

Storefront vs. Curtainwall: What's the Difference?

Today, we're talking about two types of commercial building envelopes: the curtainwall system and the storefront system. Thanks to advances in interior structural elements like reinforced steel beams, external walls no longer have to serve load bearing functions. Shifting the load bearing responsibility paved the way for more dynamic options for the exterior, including using glass. Curtainwall and storefront systems, though they are often used in different sections of a building and can serve different functions, both act as non-load bearing, aesthetic, and protective shells, and both are usually composed of glass and aluminum.

What is the simplest way to define them?

Take a look at a more modern office building in downtown LA. If the walls are flat and glass, then these two terms apply to that building. "Storefront" and "curtainwall" describe two types of exterior work, both of which achieve certain design and function goals.

What are they exactly?

A storefront system's placement and function can (in most instances) be found in the name: it is often the first thing you see when you walk up to a building, and it has to accommodate viewership, entrances, and exits. This type of structure features elements that interrupt the plane of the facade—doors, windows that open, panels, etc.—in order to serve the highest traffic portion of the building. Curtainwall systems, because they occur higher up and are designed to be repeatable, do not have these elements, and are, like curtains, consistent and of a piece.



Typical storefront

Where can they be found?

Both systems can actually be used throughout a building, and the final design depends on the preference of the owners and architects, but there are optimal placement options for both. Ideally, storefront systems will not go above fifteen or sixteen feet, but they can be used effectively on high rises if placed between floors. (This placement actually helps in case of fire by eliminating a lot of smoke; curtainwall, by contrast, requires the inclusion of extra fire retardant material to prevent smoke traveling.) Storefront can be reliably found in projects like liquor stores, strip malls, and laundromats. Curtainwall systems are designed to withstand high wind loads, so they are better utilized higher up on a building, spanning multiple floors. Though more expensive to engineer, the heavier metal composition

of a curtainwall system makes it an ideal choice for withstanding elements of altitude, day in and day out.



Typical curtainwall

What is another key difference between these two systems?

One important difference can be found in water drainage. Curtainwall systems are more robust in their capacity to withstand and properly respond to elements, as they generally occupy a higher percentage of total building space (as well as a literally higher portion of the building.) This system features units of glass that each have their own mini-drainage systems (“weeps,”) which means that when water encounters a curtainwall system, it is dispersed across all these units’ weeps and does not overload any one section. The smaller storefront portion often features a different drainage system, one that directs all water to the same sill. This type of conduction is more efficient for a system with inconsistent elements (doors, operable windows,) but it can be more easily overloaded, so it is important to protect lower floors with element-resistant features like overhangs whenever possible.



Curtainwall unit

What are some of the benefits of these systems?

These two systems work in tandem to meet a high standard of performance. Use of glass as the barrier between interior and exterior means that natural light filters in, which reduces the need for artificial light, a pleasant and cost-efficient side effect. Both systems have the option for inclusion of operable windows, and although it is more common in storefront, it introduces the possibility for natural ventilation, another cost-reducer. Cost is variable, but storefront is often a cheaper option for lower

floors, while curtainwall, though often more expensive, is a flexible and dynamic option for a building that prizes a clean look and sustainable features.

Storefront systems and curtainwall systems are now in wide use in commercial building, thanks to their functionality, performance, and aesthetic. When the Hallidie Building in San Francisco was completed in 1918, its glass curtainwall was celebrated as stunning and innovative. Now use of glass on the exterior of commercial buildings is ubiquitous, and this building has a place in the national register of historic places--a testament to its status as a starting point for an American lineage.



Hallidie Building in San Francisco, California

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