# Article information:

Sustainability | Free Full-Text | A Review of Advanced Fa&ccedil;ade System Technologies to Support Net-Zero Carbon High-Rise Building Design in Subtropical China  
<https://www.mdpi.com/2071-1050/15/4/2913>

# Article summary:

1. The building industry accounts for a significant portion of global greenhouse gas emissions, with the building sector in China alone accounting for 21% of total primary energy consumption in 2020.

2. Façade systems play a major role in determining carbon emissions of high-rise buildings, and innovative façade systems can help lower carbon emissions while improving energy performance and indoor comfort.

3. Existing strategies and technologies for lowering CO2 emissions through high-rise building facades need to be revised and adapted to remain effective in subtropical climates like those found in South China, where much of the current urban growth and high-rise construction is taking place.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article provides a comprehensive review of advanced façade system technologies to support net-zero carbon high-rise building design in subtropical China. The authors highlight the urgent need to address façade design strategies and technologies in this specific climatic context, given the rapid rise in CO2 emissions due to high-speed construction and fast urban densification. The article also discusses the role of green building assessment tools and protocols in reducing energy consumption and negative environmental impacts for both the construction and management phases.

However, there are some potential biases and missing points of consideration in the article. Firstly, while the authors acknowledge that most net-zero or near-zero energy buildings are located in Europe and North America, they do not explore why this is the case or whether there are any barriers to implementing similar strategies in subtropical regions. Secondly, while the authors discuss the importance of embodied environmental impacts (EEIs) and operational environmental impacts (OEIs) in achieving zero carbon emissions, they do not provide any evidence or examples of how these impacts can be minimized through façade design strategies.

Additionally, the article does not present both sides equally when discussing green building assessment tools and protocols. While it acknowledges their benefits in reducing energy consumption and negative environmental impacts, it does not explore any potential drawbacks or limitations of these tools. For example, some critics argue that these tools may prioritize certain sustainability criteria over others or may not account for cultural or social factors that influence sustainable development.

Overall, while the article provides a useful overview of advanced façade system technologies to support net-zero carbon high-rise building design in subtropical China, it could benefit from exploring potential biases and missing points of consideration more thoroughly. Additionally, presenting both sides equally when discussing green building assessment tools and protocols would provide a more balanced perspective on their benefits and limitations.

# Topics for further research:

* Barriers to implementing net-zero energy building strategies in subtropical regions
* Minimizing embodied environmental impacts in façade design
* Minimizing operational environmental impacts in façade design
* Criticisms of green building assessment tools and protocols
* Limitations of green building assessment tools and protocols
* Cultural and social factors in sustainable development

# Report location:

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