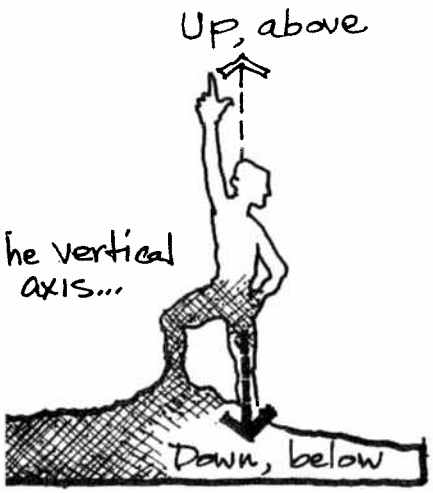
4

UP AND DOWN

The up/down dimension of contrast establishes the vertical axis of architecture. We experience this axis through our own bodies, as they extend to the earth below and the sky above. David Ignatow's poem in *Earth Hard* (London: Rapp & Whiting, 1968, p. 62) captures the human experience of up/down.

Earth hard to my heels
bear me up like a child
standing on its mother's belly.
I am a surprised guest to the air.



We define up and down as we orient our bodies to the earth's gravity.

The poem expresses the developmental aspect of up and down. An infant grows into the vertical axis — the baby first lies prone, then sits up, then stands. Each step of the way opens vast new dimensions in the spatial experience of up. Buildings, too, have developed historically from primitive caves and dugouts, essentially down and in kinds of places, to towers that rise up and claim the vertical axis in increasingly complex ways. Similarly, this is how buildings are constructed — from the ground up.

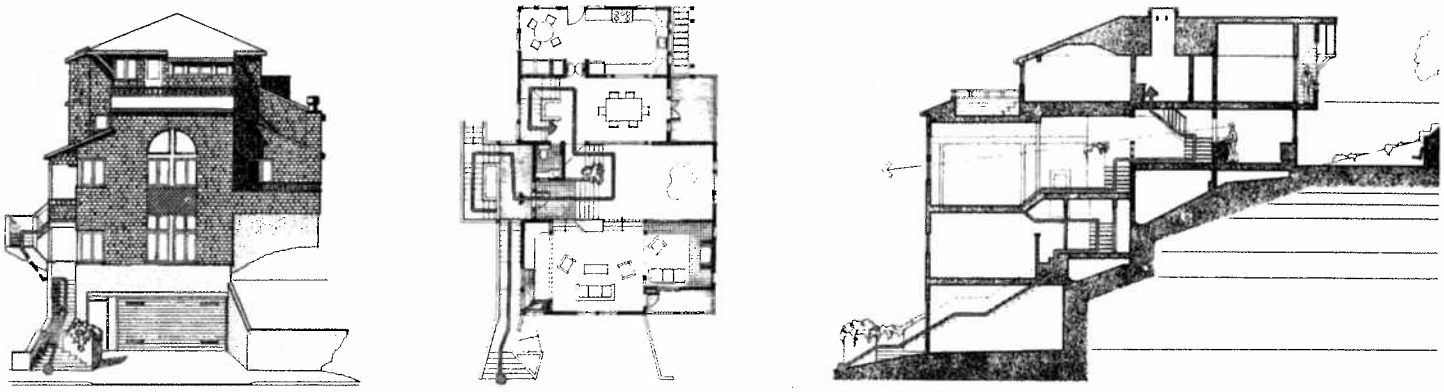
The power of the up/down dimension comes from establishing the contrasting poles of experience within a building. Like Ignatow's poem, a building that rises, a guest of the air, gains strength through experiential contrast with the way it stands on the ground, as it were, with its feet upon its mother's belly.

Creating Up and Down

There are several ways to create the contrasting experiences of up and down in a building. Later in this chapter, we'll discuss ways to link them together.

