

## Ceiling Heights in Homes and Offices

*The modern trend to  
taller ceilings is a return  
to tradition.*

**CERTAIN DOMESTIC** features are taken for granted in today's new home market: granite countertops in kitchens, separate glass-walled showers in bathrooms, walk-in closets in bedrooms. Another feature that has become common in new production houses is the high ceiling. According to the National Building Code, the standard ceiling height is ninety-six inches, or eight feet; for suspended ceilings, the minimum height is ninety inches, or seven and a half feet. But nine- and ten-foot ceilings are now common, not only in living rooms and kitchens, but also in bedrooms. Even taller ceilings are appearing in custom homes. Yet not so

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Figure 1: An office of the 1960s



long ago, eight-foot ceilings were the norm. What changed?

The minimal modern ceiling appeared first in the work of one of the pioneers of twentieth-century architecture, the French-Swiss architect Le Corbusier. In 1920, he unveiled the so-called Citrohan house, whose name was a pun on Citroën since it was a prototype for a house that was to be as practical and convenient as a car. The two-story design consisted of a full-height living room, overlooked by a bedroom, which was located in a sort of loft. To reduce the overall height of the house, Le Corbusier made the bedroom as low as possible, about seven and a half feet. The Citrohan house was never built, but in the 1950s Le Corbusier used the double-height living room concept in a series of

high-rise apartment houses called *unités d'habitation*. In the *unité d'habitation*, the low ceiling in the kitchen or bedrooms was intended as a counterpoint to the soaring living room.

Another famous architect, Frank Lloyd Wright, used a similar arrangement in the Suntop Homes, built in Ardmore, Pennsylvania in 1939. A loft containing a kitchen with a ceiling that was only about seven feet high overlooked a two-story-high living room. The ceilings in Wright's Prairie-style house were often extremely low, since the architect (who was five feet, five inches tall) accentuated the horizontal lines of his designs. His architecture influenced the appearance of the so-called ranch houses, a staple of 1950s and 1960s production housing, which were generally

low to the ground, with ceilings dimensioned accordingly. As houses started to be mass produced, low ceilings became the norm; builders and architects considered ceilings taller than the legal minimum to be wasteful and inefficient. Buyers seemed to agree—even large, custom-designed houses regularly had low ceilings; seven and a half feet was not uncommon. Over time, the more or less universal standard became eight feet, a dimension that resulted from two four-foot-wide drywall sheets being laid horizontally one above the other.

Another influence on ceiling heights was environmental. Before the advent of air-conditioning, taller ceilings made for cooler rooms, as hot air gathers at the top of a tall room. With air-conditioning, this was no longer true. Lower rooms were more convenient—and cheaper—to cool.

Sometime in the 1990s, homebuilders started experimenting with taller ceilings. The historic preservation movement can take some of the credit for this evolution. Previously, when old buildings were “modernized,” tall ceilings were usually covered over with a dropped ceiling. When the public started becoming interested in older buildings, there was a heightened appreciation for “interesting” details such as ceiling moldings, coves, and plastered ornament. Dropped ceilings were removed and the old tall ceilings were restored to view. Part of the historic preservation

movement was the adaptive reuse of old buildings, especially old industrial buildings, which usually had tall ceilings. Developers discovered that tall ceilings were popular with buyers, and they became as much a feature of “loft living” as open plans, brick walls, and exposed ducts.

Just as historical features such as decorative gables, divided windows, and paneled doors started showing up in new houses, so did taller ceilings. Homebuilders were happy to oblige since tall ceilings didn’t add much cost or complexity to the building process—and buyers were willing to pay. At first, taller ceilings were offered as extras, but soon nine feet became the new standard, and drywall manufacturers started producing sheets four and a half feet wide to accommodate the new demand. Incidentally, when the minimum ceiling height in the Netherlands was raised from eight feet to about eight and a half feet in 2003, the reason given was that people were taller, which may be another reason for higher ceilings. The average height of adult males in the Netherlands is slightly more than five feet, eleven inches, taller than most Western countries, including the United States, where the average height of adult males is slightly less than five feet, ten inches.

