Sustainable Facades: Design Methods for High-Performance Building Envelopes
Ajla Aksamija

DESCRIPTION

Practical information on designing sustainable, energy-efficient building facades

As energy and other natural resources are being depleted, it has become clear that technologies and strategies that allow us to maintain our satisfaction with interior environments while consuming less of these resources are major objectives of contemporary facade design. Sustainable Facades focuses on the strategies and approaches for designing sustainable, high-performance building facades, and provides technical guidance for architects and designers.

This timely and useful guide presents strategies and technical guidelines for designing environmentally sensitive, energy-efficient facades based on scientific principles. It provides climate-specific approaches for minimizing energy consumption, analyzes the thermal behavior of different facade systems and materials, and illustrates with case studies how these approaches have been implemented on architectural projects. It also discusses emerging facade technologies, materials, and systems.

Topics covered in this unique and indispensable guide include:

• Climate-based design approaches for high-performance facades
• Characteristics of sustainable facades: energy efficiency, thermal behavior, and moisture resistance
• Designing for thermal comfort, lighting and glare control, and acoustic quality
• Emerging technologies in facade design, including smart materials, double-skin facades, and facades as energy generators
• Case studies on building orientation and facade design, tectonic sun exposure control, external shading elements, and more

ABOUT THE AUTHOR

Ajla Aksamija, PhD, leads Perkins+Will Tech Lab, a center for research of building technologies. Dr. Aksamija's research expertise includes building science and sustainability, emerging building technologies, digital design and information modeling. She has contributed to several books and has published numerous research articles.

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