRIVATE OPEN SPACE | **BALCONY**

COST CONSIDERATIONS

Requiring balconies has high hard cost financial impacts on a project. For affordable housing developers, these costs can make a project infeasible, whereas market-rate development can more easily absorb them. For market-rate development, the cost of the units will likely increase accordingly.

HARD COSTS ($$$)

Balconies have high hard costs due to more complex construction, more materials, additional screening, and weatherproofing.

SOFT COSTS ($$)

Ensuring balconies are safe and structurally sound requires additional engineering and inspections that add to maintenance costs. Further design expertise is needed to ensure balconies comply with standards.

OPPORTUNITY COSTS ($)

Long-term operation and maintenance costs increase for projects with balconies. Increased liability also adds to operating costs.

CLOSER LOOK

What is a Reasonable Minimum Standard for Balconies?

For affordable housing developments it is more challenging to provide on-site open space, given tight budgets and complex financing. Private open space is expensive and increases operating costs long-term.

There was universal agreement across Bay Area affordable housing developers that requiring balconies for every unit is untenable. The minimum standard can also be problematic for a project. Generally, any private open space minimum requirements above 40 square feet were considered too high to be feasible.

Market-rate developers we interviewed noted that providing private open space is a desirable amenity to add to a project and a strategy to differentiate in a competitive market. According to one market-rate developer, required balcony space exceeding 50 square feet per unit is often the limit to what is feasible, even when the additional costs are absorbed by increased rents.

Both affordable and market-rate developers mentioned that flexibility to provide common or private open space to meet a project-wide requirement is a helpful strategy.

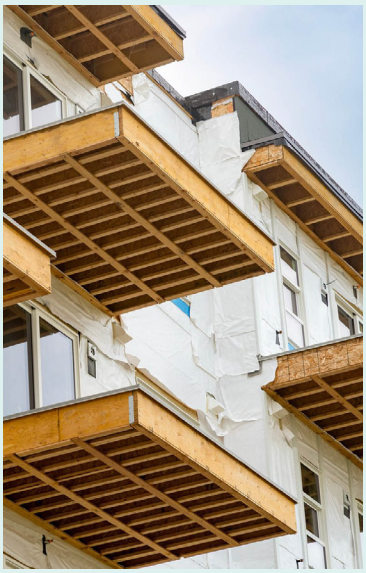


Image Credit: Weinstein Construction

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Place Types Atlas for Bay Area Region

Prepared by:
Opticos Design, Inc.

Prepared for: MTC ABAG Regional Objective Standards Project

June 6, 2023

OPTICOS

1 Using Place Types to Inform Objective Standards

Overview and Purpose

A Place Type is a distinct physical environment that, when combined with other Place Types, comprises, towns and cities of all sizes. There are three general categories of Place Types: Neighborhoods, Corridors, and Centers. Each of these three has variations, as will be described and analyzed in this analysis.

This analysis identifies and evaluates a fourth category of Place Types, 'Other,' for areas that could accommodate housing but either lack clear direction about the intended physical form and uses, or lack development standards that can generate a particular physical form that can be described as a Neighborhood, Corridor, or a Center. The direction for these areas is to be determined by their communities.

Place Type analysis identifies key elements or "DNA" of physical environments as it relates to physical character. Physical character ranges from building size and scale, building types, whether buildings are detached or attached, lot width and depth, setback depths, lot coverage and parking location.

This information from the Place Types analysis is key to making sure that the Objective Standards being prepared address the development intensity of physical environments where ABAG's growth geographies occur.

Later in this process, Objective Standards will be prepared and coordinated with the spectrum of Place Types, enabling jurisdictions to choose the zoning tools that address their selected Place Type(s).

Characteristics Analyzed

Each Place Type has been analyzed for the following characteristics:

Building Form: The combination of characteristics that generate an individual building on a site, including typical building scale and whether buildings are detached or attached. For the purpose of this analysis, building scale is identified as house-scale or block-scale. See page 3 for more information.

In addition, each Place Type is illustrated with a photograph and the city where the photo is located..

Building Types: Designation of a building based on its configuration, placement on a lot, and uses.

Building Front Setback: Depth of setback from the front lot line to the front of the building.

Building Height: Number of stories.

Off-Street Parking Location: Location of parking on the lot, if present.

Mix of Uses: Vertical or horizontal mixed-use, or not mixed.

TOC Policy :The Transit-Oriented Communities Policy tier where each Place Type occurs.

Tier 1 : Rail stations serving regional centers.

Tier 2: Stop/station served by two or more BART lines or BART and Caltrain.

Tier 3: Stop/station served by one BART line, Caltrain, light rail transit, or bus rapid transit.

Tier 4: Commuter rail (SMART, ACE, Capitol Corridor, Valley Link) stations, Caltrain stations south of Tamien, or ferry terminals.

F.A.R. and Residential Density: The observed F.A.R. and density have been approximated based on the building and sites observed in each Place Types.

Example: Commercial Mixed Use Small Footprint Corridor in Tier 2 (Location : City of Hayward)

1 Understanding Building Form

House-scale Buildings

Block-scale Buildings

Building form can be sorted into general categories ; House-scale or Block-scale. Within each broad category, there are many different building types. Understanding which end of the spectrum of building types a particular project is proposing is helpful from a variety of perspectives and needs. This approach is applied to the analysis of Bay Area Place Types.

"House-scale"

Buildings the size of a house, 2.5 to 3 stories, typically ranging in width from as small as 25' up to 75' overall, including secondary volumes or "wings". Although these buildings may be similar in size to a single-unit house, the number of units is not related to building scale. A house-scale building may include multiple units and a mix of uses.

"Block-scale"

Buildings as large as most or all of a block or, when arranged together along a street, appear as long as most or all of a block; also buildings 4 or more stories .

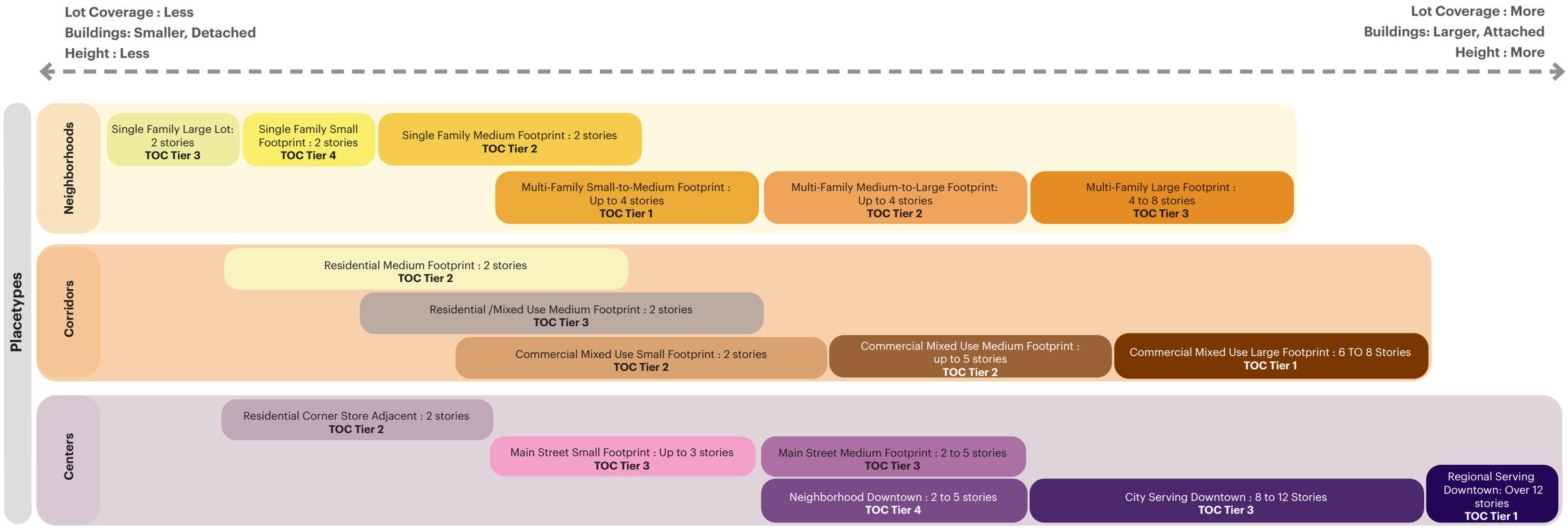
2 Place Types Spectrum in ABAG Growth Geographies

This analysis identifies a total of 17 Place Types where the ABAG growth geographies occur. The table below organizes the 17 Place Types within three broad categories: Neighborhoods, Corridors, and Centers.

