

Overview

In recent years the design of exterior walls has incorporated more diverse materials and complex building technology than ever before. Metal and glass, stone, concrete, and masonry are being combined in ways that offer rich architectural variety in the color, texture, and overall articulation of building exteriors. The integration of such diverse materials in the building facade is challenging the abilities of architects, engineers, manufacturers, and contractors and leading them towards a greater understanding of materials and systems.

The papers included in this publication reflect these trends in the building industry and present the observations of a number of experts who have spent their lives intimately involved with the design and technology of exterior wall systems. The papers have been compiled and edited from two separate symposia held in New York in 1988 and Chicago in 1989. The first of these focused on metal and glass curtainwall systems and the second dealt with concrete and masonry systems. Each of the presentations deals with specific building projects and examples of exterior wall systems to illustrate solutions based on actual experience. The use of case studies is important because they go beyond a theoretical understanding to the experience of successes and failures on real buildings. The work of architects, engineers, manufacturers, and fabricators is all included to bring a breadth of experience and a variety of viewpoints. The first section describes design concerns of exterior wall systems by architects who are familiar with the entire process of making buildings from initial design through final construction. The second section deals with testing and analysis, focusing on structural performance, thermal performance, and weather integrity. The remaining sections focus on specific materials and systems, ranging from glass and glazing technology to stone, precast concrete, and composite concrete wall systems. Many of the presentations on masonry and stucco that were intended to be printed in this book were never transcribed by the authors into papers. Therefore, these have not been included.

In an industry that brings together an enormous variety of expertise and experience from many individuals and companies, it is my hope that this document will further a more integrated approach towards buildings in general. It is essential that architects and engineers and manufacturers and contractors begin to speak a common language with a common purpose of bringing this age old process into the 21st century.

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