



The lecture titled: **“Curtain walls”** presents curtain walls, their fundamental classification, and challenges and solutions associated with them.

Structural role of curtain walls and their comparison with load-bearing walls and the importance of movement and adjustment of joinery are briefly explained.

The paper presents a fundamental classification of curtain walls by function, materials, place of assembly, mullion type, glass type, attachment, access, and configuration. Primary façade design principles are classified and demonstrated on curtain wall components, with emphasis on a structural safety and a holistic approach. Both classifications were developed by the author for purposes of curtain wall specification and education of designers.

Sources of misunderstanding and confusion are explained, ranging from the uncoordinated design delegation, through a general lack of knowledge of façade functions among construction professionals, to the structural aspects unique to curtain walls. The most typical challenges are illustrated by cases of field failures from the author’s forensic practice.

Glazing types and their modes of failures are analyzed, and dangers associated with their misunderstanding on example of building code inadequacies are presented. Relevant building code requirements are listed on example of the Florida Building Code. Tests of curtain walls are visited, and main sources of water leakage are indicated.

The lecture is elementary in nature to optimally address the average professional audience. Both a curtain wall and a sloped glazing remain an exclusive domain of a high-rise, high-end construction. As a result, a limited number of construction professionals are familiar with their design, inspection, and troubleshooting. Rapid technological advancements of coating technology, architectural glass, and the structural glass engineering create a widening educational lag. Educational opportunities and literature on the subject remain scarce. The resulting confusion among some professionals is unfortunately reflected in and demonstrated by failures of existing buildings.

This paper will attempt to close the informational gap described above and demonstrate a balanced, holistic approach to the curtain wall construction.

Learning objectives:

1. Fundamental classification of curtain walls.
2. Sources of misunderstanding and confusion.
3. Glazing types and their modes of failure.
4. Relevant building code requirements.

About the author: Mr. Kazmierczak is a chairman of BEC Miami, a registered architect in New York and Florida, belongs to professional organizations: AIA, ASHRAE, and CSI, carries CDT and LEED-AP certificates, speaks publicly, and writes articles on subject of building enclosures. He is also recognized as a national authority on curtain walls.