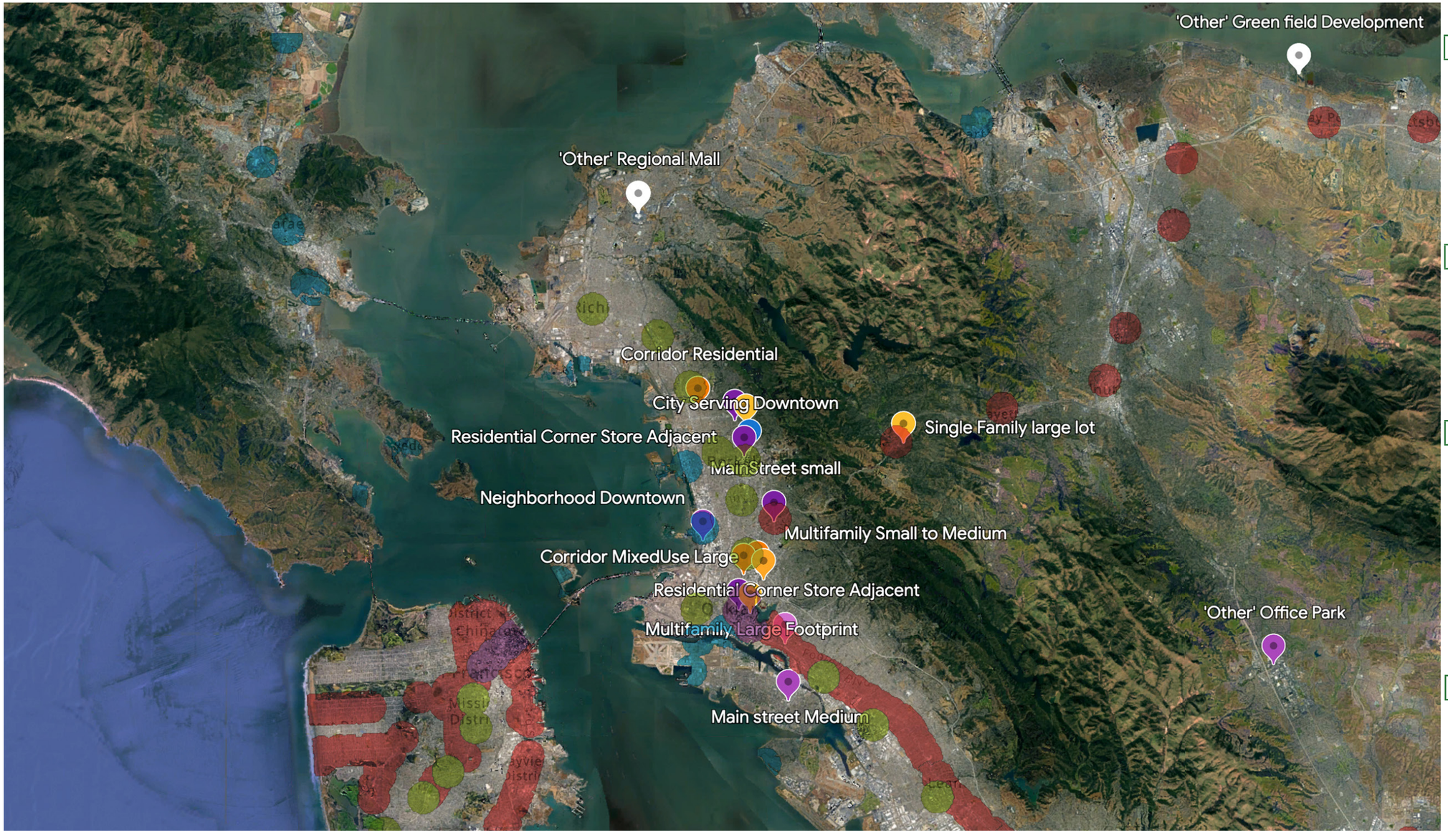
The fourth category of Place Types, identified as 'Other,' is not reflected on the spectrum because these areas lack clear policy direction about the intended context or physical form and cannot be adequately described as any particular Place Type. Until their future is determined by their communities, these areas will continue to be classified as 'Other'.

Last, the table identifies the relative scale and intensity present in each Place Type.

The following pages identify and describe each Place Type.



3 Place Type Examples : North ABAG Region



Place Types

Neighborhood Place Types

- Single Family Large Lot
- Single Family Small Footprint
- Single Family Medium Footprint
- Multi-Family Small-to-Medium Footprint

Corridor Place Types

- Residential /Mixed Use Medium Footprint
- Commercial Mixed Use Small Footprint
- Commercial Mixed Use Medium Footprint

Center Place Types

- Residential Corner Store Adjacent
- Main Street Medium Footprint
- Neighborhood Downtown
- City Serving Downtown
- Regional Serving Downtown: Over

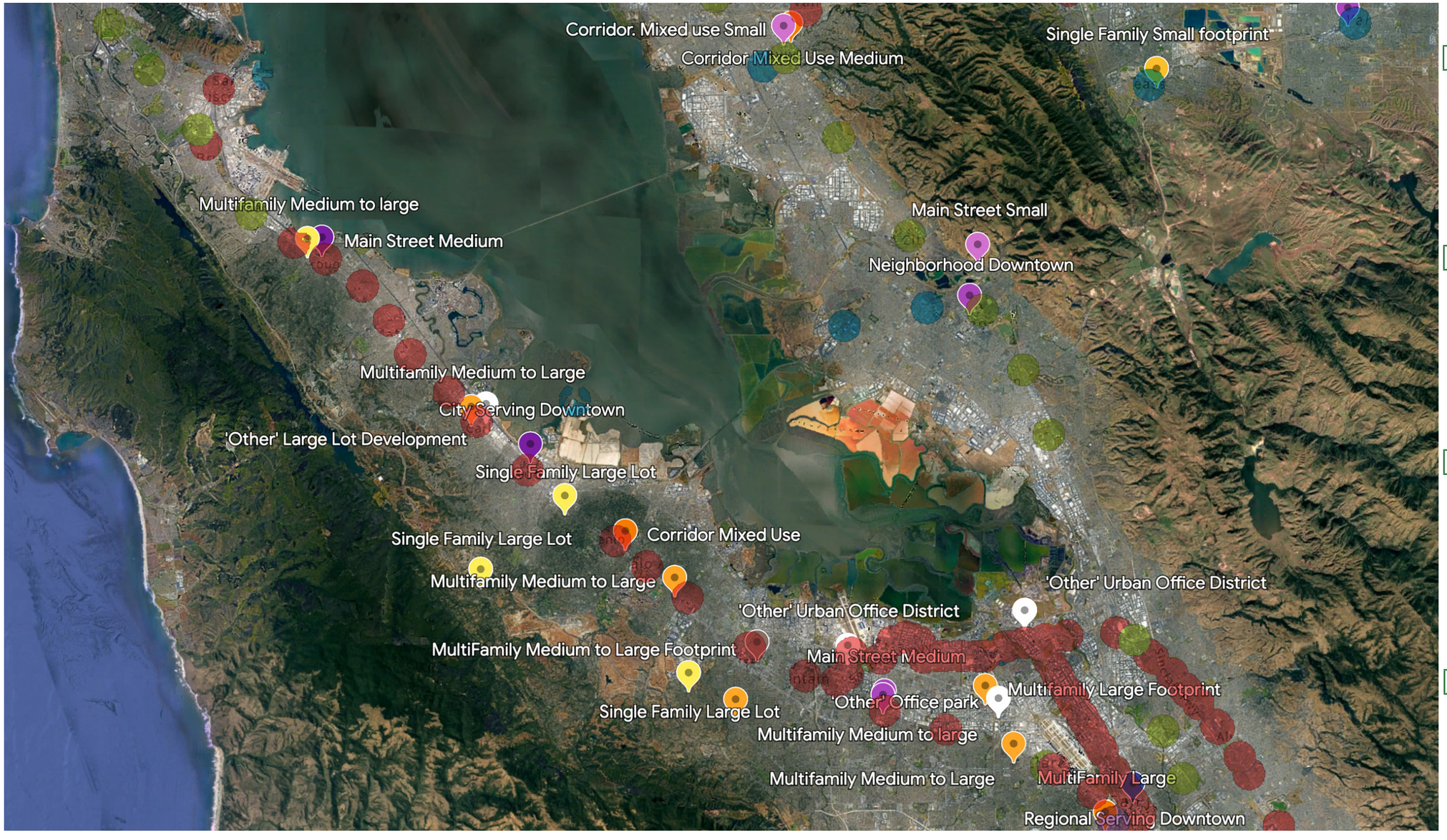
"Other" Place Types

- Greenfield Development
- Urban Office Districts
- Large Lot Development
- Regional Mall

TOC Policy Areas

Tier 1 | **Tier 2** | **Tier 3** | **Tier 4**

3 Place Type Examples : South ABAG Region



Place Types

Neighborhood Place Types

- Single Family Large Lot
- Multi-Family Small-to-Medium Footprint
- Multi-Family Medium-to-Large Footprint
- Multi-Family Large Footprint

Corridor Place Types

- Residential Medium Footprint
- Commercial Mixed Use Small Footprint
- Commercial Mixed Use Medium Footprint
- Commercial Mixed Use Large Footprint

Center Place Types

- Main Street Medium Footprint
- Neighborhood Downtown
- City Serving Downtown
- Regional Serving Downtown: Over

