



What is a Curtain Wall?

Curtain wall is a term used to describe a building façade or ‘skin’ which does not carry any dead load from the building other than its own dead load. These loads are transferred to the main building structure through connections at floors or columns of the building. A curtain wall is designed to resist air and water infiltration, wind forces acting on the building, seismic forces, and its own dead load forces.

This History of the Curtain Wall

Historically, a curtain wall described the set of walls that surrounded and protected the interior of a medieval castle. These walls were frequently connected by a series of towers or mural towers to add strength and provide for better defense of the ground outside the castle, and were connected like a curtain draped between these posts. Additional provisions and buildings were frequently enclosed by such a construction, designed to help a garrison last longer during a siege by enemy forces.

Curtain walls are typically designed with extruded aluminum members, although the first curtain walls were prepared of steel. The aluminum frame is typically in filled with glass, which endows an architecturally pleasing building, as well as benefits such as day lighting and environmental control. Other familiar infill includes stone veneer, metal panels, louvers, and operable windows or vents. Curtain walls differ from the storefront systems in that they are designed to span multiple floors, and take into consideration design requirements such as thermal expansion and contraction, building sway and movement, water diversion, and thermal efficiency for cost-effective heating, cooling, and lighting in the building.

Prior to the mid-20th Century, buildings were constructed with the exterior walls of the building sustaining the load of the entire structure. With the advent of the structural concept of shear walls and building cores, the exterior walls of buildings no longer had to sustain high dead loads and could be designed as much lighter and more open than the brick and steel facades of the past. This gave way to augmented use of glass as an exterior facade, and the modern day curtain wall was born. The first curtain walls were prepared with steel mullions, and the glass was attached to the mullions with tape and urethane sealant. An outer cap was installed to hold the glass in place and to defend the integrity of the seals. Today, the design complexity and shapes obtainable are nearly limitless. Custom shapes can be designed and contrived with relative ease. Similarly, sealing methods and kinds have evolved over the years, and as a result, today's curtain walls are high performance systems which require little maintenance.