Ascending/Descending

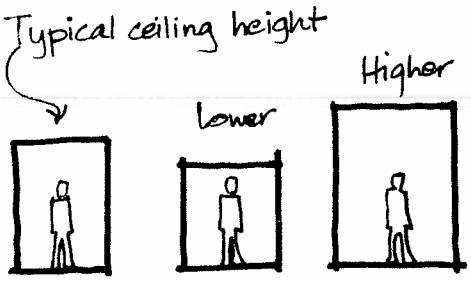
We experience the effort involved in moving to different levels physically. After providing access and egress for the physically disabled, we create different floor levels simply for the joy of moving about. Just one or two steps suffice to create a distinct separation between two areas (because two steps are more noticeable than one, they won't be tripped over as easily). The contrast between the upper and lower floors of a building will be intensified by unifying all the stairs into a single staircase, enabling occupants to see, understand and experience simultaneously the connection between the upper and lower stories. Steep stairs and ladders increase the sense of up and down, because they intensify the effort of ascent and descent.



To climb a steep hill, a building becomes a staircase—the retaining walls are its risers and the floors its landings. The Santi residence, designed by Max Jacobson and Murray Silverstein, has eight major landings as it climbs from the dug-in garage to the bedrooms on the highest level.

Stairways create a strong contrast between up and down, at the same time linking the two together. (Lincoln Club, San Francisco, by Gardner Dayley; photo by Roger Sturtevant.)

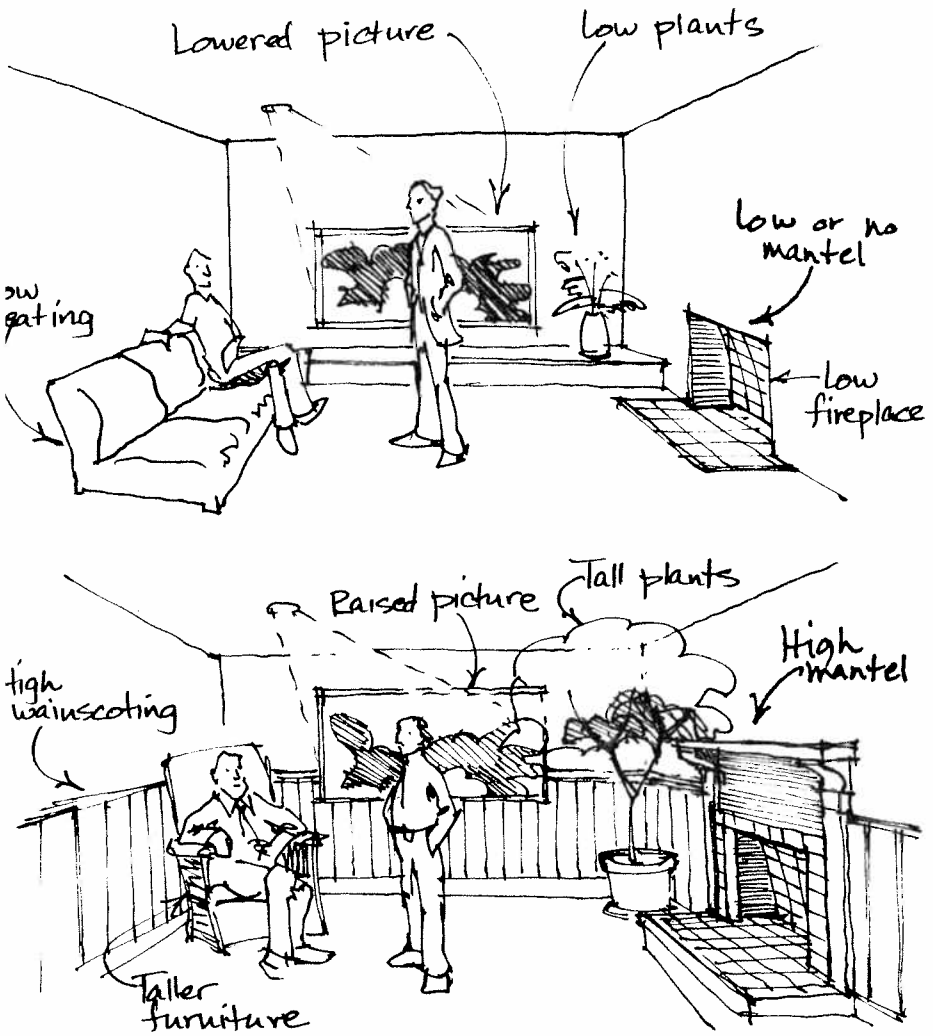
Changes in ceiling height create an awareness of the up/down dimension. A lower ceiling makes occupants feel taller, whereas a higher ceiling makes them feel shorter.