"Other" Place Types

- Office Parks
- Urban Office Districts
- Large Lot Development
- Regional Mall

TOC Policy Areas

Tier 1 | Tier 2 | Tier 3 | Tier 4

Neighborhood Place Types

Single-Family			Multi-Family		
Large Lots	Small Footprint	Medium Footprint	Small-to-Medium Footprint	Medium-to-Large Footprint	Large Footprint
 City of Orinda	 City of Pleasanton	 City of Berkeley	 City of Oakland	 City of Burlingame	 City of San Jose
FAR (Approx.) : 0.2 - 0.5	**FAR (Approx.)**: 0.5	**FAR (Approx.)** : 0.75	**FAR (Approx.)**: 1 -2.5	**FAR (Approx.)**: 2.5	**FAR (Approx.)**: 4 - 5
Net Density (Approx.) : 4 DU/Acre	**Net Density (Approx.)** : 5 DU/Acre	**Net Density (Approx.)** : 10 DU/Acre	**Net Density (Approx.)** : 20 DU/Acre	**Net Density (Approx.)** : 35 DU/Acre	**Net Density (Approx.)** : 45 DU/Acre
Building Form: House-Scale Detached	**Building Form**: House-Scale Detached and Attached	**Building Form:** House-Scale Detached	**Building Form:** Mostly House-Scale, some Block-Scale Mostly Detached	**Building Form**: Block-Scale Mostly Detached	**Building Form**: Block-Scale Mostly Detached
House-Scale Building Types: House	House-Scale Building Types: House, Duplex	House-Scale Building Types: House, Duplex	House-Scale Building Types: House, Duplex, Multiplex	House-Scale Building Types: Multiplex, Apartment Building Medium	House-Scale Building Types: Multiplex, Apartment Building
Block-Scale Building Types: NA	Block-Scale Building Types: NA	Block-Scale Building Types: NA	Block-Scale Building Types: Apartment Building Large	Block-Scale Building Types: Apartment Building	Block-Scale Building Types: Apartment Building
Building Front Setbacks: Medium-to-Deep	**Building Front Setbacks**: Small-to-Deep	**Building Front Setbacks**: Small-to-Deep	**Building Front Setbacks**: Mostly Small	**Building Front Setbacks**: Mostly Small	**Building Front Setbacks**: Mostly Small
Lot Coverage: Low	**Lot Coverage**: Moderate	**Lot Coverage**: High	**Lot Coverage**: High	**Lot Coverage**: High	**Lot Coverage**: High
Building Height: One-to-Two Stories	**Building Height**: One-to-Two Stories	**Building Height:** One-to-Two Stories	**Building Height**: Up to 4 stories	**Building Height**: Up to 4 stories	**Building Height**: 4-to-8 stories
Off-Street Parking Location: Front, Side and Rear of Lot	**Off-Street Parking Location**: Front, Side and Rear of Lot	**Off-Street Parking Location**: Front of Lot	**Off-Street Parking Location**: Mostly Front of Lot	**Off-Street Parking Location**: Front and Rear of Lot	**Off-Street Parking Location**: Front and Rear of Lot
Mix of Uses: No Mix of Uses	**Mix of Uses**: Limited-to-No Mix of Uses	**Mix of Uses:** Limited-to-No Mix of Uses	**Mix of Uses**: Limited-to-No Mix of Uses	**Mix of Uses**: Limited Mix of Uses	**Mix of Uses**: Limited Mix of Uses
TOC Tier 3	**TOC Tier 4**	**TOC Tier 2**	**TOC Tier 1**	**TOC Tier 2**	**TOC Tier 3**
Up to 2 Stories		**Up to 4 Stories**			**4 to 8 Stories**

Less
Lot Coverage
Height
Buildings: Smaller, Detached

More
Lot Coverage
Height
Buildings: Larger, Attached

Corridor Place Types

Residential/Mixed-Use		Commercial/Mixed-Use		
Residential Medium	Residential/Mixed-Use Medium	Small Footprint	Medium Footprint	Large Footprint
 City of Albany	 West Menlo Park	 City of Hayward	 City of Berkeley	 City of Oakland
FAR (Approx.) : 0.5	**FAR (Approx.)**: 0.75	**FAR (Approx.)**: 1	**FAR (Approx.)**:4	**FAR (Approx.)**: 6
Building Form: House-Scale Detached	**Building Form**: Mix of House-Scale and Block-Scale Mostly Detached	**Building Form**: Mostly House-Scale with some Block-Scale	**Building Form**: Mix of House-Scale and Block-Scale Attached and Detached	**Building Form**: Mostly Block-Scale Mostly Detached
House-Scale Building Types: House, Apartment Building Medium	House-Scale Building Types: House, Multiplex	House-Scale Building Types: Multiplex	House-Scale Building Types: House, Multiplex, Apartment Building Medium	House-Scale Building Types: House, Multiplex, Apartment Building Medium
Block-Scale Building Types: None	Block-Scale Building Types: Apartment Building Large, Commercial Building, Main Street Building	Block-Scale Building Types: Civic Building, Commercial Building	Block-Scale Building Types: Apartment Building Large, Commercial Building, Main Street Building	Block-Scale Building Types: Apartment Building Large, Commercial Building, Main Street Building
Building Front Setbacks: Mostly Deep	**Building Front Setbacks**: Small-to-Deep	**Building Front Setbacks**: Medium-to-Deep	**Building Front Setbacks**: Mostly Small	**Building Front Setbacks**: Mostly Small
Lot Coverage: Moderate	**Lot Coverage**: Moderate	**Lot Coverage**: Moderate	**Lot Coverage**: High	**Lot Coverage**: High
Building Height: Up to 2 Stories	**Building Height**: Mostly One Story, Up to 3 Stories	**Building Height**: Mostly 2 Stories, Up to 4 Stories	**Building Height**: Up to 5 Stories	**Building Height**: Mix of 6-to-8 Stories , Up to 10 Stories
Off-Street Parking Location: Front, Side and Rear of Lot	**Off-Street Parking Location**: Front, Side and Rear of Lot	**Off-Street Parking Location**: Front and Side of Lot	**Off-Street Parking Location**: Mostly Side and Rear of Lot	**Off-Street Parking Location**: Mostly Side and Rear of Lot
Mix of Uses: Limited-to-No Mix of Uses	**Mix of Uses**: Mostly Horizontal	**Mix of Uses**: Mostly Horizontal	**Mix of Uses**: Mostly Horizontal	**Mix of Uses**: Mostly Horizontal
TOC Tier 2	**TOC Tier 3**	**TOC Tier 2**	**TOC Tier 2**	**TOC Tier 1**

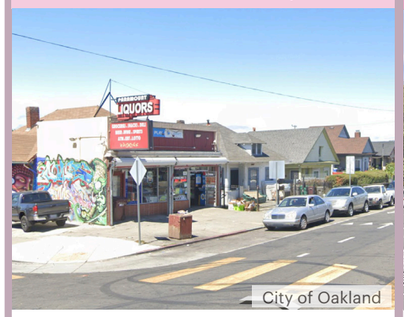
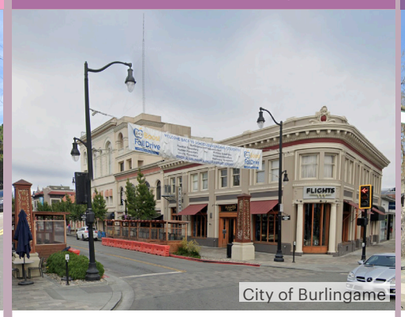
Up to 5 Stories | **5 to 10 Stories**

Less ← → **More**

Lot Coverage
Height
Buildings: Smaller, Detached

Lot Coverage
Height
Buildings: Larger, Attached

Center Place Types

Residential Corner Store Adjacent	Main Street Small Footprint	Main Street Medium Footprint	Neighborhood Downtown	**City Serving Downtown**	**Regional Serving Downtown**
 City of Oakland	 City of Oakland	 City of Burlingame	 City of Livermore	 Redwood City	 City of San Jose
FAR (Approx.): 1	**FAR (Approx.)**: 1 - 1.5	**FAR (Approx.)**: 2.5 - 3	**FAR (Approx.)** : 3	**FAR (Approx.)**: 4	**FAR (Approx.)**: 6+
Building Form: Mostly Block-Scale Mostly Detached	**Building Form**: Mix of House-Scale and Block-Scale Mostly Detached	**Building Form**: Block-Scale Mostly Attached	**Building Form:** Mostly Block-Scale Mostly Attached	**Building Form**: Mostly Block-Scale Mostly Attached	**Building Form**: Mostly Block-Scale Mostly Attached
House-Scale Building Types: House	House-Scale Building Types: House	Block-Scale Building Types: Commercial Building, Main Street Building	House-Scale Building Types: Multiplex	House-Scale Building Types: Multiplex,	**House-Scale Building Types**: Multiplex
Block-Scale Building Types: Main Street Building	Block-Scale Building Types: Main Street Building	Building Front Setbacks: None-to-Small	Block-Scale Building Types: Commercial Building, Main Street Building	Block-Scale Building Types: Commercial Building, Main Street Building	**Block-Scale Building Types**: Commercial Building, Main Street Building
Building Front Setbacks: None-to-Small	**Building Front Setbacks**: Mostly None-to-Small		**Building Front Setbacks**: None	**Building Front Setbacks**: None	**Building Front Setbacks**: None
Lot Coverage: High	**Lot Coverage**: High	**Lot Coverage**: High	**Lot Coverage**: High	**Lot Coverage**: High	**Lot Coverage**: High
Building Height: Mostly One Story, Up to 3 Stories	**Building Height**: Mostly 2 Story, Up to 3 Stories	**Building Height**: Mix of 2-to-3 Stories, Up to 5 Stories	**Building Height**: Mix of 2-to-4 Stories, Up to 5 Stories	**Building Height**: Mix of 4-to-8 Stories, Up to 12 Stories	**Building Height**: Mix of 4-to-8 Stories, over 12 Stories
Off-Street Parking Location: Rear and Side of Lot	**Off-Street Parking Location**: Side and Rear of Lot	**Off-Street Parking Location:** Mostly Rear of Lot	**Off-Street Parking Location**: Mostly Rear of Lot, Underground	**Off-Street Parking Location**: Mostly Rear of Lot, Underground	**Off-Street Parking Location**: Mostly Rear of Lot
Mix of Uses: Mostly Horizontal	**Mix of Uses**: Mostly Horizontal	**Mix of Uses**: Mostly Horizontal	**Mix of Uses**: Mostly Vertical	**Mix of Uses**: Mostly Vertical	**Mix of Uses**: Mostly Vertical
TOC Tier 2	**TOC Tier 3**	**TOC Tier 3**	**TOC Tier 4**	**TOC Tier 3**	**TOC Tier 1**
Up to 5 Stories				**8 to 12 Stories**	**Over 12 Stories**

