

What is Floor Area Ratio (FAR)?

Overview

The *Palo Alto Comprehensive Plan* specifies:

- “Floor Area Ratio,” or FAR, is defined as *the gross floor area permitted on a site divided by the net area of the site, expressed in decimals of one or two places (Glossary, p. 6)*;
- For residential categories, densities are expressed in terms of persons per acre as well as housing units per acre. In non-residential areas, intensity is expressed using FAR (*Land Use Definitions, p. L-10*);
- FAR may be used either to limit the intensity of land use to lessen the environmental consequences of development or to control the mass and scale of development (*Program B-8, p. B-8*).

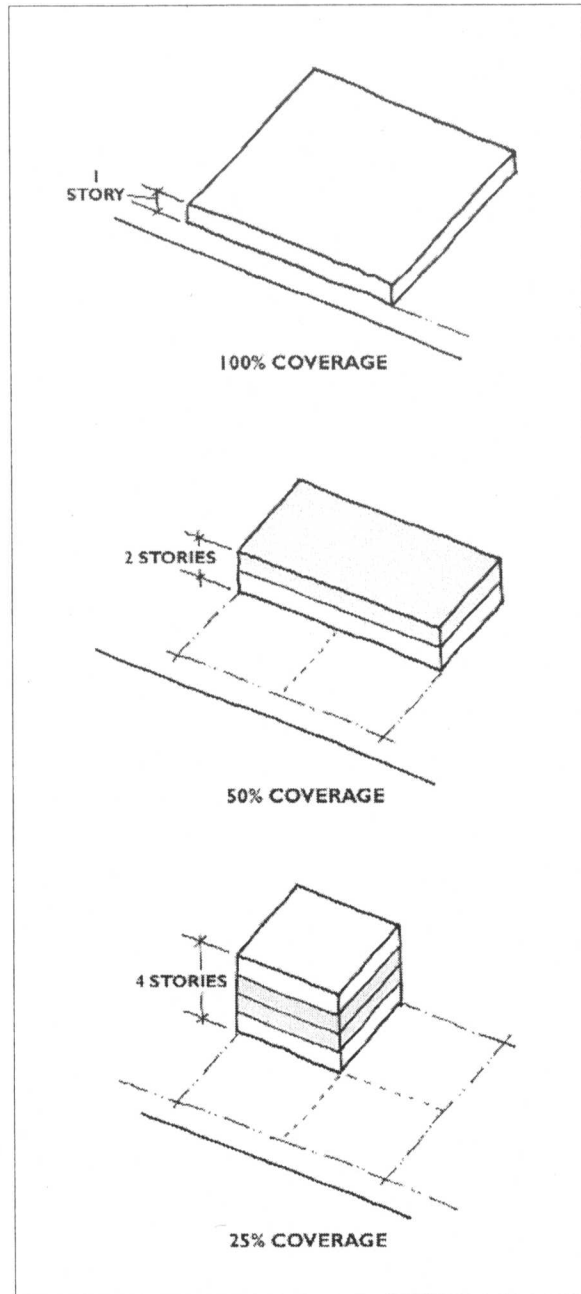
Intent

In Palo Alto, FARs were initially established to estimate daytime population and employment in different parts of the City. By referencing characteristics for a given land use such as number of employees and number of vehicle or transit trips per square foot of building space, FARs can estimate the potential impact of a proposed development scenario. In this sense, FAR is a relatively abstract analytical tool.

Because FAR represents the relationship of the size of a building to its site area, it is also used to describe the *bulk* or *mass* of building volume. In this context it represents an index of building mass, with higher FARs representing greater building volume.

Considerations

FAR is sometimes used as an analytical tool to make broad projections of the impact of different land use and development intensity scenarios based on a set of land use characteristic assumptions. This use of FAR is not an issue in this discussion, however.

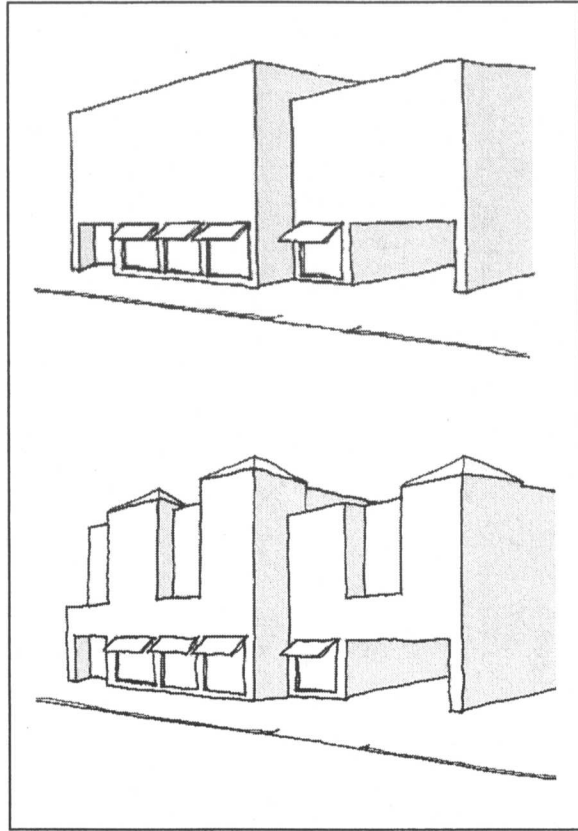


FAR is the ratio of the floor area of a building to the area of the lot on which the building is located. This diagram illustrates three different ways that a 1:1 FAR might be reached: one story covering the entire lot (top), two stories covering half of the lot (middle), or four stories covering a quarter of the lot. While the FAR is the same in each example, the characters of the buildings and site plans are very different.

