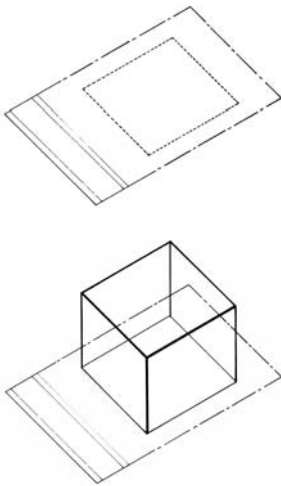


lishes fixed building-line setbacks in districts of common height and land use. The other, a much more flexible application, is used in what are called “unlimited height” districts, generally zoned for intense mixed-use development. Common to both methods is the concept of a hypothetical envelope setting height, width, and depth. Within this volume, the designer and developer are generally free to act in their own interest.

Building-line setbacks bound an envelope of usable space on a property. For example, a land-use designation for a district of detached houses will usually require an envelope that sets the building back a certain distance from property lines on all sides. The envelope for higher-density housing or commercial development may not be set back at all, or only at front and back, allowing neighboring buildings to run continuously along the street. The volume that rises within setbacks is generally rectilinear, a vertical extension of the U.S. Land Ordinance of 1785. If the imaginary boxlike envelopes could be seen, they would appear to stack themselves along our streets in some rough approximation of the buildings that, under modern growth pressures, will almost surely fill them.

The customary zoning practice of connecting building-line setbacks to land use leads to problems when the use of the land is changed. For example, when an aged area of detached houses is rezoned for higher density, the height and bulk of the new envelope can result in a scale shift that disrupts the neighborhood. The result is not only visually disruptive; it can be socially and economically unsettling as well.

A second method of establishing building boundaries in American cities, also based on the envelope concept, is more flexible in its application. The height of the envelope, instead of being fixed, is based on a ratio between developable land area and the floor area within the building on that site. This floor-to-area ratio (FAR) allows considerable freedom to change building shape. A FAR of 13, for example, limits the square footage of the building to 13 times



Building-Line Zoning:  
(Top) Property-line setbacks;  
(Bottom) Volume projected  
upward from setback lines.



Change of Land Use.

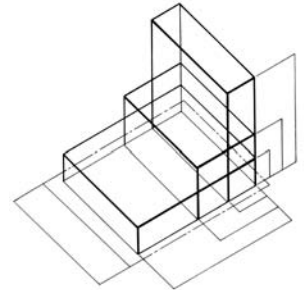
the developable square footage of land. That FAR may be achieved by covering the entire area within setbacks with a 13-story building. It is also possible to achieve the same FAR by covering only half the buildable site and doubling the height to 26 stories, or by covering only a quarter of the site and building 4 times as high, to 52 stories. Clearly this approach to zoning offers design options that are valuable in high-density, mixed-use development. But there are problems with its application regarding access to sunshine.

As far as solar access is concerned, the difficulty with unrestricted-height zoning is the unpredictability of shadowing effects. For example, in downtown Los Angeles, some tall buildings overshadow an area of two city blocks at midday in winter when people are out shopping and eating.

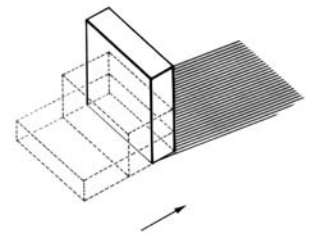
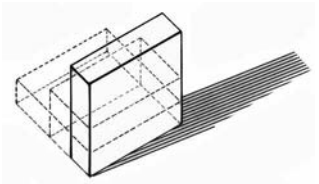
Orientation as well as height can be critical. The siting of slab-like buildings can have different impacts on the surroundings. A building with its broad flat sides facing east and west will cast a small midday winter shadow, while one oriented broadsides north and south will have an enormous shadow, impacting day lighting, energy conversion, and midday street life.

Regardless of zoning practices, either fixed or flexible, unprecedented growth continues to override nature. Large-scale development obscures natural variation on the land. High-energy buildings mask variety for their dwellers. We need a method of zoning that accepts the common usage of an envelope but with adjustments that reconnect us to nature.

*Solar-access zoning* opens design possibilities for comfort and choice, for a sense of well-being and joy in a place. It scales new construction to what already exists, avoiding the disruptions of



Zoning Based on Floor to Area Ratio.



Differing Shadow Impacts at Midday:  
(Top) Building sited with its broad sides facing east and west;  
(Bottom) Building with broad sides facing north and south.