Less
Lot Coverage
Height
Buildings: Smaller, Detached

More
Lot Coverage
Height
Buildings: Larger, Attached

"Other" Place Types

Office Parks	Urban Office Districts	Large Lot Developments	Regional Mall	Greenfield Development
				
FAR (Approx.): 1 -1.5	**FAR (Approx.)**: 1 -1.5	**FAR (Approx.)** : 0.15	**FAR (Approx.)**: 0.25	**FAR (Approx.)**: 0.1
Building Form: Block-Scale Detached	**Building Form**: Mostly Block-Scale Mostly Attached	**Building Form**: Mostly Block-Scale Detached	**Building Form**: Mostly Block-Scale Detached	**Building Form**: Greenfield areas are to use 2 or more of the Place Types to implement the local vision.
Block-Scale Building Types: Commercial Building, Main Street Building	Block-Scale Building Types: Commercial Building, Main Street Building	Block-Scale Building Types: Commercial Building	Block-Scale Building Types: Commercial Building	Block-Scale Building Types: Commercial Building
Building Front Setbacks: Small to None	**Building Front Setbacks**: None	**Building Front Setbacks**: Medium to Large	**Building Front Setbacks**: Medium to Large	**Building Front Setbacks**: Medium to Large
Lot Coverage: Low	**Lot Coverage**: Moderate	**Lot Coverage:** Low to Moderate	**Lot Coverage:** Moderate	**Lot Coverage**: Moderate
Building Height: Mix of 2-to-4 Stories, Up to 4 Stories	**Building Height**: Mix of 4-to-8 Stories, Up to 10 Stories	**Building Height**: Mix of 2-to-3 Stories, Up to 4 Stories	**Building Height**: Mix of 2-to-3 Stories, Up to 4 Stories	**Building Height**: Mix of 2-to-3 Stories, Up to 4 Stories
Off-Street Parking Location: Mostly Rear of Lot	**Off-Street Parking Location**: Mostly Rear of Lot	**Off-Street Parking Location**: Front or Rear of Lot	**Off-Street Parking Location**: Front or Rear of Lot	**Off-Street Parking Location**: Front or Rear of Lot
Mix of Uses: Mostly Vertical	**Mix of Uses**: Mostly Vertical	**Mix of Uses**: Mostly Horizontal	**Mix of Uses**: Mostly Horizontal	**Mix of Uses:** Mostly Horizontal

TOC Policy: the "Other" Place Types tend to occur outside of the TOC growth geographies for those that do occur within TOC growth geographies the relevant TOC tier policies apply.

Mix of New, Corridor, or Center Placetype

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MEMORANDUM

TO:	Ada Chan (ABAG)
FROM:	Alex Steinberger, Pauline Ruegg (Cascadia Partners)
PROJECT:	ABAG ODS Handbook
RE:	**Economic Feasibility Memo**

Senate Bill 330 (SB330) and Senate Bill 35 (SB35) require jurisdictions to adopt objective design and development standards. As part of its effort to help jurisdictions comply with these statutes, the Association of Bay Area Governments (ABAG) is developing an Objective Design Standards (ODS) Handbook. The ODS Handbook includes model ordinance language and best practices tailored for Bay Area jurisdictions. The following memorandum serves as a complementary resource to the ODS Handbook, and provides an economic feasibility framework for land use planners to use when considering adoption of design standards. In addition to the content included in this document, these findings will be summarized in the ODS Handbook.

Overview: Economic Impact of Standards

Design standards are an important tool that cities can use to promote high-quality, safe, and visually appealing buildings. However, these standards, even if made clear and objective, often increase costs and complexity for projects. If overly restrictive or too numerous, design standards can contribute to higher housing costs — or can keep projects from being built entirely.

On balance, design standards can influence better project designs that can increase property/rental values. Many design standards are of critical importance for community design goals and should not be compromised.

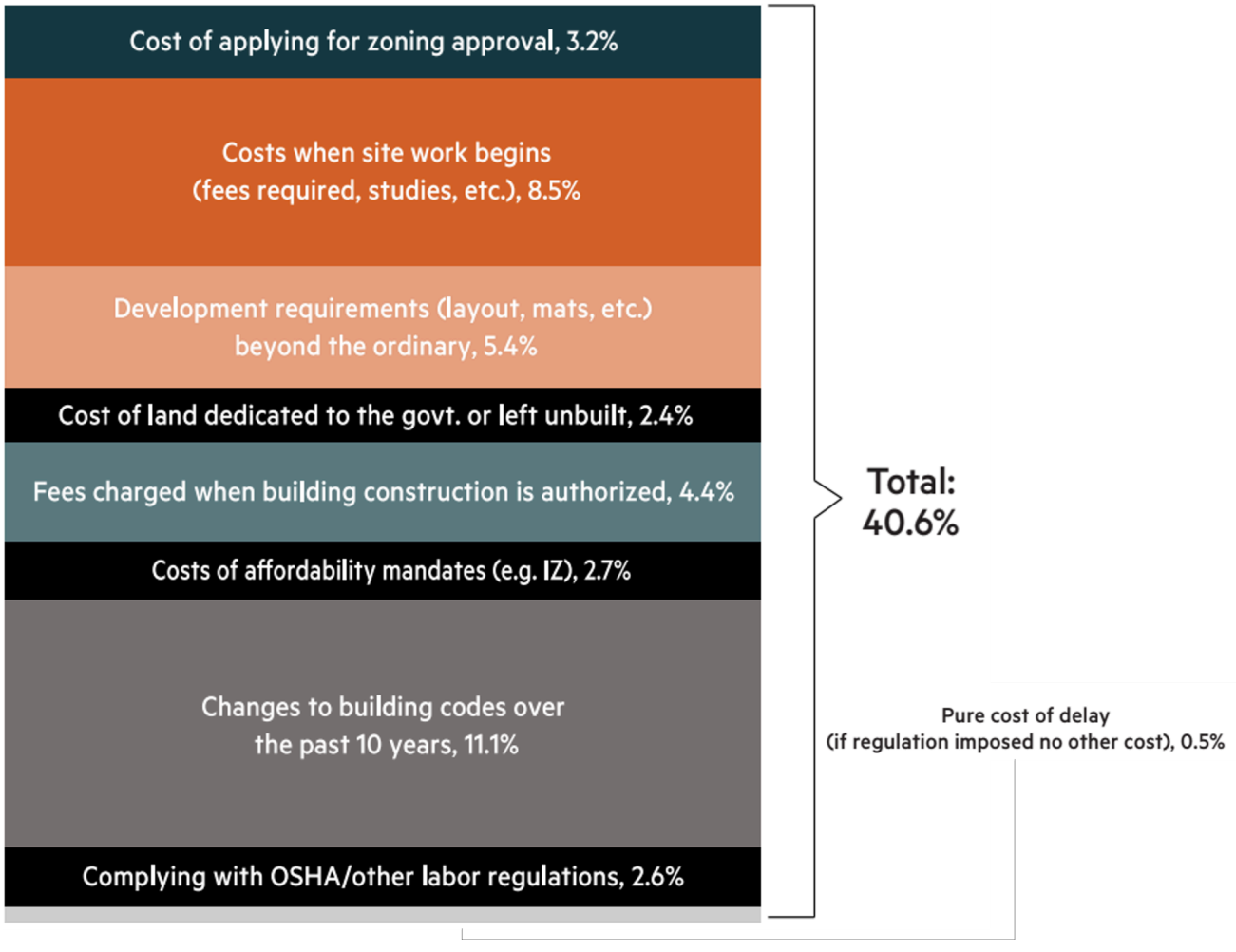
Aside from these “essential” standards, there are standards that can be considered “supplemental.” When considering adopting these supplemental standards, moderation is key. The financial implications of these supplemental standards must be weighed alongside their placemaking benefits. As part of this Handbook, a range of standards was analyzed to

help planners make decisions informed by financial feasibility and housing affordability. The information included in this memo is intended to help city planners better understand the financial implications[1] of adopting certain design standards on the development feasibility of residential projects. These financial considerations should be weighed along with the placemaking benefits of design standards.

Why Measure the Economic Impact of Standards

According to a report commissioned by the National Association of Home Builders (NAHB) and National Multifamily Housing Coalition, an average of 40.6% of total development's costs can be attributed to complying with regulations imposed by all levels of government. The figure below from their report shows how this percentage is broken down across various types of regulations.

Figure 1: Average Cost of Regulation as a Percent of Total Multifamily Development Cost



[1] *Financial impact information included in this memorandum is anecdotal and intended for illustrative purposes only. Actual impacts will vary from project to project.*

Source: National Association of Home Builders, National Multifamily Housing Council

While many regulations are necessary for health and life safety, there are a host of other regulations that seek to create good buildings and places in alignment with local housing and development objectives. While objective design standards may result in better built outcomes, it is informative to also understand the impacts of these types of standards on the cost of projects. It is also important to understand that there is no single standard or class of standards that is too costly, but there is a cumulative impact of many line items. Typically this additional cost is either incorporated into the overall project cost, translating into higher rents or sales prices, or the burden is too great and projects in less strong residential markets do not get built.

