# Article information:

Global technological advancement and challenges of glazed window, facade system and vertical greenery-based energy savings in buildings: A comprehensive review - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S2666123321000635>

# Article summary:

1. The building sector consumes a major part of overall energy consumption and causes notable greenhouse gas emissions, making research related to energy savings in buildings crucial for mitigating negative environmental impacts.

2. Passive energy-saving technologies such as double-glazed windows, vertical greenery systems, and heat-reflecting coatings can significantly reduce building energy consumption and improve temperature and acoustic comfort.

3. Among these techniques, vertical greenery systems are found to be the most reliable, efficient, and sustainable solution for reducing cooling loads and improving the urban environment while also providing economic benefits through energy savings and decreased surface temperatures.

# 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 various energy-saving techniques for buildings, including double glazed windows, vertical greenery systems (VGS), semi-transparent photovoltaic devices, heat reflecting coatings, passive climate control methods, and building optimization techniques. The authors highlight the importance of reducing energy consumption in the building sector due to its significant contribution to greenhouse gas emissions and global warming.

One potential bias in the article is that it focuses primarily on technological solutions for energy savings rather than behavioral changes or policy interventions. While technological advancements are undoubtedly important, they may not be sufficient to achieve significant reductions in energy consumption without complementary efforts to change human behavior and implement supportive policies.

The article also presents some unsupported claims, such as the assertion that VGS is the most reliable and efficient solution for energy savings. While VGS can certainly provide benefits such as shading and evaporative cooling, their effectiveness may depend on factors such as climate, building design, and maintenance practices. Additionally, the authors do not explore potential drawbacks or limitations of VGS, such as increased maintenance costs or reduced access to natural light.

Another missing point of consideration is the potential trade-offs between different energy-saving strategies. For example, while double glazed windows can reduce heat loss through windows, they may also reduce access to natural light and ventilation. Similarly, while VGS can provide shading and cooling benefits, they may also require additional water usage and maintenance resources.

Overall, while the article provides a useful overview of various energy-saving techniques for buildings, it could benefit from a more balanced discussion of potential trade-offs and limitations of these strategies. Additionally, it would be helpful to include more information on behavioral changes and policy interventions that could complement technological solutions for reducing energy consumption in buildings.

# Topics for further research:

* Behavioral changes for energy conservation in buildings
* Policy interventions for reducing energy consumption in buildings
* Trade-offs between different energy-saving strategies for buildings
* Limitations of vertical greenery systems for energy savings
* Maintenance costs of energy-saving technologies for buildings
* Access to natural light and ventilation in energy-efficient buildings

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