Ceiling Height Variety

Residential ceiling heights in the United States are commonly 8 ft. By simply raising the ceiling 6 in. to 12 in., the room can be made to look considerably loftier—and occupants will feel correspondingly shorter. Similarly, lowering the ceiling height by the same amount shrinks the room, and users feel correspondingly taller.

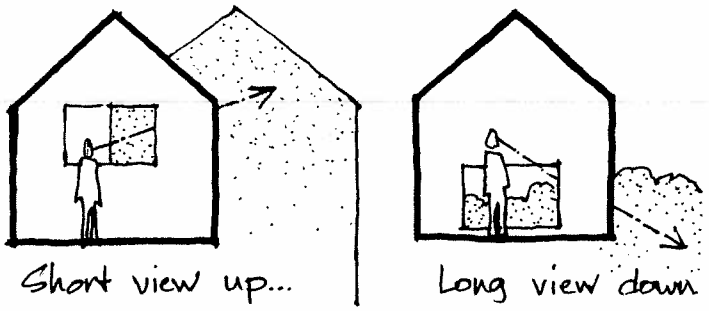
Ceiling height is just one element that designers can manipulate to affect up and down. The horizontal elements of baseboard, wainscoting and fireplace mantel, for example, can be raised to make the room feel shorter and lowered to make the room feel taller. Similarly, if the vertical scale of the room's furniture is interrupted with long, low pieces, the occupants will feel strangely taller, eager to sit down to reduce their relative scale and reestablish normalcy.



Lowering a space's horizontal elements will encourage users to sit down. Raising the elements will do the opposite.

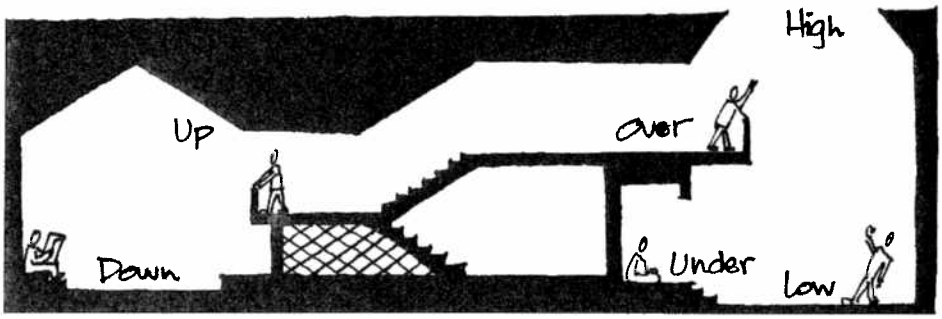
Length and Direction of Views

From high up, we see far and can look down upon the landscape. So when trying to create a space that feels high, provide a window with a long view; for an even more powerful effect, lower the windowsill height (or balcony railing) to ensure that residents look down onto something beyond.



A high window with a view up makes the floor space feel low and deep. A low window with a view down makes the floor level feel high.

The up/down element is strengthened whenever there is a perch or lookout from which users can survey the space below. Such places are often created at stair landings, midway between floors and at interior balconies or catwalks that cross a high space.



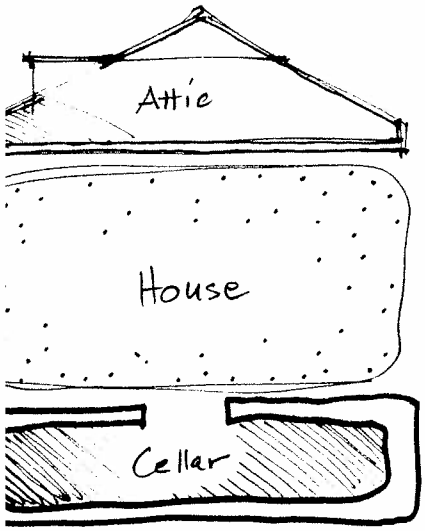
Stair landings enable climbers to look back down over a space below, giving a strong feeling of contrast between up and down.