> Choosing how to regulate design is a delicate balance between maximizing placemaking benefits and increasing project costs. In order to strike the right balance, planners must consider how adopting certain design standards could limit overall unit yields, increase housing costs, or impact project feasibility, in the context of the long-term evolution of the neighborhood.

This memorandum will provide background on the economics of project costs, outline the types of costs associated with standards, and highlight key considerations for planners to keep in mind when weighing the costs and benefits of adopting standards. The intent of this memo is to quantify, to the degree possible, how much regulation may add to the cost of developing much needed housing. This information will help users of the Objective Design Standards Handbook thoroughly consider the consequences of their actions.

How Development Feasibility is Determined

Any housing development project—whether affordable or market-rate—relies on a real estate pro forma. Essentially, this is a project's balance sheet. It includes an estimate of up-front and on-going costs, expected future revenues, and a projection of financial return. Before moving a single shovel of dirt, developers look at these three factors to decide whether or not to move forward with a project.

The three key factors that go into a development's "balance sheet" are:

1. The costs that will have to be incurred
2. Estimated revenues that are likely to be obtained
3. The net financial return that the developer expects to achieve

Costs, revenues, and returns inform a "go/no-go" analysis that developers use to decide whether or not to move forward with a project. This is how developers determine the feasibility of a project. A project must "pencil," i.e. show expected profitability in a financial analysis, to receive a "go" decision from such an analysis.

Costs (Hard and Soft)

On a real estate balance sheet, costs can be divided into two broad categories: hard and soft costs. ***Hard Costs*** include physical development, e.g., the price of materials, labor, and land. ***Soft Costs*** relate to the administration and execution of a project, e.g., architectural fees, legal and permit processing fees, and taxes. Design standards can impact hard costs by requiring certain construction materials and/or methods. Similarly, design standards can increase soft costs by requiring more complex designs that increase architectural or engineering fees and lengthen the permitting process, delaying generation of revenue.

Revenues (Opportunity Costs)

Revenues are what a developer expects to recoup upon completion of their project. These revenues can occur up-front (in the case of "fee simple" or condo development) or over the course of many years (in the case of rental housing). Design standards can decrease revenues by reducing the amount of units and other leasable space within a building. Similarly, design standards that increase on-going operations and maintenance costs reduce net operating incomes for a project, just leading to reductions in potential revenue. These losses of potential revenue are sometimes referred to as ***Opportunity Costs***.

Financial Return

Generally speaking, a project's net financial return is what remains after costs have been subtracted from revenues. For-profit developers will judge financial feasibility of a project by comparing expected returns to other investments with similar risk. Non-profit developers will base their decisions on the returns required by their sources of capital. In either case, if complying with design standards causes a project's financial return to fall below a developer's requirements, they are unlikely to move forward with a project.

How Standards Impact Development Costs

The development process is full of obstacles. Regulatory barriers like design standards can add additional time, expenses, and risk. Generally, the more complex, stringent, or numerous design standards are, the more likely they are to increase costs.

Time

In real estate development, time relates directly to cost. Any design standard (or combination of multiple standards) that increase rounds of jurisdictional review, or create

other increases to development timelines can add substantial cost to a project. These costs include:

- **Carrying costs, including property taxes, utilities, debt service, and site security**. Carrying costs increase if development timelines are extended due to longer design periods and/or prolonged review processes. Some developers have cited that for a single small project, these costs can total in excess of $20,000 per year due to taxes and debt service.
- **Design fees, including architecture, engineering, and landscape**. Designers are used to working with standards and incorporate this into their base fee. Costs may increase if standards require especially technical design work or if the design team needs to prepare submission materials for multiple rounds of design or permit review.
- **Delayed revenue.** The financial returns that developers set out to achieve are impacted by how quickly they can generate cash flow. Delays to cash flow have a tangible impact on a project's rate of return.

Expenses

Design standards that specify materials, construction methods, or require specific expertise create additional costs that must either be passed on to residents or push a project toward infeasibility. These costs include:

- **Materials and methods costs.** Standards that require more expensive materials or that stipulate certain design features, have a direct impact on hard costs.
- **Permit and design review fees**. Standards that require additional design and permit review will drive up associated review fees that a development incurs.
- **Professional fees, including legal and consultants**. Professional fees may increase if standards introduce subjective or complex review processes that require additional legal or consultant support.
- **Finance costs**. If standards introduce risk or uncertainty into a development, investors and lenders may increase their rates and fees or require higher returns.

Risk

Real estate development is full of unknowns, but controlling costs is key to making a project "pencil." Anything that adds uncertainty to a development process–such as onerous local regulations or complicated design standards–drives up costs, increases risk, and makes development less financially viable. Certainty is key to managing costs, and the additional risk presented by complex development standards (even if they are objectively defined) increases uncertainty. This may result in investors demanding higher returns to compensate for the risk of prolonged approval processes, which puts further pressure on

developers to minimize opportunity costs and look for cost efficiencies in other parts of their pro-forma.

Real estate investors and lenders respond to uncertainty and risk by either deciding not to invest in a project or by increasing finance fees and asking for higher returns from projects in order to lend. These increased fees and returns drive project costs higher and puts further pressure on developers to minimize opportunity costs. To make their balance sheet work developers often end up increasing their sales/rental prices to cover higher costs. This, in turn, results in higher housing costs for potential owners and renters.

Approach and Methodology

Approach

The ABAG Objective Design Standards Handbook includes both essential and supplemental objective standards grouped into key topics. For each set of objective standards deemed supplemental, research was conducted and subject-area experts were interviewed to pinpoint general cost considerations. This information is organized as follows:

- **Overview**: Each topic includes several standards. In the Overview for each chapter, or topic, the range of types of cost impacts are described relative to the cost categories of cost outlined above (opportunity, hard, and soft).
- **Specific Standards**: Each supplemental standard includes a discussion of the cost implications of specific standards, e.g. Chapter 3: Site Design, includes a detailed discussion of the potential costs associated with adopting more stringent building placement standards or regulating the location and screening of utilities.

Methodology:

Research was conducted to better understand both the impact standards have on broader project costs and the implications of specific standards. Each standard was carefully reviewed to identify its associated opportunity, hard, and soft costs. Where initial rounds of research identified gaps, additional outreach was conducted. With the assistance of ABAG, members of the infill, suburban, and non-profit development community were identified and interviewed. Each interview focused on a) verifying magnitude of financial impact assumptions and b) clarifying any additional cost impacts stemming from supplemental standards. These findings are highlighted in each standard write-up but also reflected throughout the following sections of this document.

The ODS Handbook includes a broader range of standards than those analyzed in this document. Through a qualitative evaluation of these standards, Opticos Design and ABAG grouped them into those that are ***essential*** for placemaking and those that could be

considered ***supplemental.*** The following table shows the supplemental standards that were subject to economic evaluation, organized by each chapter of the ODS Handbook.

Table 1: Supplemental Standards

Chapter	Topic	Standard	
Chapter 2: Pedestrian Experience	Building Frontage Design	Maker Shopfront, Gateway, Gallery, Arcade	
Chapter 3: Building Design	Building Massing	Massing Features (Projections, Recesses, Stepbacks)	
	Façade Composition	Fenestration, Windows, Recesses	Base, Middle, Top Elements
Chapter 4: Site Design	Building Placement	Building Setbacks	Lot Coverage
	Building Equipment, Utilities, Service Areas	Wall- and Ground-Mounted Equipment	Roof-Mounted Equipment
	Design Sites	New Blocks	Community Open Spaces
Chapter 5: Open Space	Shared Open Space	Rooftop Deck	
	Private Open Space	Individual Patio	Balcony

Executive Summary of Findings

The following table summarizes the high-level cost impacts associated with each supplemental standard. More detailed information about each standard and its associated cost impacts can be found in later sections of this memorandum.

Table 2: Summary of Hard, Soft, and Opportunity Costs

SUPPLEMENTAL STANDARDS		COSTS		
		HARD	SOFT	OPPORTUNITY
CHAPTER 2				
Building Frontage Design		$$	$$$	$$
CHAPTER 3				
Massing Features		$$	$	$
Fenestration, Windows, Recesses		$$	$	-

Base, Middle, Top Elements		$	$	-
CHAPTER 4				
Building Setbacks		$	-	$$$
Lot Coverage		$	-	$$$
Roof-Mounted Equipment		$	$	-
Ground/Wall-Mounted Equipment		$	$	$
New Blocks		$$$	$$$	$$$
Community Open Spaces		$$$	$	$$
CHAPTER 5				
Rooftop Deck		$	-	-
Individual Patio		$$	$	$$
Balcony		$$$	$$	$

Financial Analysis of Standards

Chapter 2 | Pedestrian Experience

Ensure that the ground floor is active and visually engaging

Pedestrian experience standards include those that regulate ground floor design elements of a building as well as building frontage types. These standards emphasize elements that ensure a ground floor that is both active and visually engaging. How the ground floor relates to the adjacent street and sidewalk shapes how people walking, biking, or driving-by experience the building. They also are ways a building can contribute to and create an appealing, continuous street experience.

One approach to regulating streetscape is to establish building frontage types. These types specify certain key elements for different building frontage types and the minimum dimensions for these elements. For example, a “Porch” frontage type will require a building to provide a porch of a certain depth, width, and height setback a certain distance from the front of the lot and elevated to a certain grade. Building frontage types also require parking

to be located to the side or behind buildings to provide a direct connection between the building frontage and the public realm.