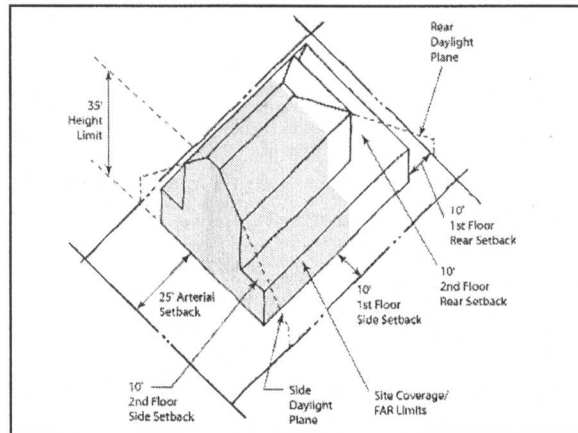
This discussion focuses on FAR as a representation of building mass and scale. In this application, FAR has some usefulness but also significant limitations. Taken on its own, FAR only describes development intensity, but the appearance of a building also depends on factors such as setbacks, building heights, and placement on the site. Two buildings with the same FAR could have very different appearances depending on these other factors. Additional design characteristics such as facade articulation and architectural treatments can further impact building appearance. The focus of this paper is on the use of FAR to affect the design of multi-family, mixed use, and nonresidential development types. Design of single-family residential homes is more typically addressed by detailed setback and height standards and design guidelines.

Building Envelope

Like FARs, however, none of these tools are entirely effective in the absence of other tools. Setbacks and building heights taken together create a “building envelope,” but there is a tradeoff: a generous building envelope allows room for a variety of design solutions, but if “maxed out” can inadvertently allow a building to be unacceptably massive (this is a common issue on the Peninsula particularly in lower-density residential districts). If the building envelope is more tightly defined, there is more assurance that massiveness will be limited, but there will be less flexibility to allow a variety of design solutions. From this perspective, FAR can work in tandem with setbacks and heights to further define the building form but still allow flexibility in design solutions. As long as the FAR represents a building mass that is less than the setback/height envelope, design flexibility can be maintained while also controlling the building mass. If both FARs and setbacks are used, the relationship must be carefully established through testing of different design scenarios.



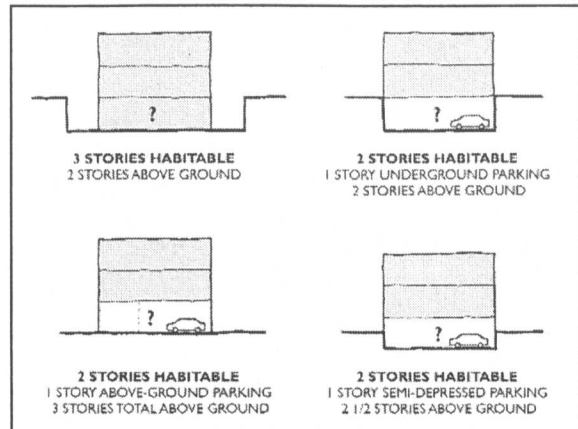
FAR describes building mass but not architectural character. Two buildings with the same FAR may have different appearances depending on facade articulation, roof massing, and architectural detail.



Setbacks and building height limits create a “building envelope” in which development may occur. A maximum FAR or site coverage can limit the building to a size that is smaller than would otherwise be allowed by the building envelope defined by setbacks.

Consistent Application

If FAR is to be used as an index to represent building mass, its application needs to be consistent throughout the zoning code. This is not currently the case, partly because of the dual nature of FAR as a tool for projecting project impact as well as a tool for representing apparent building mass. For example, in a building with one level of underground habitable space, should the underground space be included in the FAR calculation? From the perspective of project impact, the floor area represents a building program that will create impacts on such measures as employment, vehicle trips, tax base, etc. However, from the perspective of building mass, the underground floor area may not impact the exterior appearance of the building, so it may not make sense to include it in the FAR calculation. The matter is further complicated by garage spaces and “half stories” such as semi-depressed parking garages, which represent increases in exterior mass but not necessarily increases in usable floor area and not proportionate to a full floor volume. If FAR is intended to accurately represent apparent building mass, its application needs to be further refined and applied consistently so that it reliably represents true exterior building mass.



Should FAR represent a measure of total habitable floor area or external building mass? Finished basements, on-grade parking and semi-depressed parking are examples where the objective to measure potential project impacts though FAR might be different than using FAR as a measure of external building mass.

FAR vs. Density and Site Size

FAR also impacts projects differently depending on site size. On smaller sites the combination of maximum number of units (as defined by maximum residential density) together with the variety of setbacks and daylight planes limits the number of units to a total that is generally proportionally lower than the allowable FAR. The results are projects with small numbers of fairly large units. On larger residential sites, however, the opposite is the case: FAR becomes a greater limiting factor than maximum residential density. This creates a problem when projecting the number of units that could be anticipated on a given site because the total allowed by the density cannot be reasonably achieved within the allowable FAR. This relationship suggests a two-tiered or “sliding scale” relationship that accounts for the different dynamics between smaller and larger sites, and suggests a need to correlate between FAR and density for both small and large sites to achieve desirable density and housing types.

Form Code

The Comprehensive Plan states that the mass and scale of development can also be achieved through more flexible zoning and design tools that use performance standards and building code requirements. This notion is fundamental to the concept of a “form code.” In a form code, regulations address the location and physical aspects of buildings or sites by establishing the location and form of structures through setbacks, building heights and other physical features, rather than controlling development by applying maximum development limits such as FARs.