Manipulating the Apparent Danger

Our instincts tell us that high spaces are more dangerous — there is always the risk of falling. One way to create the impression of height, therefore, is to increase the apparent danger. Do this by using semi-transparent hand railings (like wood lath), thin balusters of metal (or even tempered glass) or by reducing their height to the minimum required by the building code. Alternatively, the stairs leading up to ever-higher spaces can become steeper and steeper, culminating in a ladder up to the attic. Simply creating a view into the crown of a tree will allow inhabitants to see the effect of the wind in the swaying branches, making them realize how high up they are.

Semantic Congruity

As you climb a tree, you notice that increased height is accompanied by thinner structure, more light and greater breeziness. By analogy, you can create an increased sense of height with more light and ventilation, and with more delicate framing, trim and decoration. Conversely, you can create an increased sense of depth with less light and breeze, and with a more solid, thicker structure.



The house links the cool, damp dark of the llar below with the warmer, ·ier and lighter attic above.

Linking Up and Down

Here are several techniques for linking up and down.

"Connection" of Separation

Paradoxically, one way of linking two things is to separate and disconnect them intentionally, to make the break between them noticeably sharp and complete. One way to create this kind of nonconnection in a house is to incorporate a traditional cellar and attic—the cool, dark depth of the cellar contrasts with the lofty framed spaces of the attic. But in this age of cheaper building, houses are often built on slabs or with crawl spaces and no cellar; the attic space is also often eliminated. Although it is economical, this type of construction has resulted in a loss of richness in the up/down dimension.

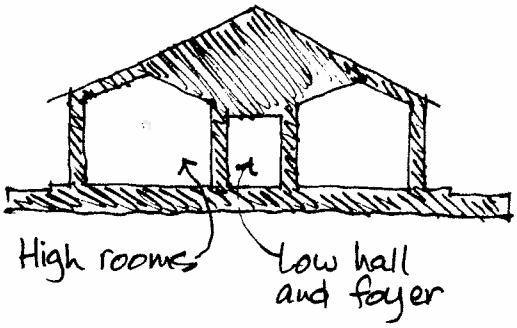
Temporal Connection

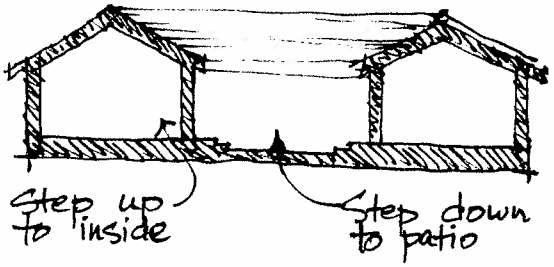
You can link up and down in a house by considering how people move through the building when they use it. For example, if all the circulation spaces (halls and foyers) have low ceilings and all the other rooms have high ceilings, occupants will automatically experience a rhythm of up and down as they move through the building. Another example of this type of link is a central patio that is a step or two below the surrounding rooms. Each movement from inside to outside is thus accompanied by an awareness of stepping up or down.