BUILDING FRONTAGE DESIGN

Gateways, Galleries, Arcades, and Maker Shopfronts ($$$)

Building frontage standards, such as those that require gateways, galleries, arcades, and maker shopfronts, have a medium overall cost impact on development projects. Building frontage standards impact all three cost categories, with the largest impact in soft costs. This is due to additional time and effort associated with the entitlement process when applying highly detailed, building typology standards as well as higher design and architectural fees.

These standards can also increase opportunity costs if they result in a loss of revenue-generating square footage (and in turn, profit). This impact happens if a development must accommodate requirements like high ground floor ceiling heights or façade types that cut into building square footage.

There are also some limited impacts on hard costs. Frontage design standards that require specialized building materials will drive up construction costs, resulting in an impact on hard costs, albeit likely a small increase in total hard costs. The higher cost impact may result from certain types, such as galleries, arcades or gateways, that require building area spanning clear space. These types of buildings will require more engineering and different materials and construction techniques to ensure they can be structurally sound.

Cost Discussion

Hard Costs ($$$)

Building frontage types that require certain elements be provided for every ground floor unit may require a level of physical definition and articulation that goes beyond the design a developer typically pursues. For example, a Maker Shopfront that requires roll-down or sliding doors enabling direct pedestrian access will have higher materials and construction costs than more typically dimensioned windows and/or doors. Likewise a Gallery Building Frontage type will require additional materials for a gallery spanning the public sidewalk and additional construction costs to install a weight-supportive structure.

Soft Costs ($$$)

This standard is likely to increase soft costs as more extensive building frontage requirements will necessitate more detailed permit submittals. This will likely translate into higher design and legal fees, and in some cases an increase in engineering fees. There may also be cost increases associated with submitted variance applications as building frontage

standards often require variation based on site specifics, such a slope. As many frontage types proposed in the Handbook are classified as Essential, it is recommended that planners coordinate with Public Works and other departments to make sure frontage improvement requirements are clear and applied consistently to reduce these soft costs to the extent possible. The more clarity staff has on how to apply frontage standards, the more impacts on soft costs can be reduced by streamlining review and approval.

Opportunity Costs ($$$)

There are opportunity costs associated with defining specific dimensions of building elements. For example, if an Arcade Building Frontage Type is applied, a minimum clear zone that is 10’ - 20’ deep is required. This represents a sizable loss in leasable-area. Likewise a Gateway Frontage Type requires a portal of certain width and height that represents a loss in building square footage. To mitigate these costs, in areas where retail is required, jurisdictions should allow for flexibility in the design to accommodate different ground-floor uses.

Getting Specific

The biggest concern raised about building frontage types were the increased design fees and permitting time associated with entitlement. One designer in the Bay Area shared that when budgeting a project with form-based elements, they always add a cost factor to account for the additional time needed to address these standards. Even if it seems as if all the details are spelled out in carefully dimensioned diagrams, in their experience there are frequently challenges when applying frontage types to specific sites and working through staff review.

Architects and developers also cited challenges associated with certain frontage types. For example, maker shopfronts as part of "live-work" units were one such problematic frontage type. Market-rate developers appreciated the flexibility allowed by live-work use allowances, but in their experience requiring shopfront configurations adds complexity and rarely yields intended outcomes. Rather than providing opportunities for home-based businesses, these units tend to function as very large, and very expensive residences.

Along these same lines, affordable housing developers noted that it is difficult to add shopfront units to any tax credit-funded projects due to their size. They typically are targeting smaller, more efficient floorplans. One market-rate developer mentioned challenges in marketing maker shopfront units because large street-level windows tend to run counter to residents' desire for privacy.

Chapter 3 | Building Design

Shape appealing public realm that complements context

Building design standards address the overall scale and design details of a building to emphasize a pedestrian-orientation. Massing and articulation standards break a larger building façade into smaller, distinct modules. Fenestration standards and standards requiring specific base, middle, and top elements also seek to break up the scale of a building by requiring a finer level of design detail. Taken together, building design standards seek to affect how buildings frame the public realm and ensure they are appropriately scaled relative to their context

These types of standards can have a medium to high impact on development costs. Their primary financial impact is on opportunity costs and hard costs. Stepback standards or required façade articulation through recesses may require buildings to reduce square footage and potential leasable area. Fenestration standards or base, middle, and top element standards can increase materials costs or necessitate more costly forms of construction, impacting hard costs. In addition, increased complexity in a building's façade can create weatherization "fail points" that necessitate higher on-going operations and maintenance costs.

BUILDING MASSING

Massing Features ($$$)

Requiring massing features or modules, such as recesses, projections, or stepbacks, is one strategy to reduce the perceived mass of a larger building. The intent of standards that require these types of features is to break a building's façade into masses that are smaller-scale and give depth and visual interest to a large façade. In contrast, a large building not required to provide these types of recesses and projections could be perceived as monolithic and lacking the types of details that have placemaking benefits. Massing and articulation standards translate into more complex building forms, which entail higher hard and soft costs. These costs can be a substantial increase for a project's overall budget.

Cost Discussion

Hard Costs ($$$)

Cutting or extending the façade may lead to more complicated construction. If the articulation cuts into the square footage it can lead to complications with floor plans and unit size. Having massing that extends outwards means using more materials than would otherwise be necessary. Any façade articulation requires weatherization which is expensive, to ensure that the more exposed parts of the façade are protected.

Soft Costs ($$$)

There can be many rounds of design review and review during the entitlement period to settle on a façade design that meets standards and the vision of the developer. The more review cycles take place, the more budget is affected due to labor costs and the project timeline.

Opportunity Costs ($$$)

Projections and recesses in a building's façade create more potential "fail points" where water can intrude into a building and necessitates more robust weatherization methods. Even with weatherization measures in place, these features must have periodic upkeep and repair, which increases long term operating costs.

Getting Specific

Development professionals we spoke to agreed façade articulation requirements were one of the most expensive standards to address without necessarily resulting in buildings that are any better designed. Massing standards that provide a range of treatments (tripartes, modules, etc.) to break down the mass of buildings can reduce the cost impacts of this type of standard.

If projections and recesses are required, it is critical to define a functional minimum spacing. A designer at Salazar Architect, Inc. noted that requiring a projection or recess every 20 - 40 feet would make a project too complex and force costly re-designs of individual units. According to designers, this is even more important for affordable projects. Repetitive design modules, including projections or recesses, need to match typical unit sizes to avoid expensive redesigns of building layouts.

A larger minimum span helps designers avoid needing to "fit" units around articulation in a façade to avoid changes in wall planes mid-unit. This causes costly increases in interior finishing and construction costs. Developers agreed that requiring a projection or recess no more than every 100 feet is generally feasible, and that articulation every 200 feet struck a good balance between cost and placemaking impact. .

FAÇADE COMPOSITION

Fenestration, Windows, Recesses ($$$)

The design of windows and openings promote cohesion with surrounding architectural context and reinforce the overall architectural character and quality of a building. These standards often enforce certain sizes of windows, orientation, e.g., vertical, how larger groupings of windows are broken up and/or distributed across the entire façade, and their

position relative to the façade of the building. This standard increases hard costs but does not impact soft or opportunity costs.

Cost Discussion

Hard Costs ($$$)

Requiring certain sized windows or styles of windows can increase both material costs and construction costs. For example a window that is inset 3 inches requires additional finish work and is a more expensive window than a vinyl window. This cost may be harder particularly for affordable projects that are seeking to value-engineer wherever possible.

Soft Costs ($$$)

Window standards do not typically incur significant extra costs to the design process, however in some cases, architects may need to consult with energy or engineering specialists.

Opportunity Costs ($$$)

There are no notable opportunity costs associated with these standards.

Getting Specific

Adding details to windows (and other building openings) can elevate building design translating into more appealing façades. Designers acknowledged that such details are an important aspect of building design and adds to the overall placemaking impact a building has on its neighborhood context. One affordable housing developer shared that fenestration standards that require recessed windows is an effective strategy for avoiding “pill box” buildings that lack differentiation. He characterized this as a lower cost way to bring personality to a building when compared to façade articulation requirements.

However, other affordable developers raised significant concerns with fenestration standards that are too extensive. Standards such as requiring a 3-inch recess or high minimum dimensions for windows’ heights and widths, can greatly increase hard costs for a project. A common strategy to control costs that affordable developers pursue is the use of vinyl windows. The use of these lower cost materials can help a project pencil. However, developers cited that vinyl windows often do not meet specific recessed fenestration requirements however. One developer did not agree that placemaking benefits were worth specific fenestration standards sharing "Do you want to have an extra inch of shadow line or more affordable units?"

To balance requirements for building design with the flexibility often required by affordable projects, one developer suggested the use of a points system. Such a system would identify desirable building elements and assign a point value to each. Then, developers could choose the elements that make sense for an individual project to meet a minimum

threshold. These point thresholds could vary based on whether a project is affordable or market-rate.

Base, Middle, Top Architectural Elements ($$$)

Base, middle, and top architectural elements require buildings to have three visually distinct components to their design. These standards are intended to break a building's volume into smaller units. These building details require additional differentiation and detail that are intended to improve building quality and character.

Cost Discussion

Hard Costs ($$$)

Façade design may require additional labor, materials, and construction costs. To achieve the desired outcome, special materials may need to be obtained – especially if there are additional historic preservation requirements or stipulated building typologies. In general, however, designs are already taking into consideration building definition and the cost increase will be low.

Soft Costs ($$$)

Depending on the clarity of the standards, additional review may be required to confirm compliance through staff review. This will translate into some increase in professional fees.

