# Article information:

Experiments on the cooling effect of modular vertical greening on double-glazed façade in summer - ScienceDirect  
<https://www.sciencedirect.com/science/article/abs/pii/S0360132322010010>

# Article summary:

1. Double-glazed green facades (DGGFs) have a better cooling effect than double-glazed facades (DGFs) with or without built-in louvers, reducing indoor and cavity temperatures by up to 4.9°C and 19.3°C, respectively.

2. Ventilation inside the double glazing enhances the cooling effect of DGGFs, reducing indoor temperatures by an additional 2.3°C compared to DGGFs with no ventilation.

3. Plant activities play an important role in maintaining the thermal microclimate inside DGGFs, absorbing solar radiation through photosynthesis and transferring sensible heat to latent heat through evapotranspiration.

# 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 titled "Experiments on the cooling effect of modular vertical greening on double-glazed façade in summer" presents a study that investigates the thermal performance of a double-glazed green façade (DGGF) with modular vertical greening. The study concludes that DGGFs have a better insulation effect than double-glazed façades (DGFs) with or without louvers, reducing indoor temperature and energy consumption by up to 4.9°C and 12%, respectively.

Overall, the article provides a detailed analysis of the experimental results and offers insights into the cooling mechanism of DGGFs. However, there are some potential biases and missing points of consideration that need to be addressed.

One-sided reporting is evident in the article as it only focuses on the benefits of DGGFs without discussing any potential risks or limitations. For instance, while the study shows that ventilation inside the double glazing enhances the cooling effect of DGGFs, it does not mention any potential drawbacks such as increased humidity levels or air pollution from plant activities.

Additionally, there is no discussion about the cost-effectiveness of implementing DGGFs compared to other cooling strategies. The article mentions that DGGFs can save up to 12% of cooling energy consumption but does not provide any information on how much it would cost to install and maintain such systems.

Another limitation is that the study only considers one type of modular vertical greening system, which may not be representative of all available options. Therefore, further research is needed to explore different types of vertical greening systems and their impact on thermal performance.

Furthermore, while the article claims that plant activities play an important role in maintaining the thermal microclimate inside DGGFs, there is no evidence provided to support this claim. More research is needed to understand how plant activities affect thermal performance and whether they can cause any negative effects.

Finally, there is some promotional content in the article as it suggests that applying modular vertical greening in DGFs is feasible without considering any potential challenges or limitations. This could lead readers to believe that implementing such systems is straightforward when, in reality, it may require significant investment and expertise.

In conclusion, while the article provides valuable insights into the thermal performance of DGGFs with modular vertical greening systems, there are some potential biases and missing points of consideration that need to be addressed. Further research is needed to explore different types of vertical greening systems' impact on thermal performance and their cost-effectiveness compared to other cooling strategies.

# Topics for further research:

* Potential drawbacks of implementing modular vertical greening systems in double-glazed façades
* Cost-effectiveness of installing and maintaining double-glazed green façades with modular vertical greening
* Different types of modular vertical greening systems and their impact on thermal performance
* The role of plant activities in maintaining the thermal microclimate inside double-glazed green façades
* Challenges and limitations of applying modular vertical greening in double-glazed façades
* Comparison of the thermal performance of double-glazed green façades with other cooling strategies.

# Report location:

<https://www.fullpicture.app/item/1d7e946171258fbe2480ce6e2cb134b4>