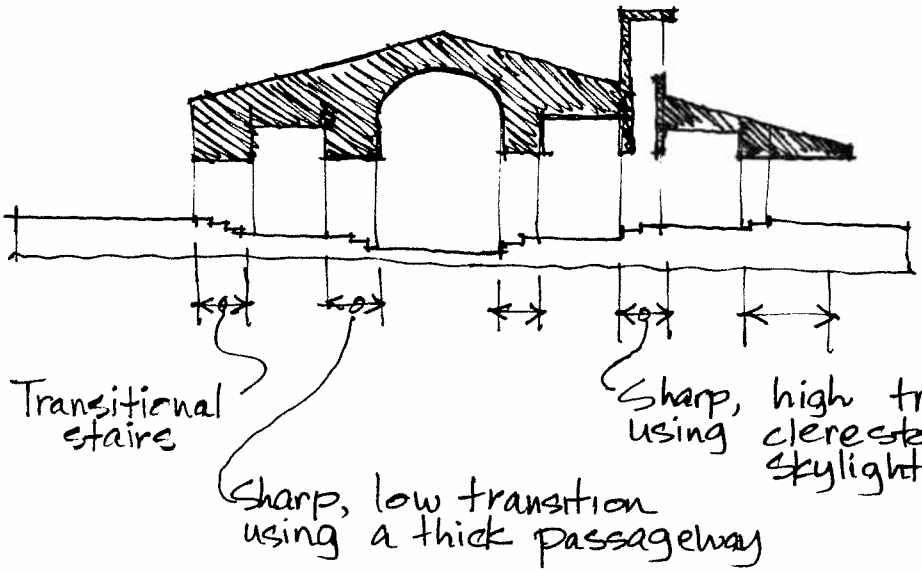
Linking with a Transition

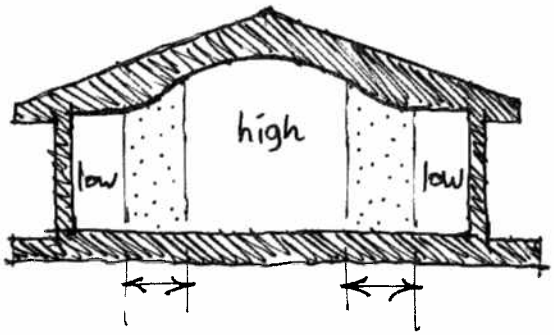
Designers can link up and down by creating a transition between them. This transition can be sharp and focused, or smooth and gradual. But if it is clearly something, it will help occupants form a distinct experience of up and down. For example, connect a high space to a low space with a third, transitional space—perhaps a very high one or one that is very low.

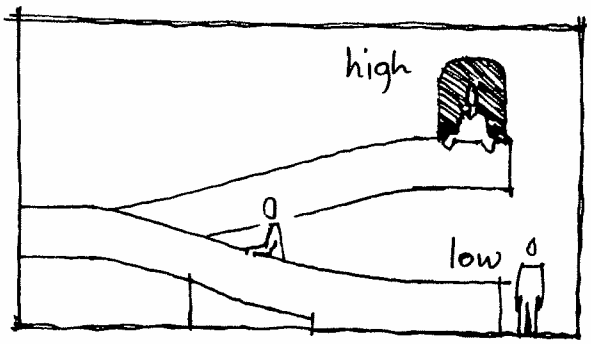
Smooth, continuous transitions gently lead occupants from high to low and back again. Ramps are examples of smooth transitions, as are stairs that are gathered into a single flowing system that is visible as a unity. Or the ceiling in a large space can smoothly curve down toward the walls, creating lower spaces at the edges.