Opportunity Costs ($$$ - $$$)

If architectural elements defining the top of a building have high minimum height dimensions, they may make it more challenging to stay below the maximum permitted height. For example if a parapet with a projecting cap is required, this element in addition to the top floor may put a design over the maximum allowable height necessitating a reduction in the number of floors. If a variance is not received, then the project will be forced to cut a floor of leasable units, which will cut into overall development profits. This may drive a project toward infeasibility.

Getting Specific

We heard from both market rate and affordable designers that while base-middle-top standards may not significantly increase costs for a project, they rarely see requiring this standard as beneficial. Designers in particular pointed out that this type of standard does not account often for more modern building designs but instead emphasizes designs that reference historic building elements. They recognized that building design has important placemaking benefits but cautioned that planners think about including this standard.

Chapter 4 | Site Design

Fit new buildings within its context and address public realm

Site design standards address the relationship between buildings and other site elements (parking, open space, etc) to the surrounding context. For example, site design standards regulate how much area a building footprint can occupy on a lot either through required setbacks or maximum lot coverage percentages. These standards dictate where on a site a building is located and how it visually impacts the public realm. Site design standards also address how infill development can improve connectivity and shape the public realm by requiring open spaces and street networks that break up larger blocks and provide new gathering spaces.

While site design standards generally have a medium to high cost impact on development projects, any standards that dictate the amount of buildable area on a lot are by far the most significant from a financial perspective. They present a large opportunity cost, in that reductions to building size–through lot coverage, setback standards, or maximum block size– or requirements to dedicate more area to parking reduce the amount of revenue-generating square footage that can fit on a lot. This reduces profits for developers, which in turn makes development less financially feasible.

Site design standards can have a medium to high impact on hard costs, particularly if a development needs to include tuck-under or structured parking as a result of building setbacks, lot coverage standards, or new block or community open space standards removing buildable area, both of which are more expensive to build than surface lots, to meet parking requirements. The impact on soft costs is low. Designers are used to working with site design standards, and unless the standards are excessively strict and/or variances are sought they should not add significant soft costs to meet them.

BUILDING PLACEMENT

Building Setbacks ($$$)

Building setbacks determine the minimum distance a structure should be built away from property lines, a street frontage, or other specified features. The intent of setback standards is to produce appealing streets and as buildings fill in over time; provide for privacy between buildings; ensure adequate buffers from roads; and provide space for elements of green space and/or landscaping.

Setbacks can also be used to promote cohesive development along a block by establishing a façade zone that sets a range of setbacks. The intent of this type of context-sensitive setback standard is to mirror the existing prevalent setback patterns along a block face. Generally, larger setbacks reduce the overall footprint of a building on a lot or parcel, while smaller

setbacks can allow for more development area. Larger setbacks represent a high opportunity cost for a project with only low hard and soft cost impacts.

Cost Discussion

Hard Costs ($$$)

Areas outside of a site's lot coverage limits must be programmed with hardscape or landscaping that meets minimum standards. All of these features have an initial construction and ongoing maintenance costs and generally do not generate revenue for a project. It is important to note that if building setbacks are set too high, they may have a high impact on hard costs, e.g. if enough buildable area is removed from a site, the design of a project may need to shift to providing tuck-under or structured parking in lieu of surface parking a project. This form of parking is significantly more expensive in terms of materials, construction, and labor.

Soft Costs ($$$)

This standard is unlikely to directly impact soft costs, unless developers need to submit variance applications.

Opportunity Costs ($$$)

The primary financial impact of lot coverage standards is opportunity cost. More restrictive setback standards directly reduce the amount of revenue-generating floor area, reducing the number of potential units that can be achieved. This loss of revenue may result in projects being not financially viable for developers and investors.

Getting Specific

In addition to reducing the amount of potential buildable area on a lot, in some cases setbacks can also influence the types of units and building configurations that are possible on a site. This is especially true for developers of affordable and workforce housing who rely on the cost-saving efficiency that standard unit layouts and floor plate configurations bring to their projects. If setbacks are too onerous, builders may not be able to utilize standard designs which could result in increased housing costs or infeasible projects.

For example, a developer who focuses on work-force multi-unit projects, shared the potential high opportunity costs context-sensitive setbacks could pose for their projects. Their development model is predicated on providing smaller units with less amenities and on-site parking in order to remain attainable for tenants averaging $70,000 in annual income. Their typical unit design is 25 feet deep. If they were faced, however, with setbacks that cut further into the site, reducing buildable area on the lot, their unit design would no longer be feasible. For instance, a 20-foot deep unit would not be marketable, and they would not pursue the project.

Lot Coverage ($$$)

Lot coverage standards set a maximum area, usually as a percentage, that a building's ground floor footprint can occupy on a lot. The intent of this standard is to use the ratio of open space to building footprint to regulate a building's mass and, in some instances, to limit impervious surface coverage. Higher lot coverage limits generally allow for larger building footprints on a lot, while lower coverages limit the intensity of development. Lot coverage standards that seek to limit building footprints to house-scale buildings or that place limits on larger, multi-story buildings represent a high opportunity cost for a project with only low hard and soft cost impacts.

Cost Discussion

Hard Costs ($$$)

Areas outside of a site's lot coverage limits must be programmed with parking, hardscape, or landscaping. All of these features have an initial construction and ongoing maintenance costs and generally do not generate revenue for a project.

Soft Costs ($$$)

This standard is unlikely to directly impact soft costs, unless developers need to submit variance applications.

Opportunity Costs ($$$)

The primary impact of lot coverage standards is opportunity cost. More restrictive lot coverage standards can have a direct impact on the leasable floor area that architects and developers can achieve on a site. Less building area translates to less revenue generating square footage. This reduction in revenue generating potential has a direct impact on the potential profit of a project. As a result a project may become less feasible to develop, i.e., if a developer cannot generate enough project to make the project pencil they will not pursue it, or the unit cost will increase, i.e., to offset the loss in revenue a developer will increase the rental or sales price for the units they can build.

Other considerations include the potential for lot coverage maximums to restrict the size of building floor plates, making certain building features, such as double-loaded corridor residential buildings and internal floors of podium parking, infeasible to build under certain lot conditions.

Getting Specific

Given land costs are high in the Bay Area region, to achieve financial feasibility projects must maximize the number of leasable/salable units on a site. Standards that reduce this revenue potential for a project have a high opportunity cost. This is especially true for

smaller, more constrained infill sites. The proposed lot coverage in 4.2 Building Placement allows for a high buildable area, which improves project feasibility.

Developers and architects voiced concerns on the potential for lot coverage standards to limit the overall size and leasable area of a building. Some shared scenarios where a restriction on building footprint size necessitated adding floors to meet leasable area targets. This, in turn, required a more costly construction method—the jump from four to five stories triggers a different construction type with additional fire sprinkler systems and material combustability requirements. When faced with this predicament, more often than not, a developer will chose to forego additional heights and units to avoid switching to a more costly construction type, and ultimately, may choose to not pursue a project.

Developers and architects also noted that limiting a project's footprint can rule out more efficient building forms like "double-loaded corridor" or "point access" building types. These building types have specific requirements for wing widths and floor plate sizes. If lot coverage standards reduce the area available on a lot, they have the potential to make these more efficient and cost-effective buildings impossible to build.

BUILDING EQUIPMENT, UTILITIES, AND SERVICE AREAS

Roof-Mounted Equipment ($$$)

Standards addressing the location of building equipment and utilities aim to strike a balance between effective functional locations and the negative visual impact these elements may have on the public realm. Requiring utilities to be roof-mounted places these pieces of equipment out of sight and maintains a desired street environment. Any sound or air/quality or temperature impacts are also limited. Additional screening may be required as well to ensure these building elements are not seen and do not visually detract from the building's impact on the street environment.

The goal of these standards is to ensure the safety and compliance of rooftop equipment. Roof-mounting utilities help control noise pollution and maintain a desired neighborhood aesthetic by keeping utilities out of view. While rooftop equipment standards increase hard costs, soft costs and opportunity costs are low to none – making this a medium-cost standard.

Cost Discussion

Hard Costs ($$$)

Putting equipment on the roof instead of on the ground adds significant construction, engineering, and installation costs. Certain evaluations must be completed to ensure that the roof can handle the load. Additional ventilation, weatherproofing, and screening may be

required. Visually integrating to minimize its impact and match the materials of the building will add costs, as will the necessary sound-insulating materials to minimize impacts on top-story units. For continued maintenance, specific roof hatches, doors, stairways, elevators, and walkways may need to be constructed to ensure the safety of maintenance workers. Roof utilities may also require more advanced technologies and materials that are more expensive.

Soft Costs ($$$)

The cost of this roof mounted utilities and screening is wrapped into existing design, engineering, and consultant costs. The additional design and engineering may translate into slightly elevated soft costs. Roof-mounted utilities may require ongoing maintenance which can be more expensive than grounded utilities.

Opportunity Costs ($$$)

If the developer wants to use the roof for green space or patio, roof mounted utilities will need to be considered in that design and may preclude certain designs. Likely there is limited to no opportunity costs as utilities are small in size.

Getting Specific

Overwhelmingly designers and developers agreed that the costs associated with mounting utilities on rooftops (versus screening them at-grade) were high while providing marginal placemaking benefits. They agreed that similar outcomes could be achieved by locating utilities and service areas away from the pedestrian realm and using high-quality screening.

If utilities are required to be placed on the roof, planners should consider a standard that requires equipment to be shifted back a certain number of feet. This can have the same impact as requiring costly screening for equipment that is not visible from the sidewalk in most cases. This type of standard will have some marginal hard and soft costs but these will be less than also requiring screening of rooftop equipment. Requiring utilities to be located away from sidewalks and screened is a standard designers anticipate. The marginal costs of at-grade screening do not pose insurmountable cost impacts for affordable projects; although planners should always consider if the cost impacts of design standards cumulatively impact the feasibility or affordability of projects targeting lower cost housing.