A similar move to taller ceilings has occurred in office buildings. In 1965, the newest skyscraper in Manhattan was the

**Figure 2:** An office in the Comcast Building, Philadelphia



CBS Building—Black Rock—designed by Eero Saarinen. The stylish interiors by Florence Knoll Bassett were the best that corporate money could buy; modern art hung next to modern furniture (much of it designed by Saarinen and Bassett). The ceilings were eight feet nine inches, which was considered generous, since the norm for office buildings at that time was eight and a half feet. According to architect Graham Wyatt, it was Gerald Hines who, in the late 1970s, decided to make nine-foot ceilings the norm in his office projects. This soon became the industry standard for class A office buildings.

Thirty years later, office ceilings have continued to grow taller. The ceilings of the recently built New York Times Building, for example, are eleven feet high.

Since conditioned air is fed from the floor, rather than from the ceiling, the taller height is not a disadvantage to cooling. The new Comcast Center in Philadelphia also has eleven-foot ceilings, and executive floors have thirteen-foot ceilings (Figures 2 and 3). Taller ceilings in office buildings have been driven not only by the prestige associated with taller rooms. The growing popularity of open planning and office cubicles means that large expanses of space are visible, and taller ceilings make these work places more pleasant. According to Robert A. M. Stern, the architect of the Comcast Center, “Taller ceilings also allow light to penetrate deeper into the building, which is important if you are optimizing daylighting.” This point is particularly important in office buildings seeking

**Figure 3:** Seating area and conference room in the Comcast Building, Philadelphia



LEED certification. On the other hand, energy concerns for heating and cooling mandate lower rather than taller ceilings, so it is unlikely that office building ceilings will continue to grow. Rather, they will probably recede somewhat, to reach a median between the old nine-foot standard and the current eleven feet.

Although the general trend in commercial construction has been to higher ceilings, there are situations where lower ceilings persist. One is Washington, D.C. According to the Building Height Act of 1910, buildings in the District cannot be taller than the width of the street plus twenty feet. In practice this means a maximum building height of 130 feet on avenues (160 feet on parts of Pennsylvania Avenue), and ninety feet on residential

streets. Since developers want to maximize the carrying capacity of a site, there is pressure to minimize floor-to-floor heights. This is done by keeping ceiling heights relatively low and minimizing structural depth by using thin post-tensioned or prestressed flat concrete slabs. Another situation where the floor-to-floor dimension may be critical is when a building is just under seventy-five feet tall. The Uniform Building Code (UBC) requires special arrangements for elevators and fire protection for buildings that exceed a seventy-five-foot height limit. That means that in order not to trigger the UBC requirements, a six-story office building would have to have ceilings no taller than nine-feet (twelve and a half feet floor-to-floor).

## CONCLUSION

Are taller ceilings yet another example of wretched architectural excess? Not necessarily. In fact, it is low ceilings that are the aberration. Throughout the nineteenth century, ceilings in middle-class homes and in office buildings were ten to twelve feet or higher. Ceiling heights followed the architectural rule of thumb: “The larger the room, the taller the ceiling.” A banking hall, for example, could easily have a twenty-foot ceiling; a board room was expected to have a taller ceiling than a private office. This was not just a matter of prestige—a tall room looks better-proportioned. The Renaissance architect Andrea Palladio devoted a chapter of his famous treatise *The Four Books on Architecture* to the subject, and included rules to calculate ceiling heights. One rule was to add the length and breadth of a room and divide by two, which means that a room ten feet by twenty feet would have a fifteen-foot ceiling. A simpler rule was to make the room as high as it is broad. This meant that Renaissance rooms were regularly eighteen to twenty feet tall. Modern buildings will never have ceilings this high, but the changes of the last two decades suggest that while extremely tall ceilings may be somewhat reduced to reflect energy concerns, relatively tall ceilings are here to stay.

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A shorter version of this paper was posted on *Slate*.