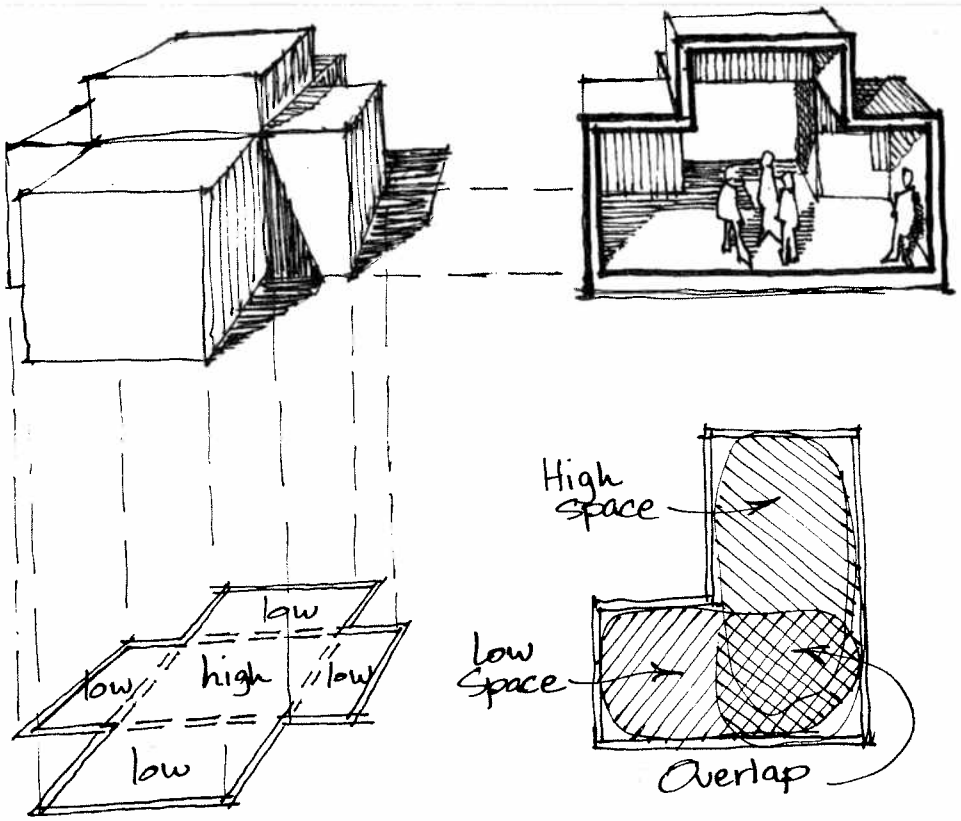




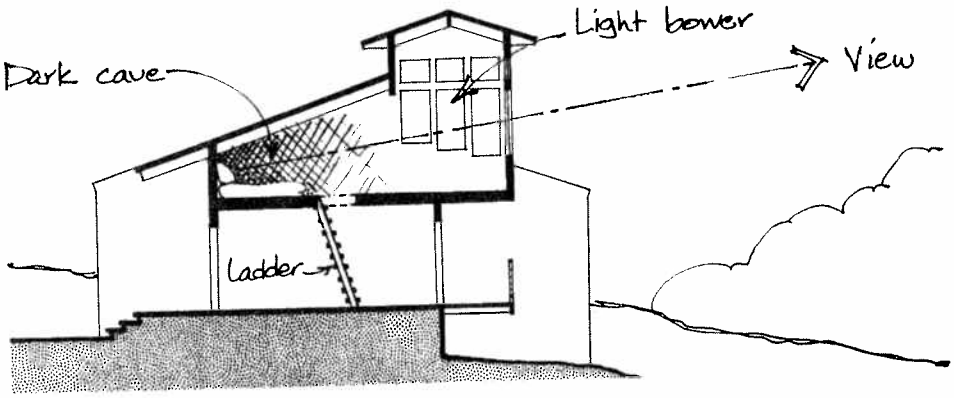


Smooth transition using curved ceiling . . . . . or a ramp.

High and low spaces can be linked by transitional spaces that occupants move through as they use the building. The transitions can be smooth or sharp.



The experience of high and low can be linked if the two spaces interpenetrate and overlap.



This small residential addition embodies both a low cave and a high bower.

Interpenetration

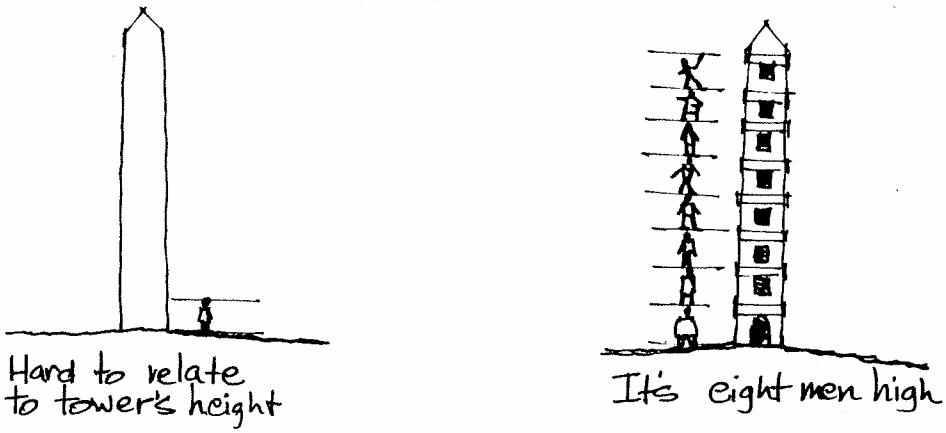
High and low spaces can link by interpenetrating, as shown at left. At the overlap is a space where up and down are experienced simultaneously, where residents can sense the vibrations of each.