Wall-and-Ground-Mounted Equipment ($$$)

Location standards for utilities typically dictate where and how utility-related infrastructure can be situated relative to the lot and the building. These standards attempt to promote safety, functionality, and aesthetic compatibility with the surrounding environment and architecture. Primarily this is achieved through requiring rear or side locations and visual

screening that is cohesive with the larger structure. These standards are very common and given their low hard and soft costs and do not have high financial impacts on a project.

Cost Discussion

Hard Costs ($$$)

Wall and ground mounted utilities are significantly less expensive than roof-mounted utilities, as discussed above. There will be small added materials and construction costs for screening the utilities.

Soft Costs ($$$)

Engineering and technical consulting costs associated with locating and screening utilities are expected in the design process, and do not add a significant burden to the budget of a project.

Opportunity Costs ($$$)

The only marginal opportunity cost to a project is the potential loss of a parking space if utilities are required in a specific location and/or if the dimensions of the screening take additional area that cannot be dedicated to surface parking.

DESIGN SITES

New Blocks ($$$)

Some design standards mandate the breaking up of larger sites into smaller blocks using paseos, open space, and design features. The intent is to increase the number of routes for walking, biking, driving, and improving circulation. The placemaking benefits of such standards is unquestionable - smaller blocks create more visual interest and convenience for pedestrians and create more opportunities for ground floor retail. However, these placemaking benefits come at a substantial cost due to the loss of leasable space and the need to make costly right of way improvements within a site. The combination of these financial impacts make this a high cost standard.

Cost Discussion

Hard Costs ($$$)

Requiring maximum block sizes or mandating the creation of new blocks impacts hard costs in two ways. First, requiring the separation of leasable area into multiple structures creates additional costs due to increased glazing, multiple entryways, stairway access points, and in some cases elevators. Second, the area between new blocks must be served by right of way - sidewalks,utilities, stormwater systems, and other right of way elements. If

the costs associated with these elements must be borne by the developer, then they represent substantial cost.

Soft Costs ($$$)

Standards that require the creation of new blocks add complexity and uncertainty to the site design process. Subdividing a site, coordinating right of way dedication, and designing associated infrastructure requires engineering, landscape architectural expertise that is likely to add sizable professional fees to the cost of a project. In addition, these standards are likely to be difficult to evaluate, even if written objectively and are likely to contribute to longer permitting timelines.

Opportunity Costs ($$$)

When large sites are subdivided into smaller individual blocks, a percentage of a site's buildable area is lost to make room for roads, sidewalks, paseos, and plazas. This loss of buildable area represents a sizable opportunity cost which grows with the allowed intensity of development. In addition, if the ongoing maintenance of rights of way and public space within the site become the responsibility of the property owner, they could contribute to a loss in net operating income for the project.

Community Open Spaces ($$$)

Standards that require common or shared open space require a certain amount of area on a site to be set aside for communal use by building residents. Requiring community open space promotes community gathering, physical activity, provide stormwater collection, and contribute to urban tree canopy and greenspace. Community open space is particularly impactful in areas with deficient urban tree canopy or access to public open spaces like parks and trails. In contrast to its high placemaking value, this standard does add cost to projects, primarily in the form of opportunity costs and hard costs. Due to these cost factors, its cost impact is medium.

Cost Discussion

Hard Costs ($$$)

Landscaping, lighting, public art, outdoor seating, fencing, and infrastructure related to open space all add hard costs to a project. In some cases, excavation is required, which can be extremely costly.

Soft Costs ($$$)

Incorporating open spaces into a design may require additional consultants such as landscape architects or planners.

Opportunity Costs ($$$)

The impact of community open space requirements on opportunity cost, depends on the size or percentage of site area required. The more site area must be dedicated to community open space, the less area remains for leasable area. Opportunity costs increase with the allowed intensity of development as more potentially leasable area is forgone as for every square foot of lot area dedicated to open space. In addition to lost potential revenue, community open spaces require on-going maintenance and may require increased insurance costs that will reduce net operating income.

Getting Specific

Overall, developers with whom we spoke agreed that community open space is a critical placemaking element and worth including in projects. Some stated that they would include some amount of community open space on projects even if it were not required. This is especially true for affordable housing developers who are serving populations with children in areas that may lack safe and convenient access to parks and urban tree canopy.

However, several developers also stated that overly prescriptive or onerous requirements for community open space had added risk and cost to previous projects. Some stated that small or irregularly shaped sites made it difficult to accommodate surface-level community open space while still being able to fit typical floor plates and unit configurations. In some cases this led to projects being shelved in early phases of due diligence. One developer cited that flexibility to locate community open space on the roof of a building or to satisfy it through a combination of community and private open space was beneficial.

Chapter 5 | Open Space

Promote healthier environment and lifestyle for residents and community

Open space standards stipulate the provision of on-site shared and private open space, such as rooftop decks, courtyards, patios, and/or balconies. The intent of these amenity standards is twofold; first, minimum requirements for private and shared open space seek to address quality of life for residents in larger, multi-family buildings; secondly, requiring certain types and qualities of open space seeks to make sure the impacts of additional residents on existing open space resources in a city are offset or mitigated.

Open space standards have a medium impact on development costs. Opportunity costs can be high if the inclusion of shared or private open space reduces rentable square footage, but this may be offset if the open space is a desirable amenity that the market is willing to pay for; for example, if the cost of providing balconies can be offset by an increase in rent, the cost impacts are negated. However, opportunity costs may be impacted by increased operating costs associated with certain types of open spaces, including balconies and

rooftop decks. These operating costs include higher insurance premiums and added maintenance to mitigate potential issues like water intrusion.

The financial impacts on hard costs are medium, but higher for open spaces that require additional increases in materials and construction such as rooftop decks or balconies. Impacts on soft costs are low to medium as open spaces may require additional engineering and/or administrative review/approval associated with seeking variances or ensuring standards are met.

PRIVATE OPEN SPACE

Individual Patio ($$$)

Design standards that deal with individual patios typically require ground-floor units to provide a certain square footage of private open space in the form of individual patios. Certain elements, including materials or screening, may also be stipulated. The hard costs of providing individual, private patios may increase if additional landscape elements are detailed. Soft costs and opportunity costs are low.

Cost Discussion

Hard Costs ($$$)

Building individual patios requires paving materials, screening, lighting, and landscaping. Individual patios tend to require more measures to ensure the privacy and safety of ground floor tenants. Additional construction time will be spent on this added design element.

Soft Costs ($$$)

Designing individual patios and incorporating patios site-wide will slightly increase design costs. There may be additional costs associated with seeking variances or rounds of review as part of entitlement.

Opportunity Costs ($$$)

Individual patios extending from ground-floor units can reduce the overall amount of open space on a lot. This can make it difficult for developers to achieve their common open space, landscaping, and parking requirements. This is especially true for constrained sites.

Getting Specific

Developers account for shared open space requirements in project designs, even if this represents hard and opportunity costs for a project. While ground-floor individual patios have lower hard costs than private open space on upper floors, e.g., balconies, these costs are still challenging for affordable projects. One option for planners to consider is a

standard that is more flexible and allows projects to meet a total amount of open space that can be split across private and common open spaces. This flexibility would allow project designers and developers to meet the intent of the standard while responding to unique site constraints and shifting hard costs to make projects more feasible.

One affordable developer shared an example of a project in Solano County where this type of flexibility was made available. They were able to provide a mix of common and private open space on the ground floor, including private patios for some units. The cost of providing private open space was offset since this open space helped them meet overall open space requirements on the site.

Balcony ($$$)

Balconies are one type of private open space often required for multi-unit projects. Standards may dictate the number of units that have balconies, e.g., every unit or a certain percentage of total units, and the minimum dimensions (either expressed in terms of square footage or depth/width and/or both). Requiring balconies has a high financial impact on a project. There are significant hard and soft costs associated with both the materials and construction required for projecting, weight bearing building elements.

Cost Discussion

Hard Costs ($$$)

There are significant hard costs associated with building balconies. These include materials for additional built area, screening, and additional structural materials. There are also high costs associated with additional weatherization and waterproofing required of exterior building elements.

Soft Costs ($$$)

Engineering costs for a project with balconies are higher than a project without balconies. Additional design work is needed to ensure balconies are safe and structurally sound. Some additional architectural design work may also be needed to ensure balconies comply with standards and to submit more in-depth permit applications.

Opportunity Costs ($$$)

Balconies may have on-going operational costs in order to maintain due to weatherization elements. Liability costs may also increase.

Getting Specific

For affordable housing developments it is more challenging to provide on-site amenities, given tight budgets and complex financing. Private open space is expensive and increases operating costs long-term.

There was universal agreement across affordable housing developer interviewees that requiring balconies for every unit in a project is untenable. Minimum requirements can also be problematic for a project. Generally, any private open space minimum requirements above 40 SF were considered too high to be feasible.

Market-rate developers we interviewed noted that providing private open space is a desirable amenity to add to a project and a strategy to differentiate in a competitive market. According to one market-rate developer we interviewed, required balcony space exceeding 50 SF per unit is often the limit to what is feasible, even when the additional costs are absorbed by increased rents.

Both affordable and market-rate developers mentioned that flexibility to provide common or private open space to meet a project-wide requirement is a helpful strategy.