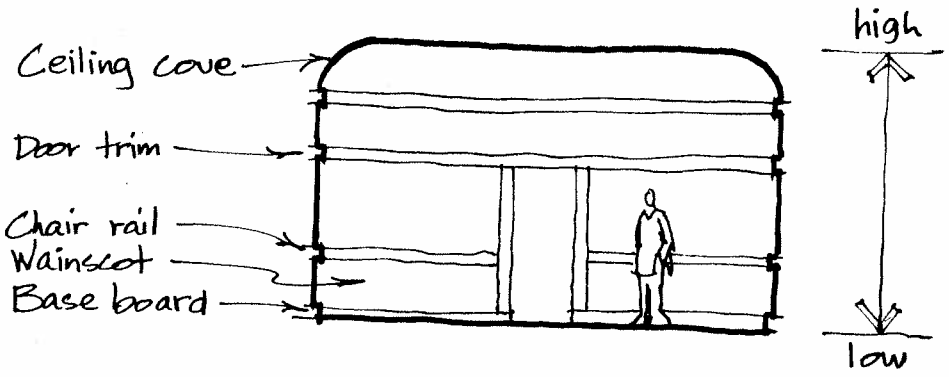
Cave Equals Bower

The fundamental opposition of up and down is most directly expressed by two places: a down place (low ceilinged, cavelike, symbolically if not literally dug into the ground) and an up place (higher, lighter, having a view.) But the interpenetration can be so complete that down and up, cave and bower, fuse together in one place. Imagine, for example, a space with a low-ceilinged, dark-paneled nook, two steps down from a larger, higher-ceilinged room that is organized around an extra-large window on axis with a view. The nook is the cave and the high space, with its focus on the view, is the treetop bower. We sought to create this type of experience in a single space in a remodeling project that included an attic study. The space is entered via a steep stair leading up to a low, dark alcove, which opens out on a high space wrapped with tall windows on three sides. The entire space is 12 ft. by 16 ft. in plan.

The Horizontal Scale

Earlier in this chapter we described how a sense of up or down could be created by varying the height of windowsills or ceilings. Here we look at the more general issue of how to link up and down. Up and down can be interrelated by means of a scale, a measuring rod that allows us to see how much distance is involved in getting from one to the other. We cannot very easily experience the height of a sheer 30-story glass-skinned office building without the expression of the floors on its facade to give measure and scale to its height. And we can better experience the height of a room's wall if we can relate it to the horizontal lines of baseboard, windowsills, door jambs and picture rail. Use long, continuous horizontals at different heights to link and relate high and low.

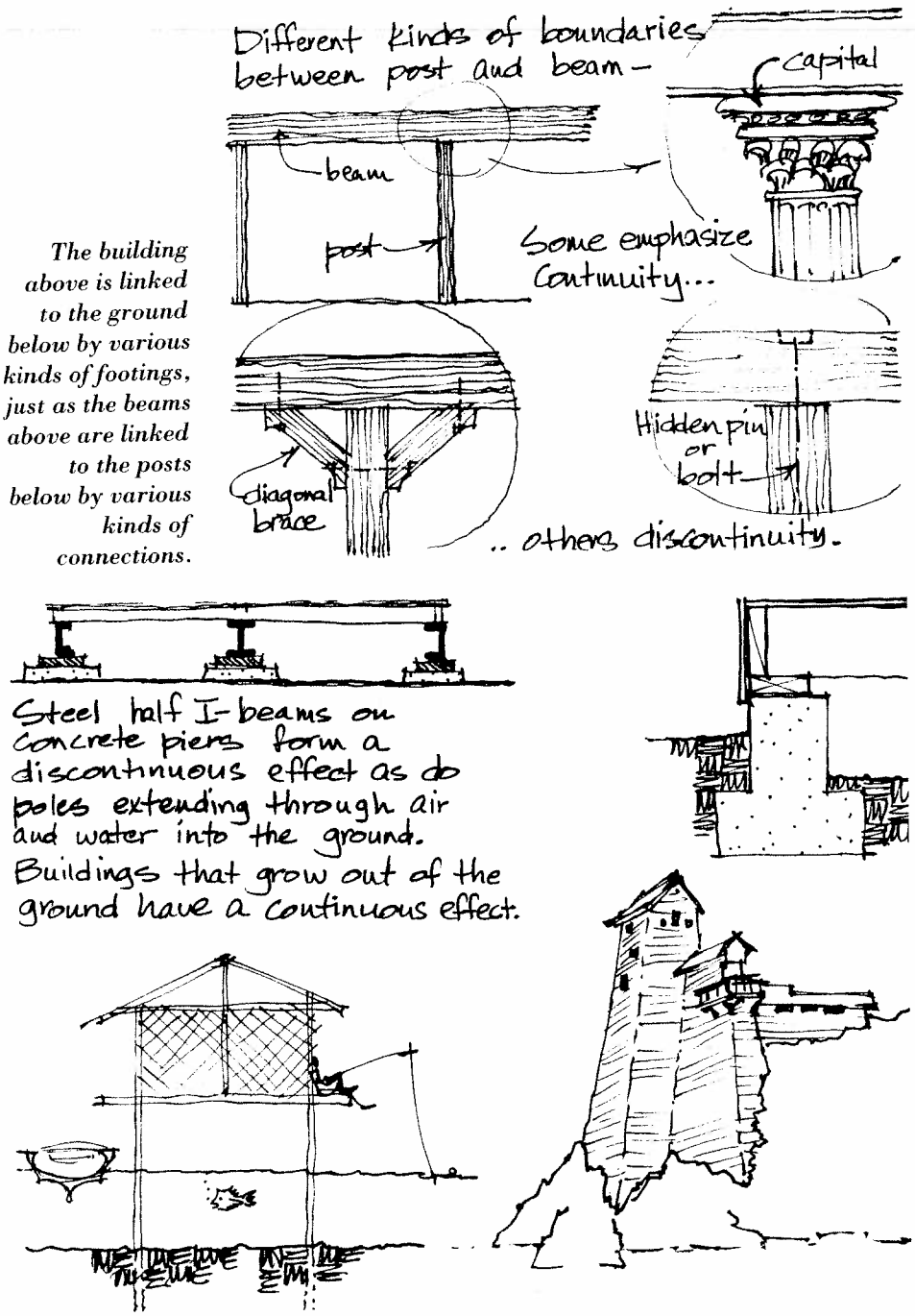




Horizontal elements enable us to link up and down by giving us a yardstick to estimate the degree of height.

The Structural Link between Up and Down

A final way to discuss the up/down dimension is to look at it from a structural point of view. The ground and foundation are down, the roof and chimney are up; we need to link the two extremes structurally. Begin by examining how the building is linked to the ground. Is it a smooth, flowing connection or a sharp, discontinuous one? Does the



The building above is linked to the ground below by various kinds of footings, just as the beams above are linked to the posts below by various kinds of connections.

connection express the up of the building and the down of the ground? Typical links between the building and the ground are shown at left.

Look at some of the more detailed ways that the structure of the building relates up and down. For example, at any floor the structure above our heads is typically borne by joists, and this load is transferred (or linked) to the underlying floor by walls and beams or columns. These links can be smooth or discontinuous, but they must be there in some form or the building will collapse. The building can make us aware that there is a load up there and a supporting ground down there; this is done through the design of the linking structure.

At an even smaller scale, look at the way in which the upper loads within the beam are carried down into an underlying post or column via a link between the two, a joint that can be infinitely varied, but which has the potential capacity of expressing the flow of load from up to down.