

Numerical evaluation of a dynamic moving PCM wall for cooling

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Energy in Buildings



The building sector represents almost **30%** of global final energy consumption and **27%** of total CO2 emissions.

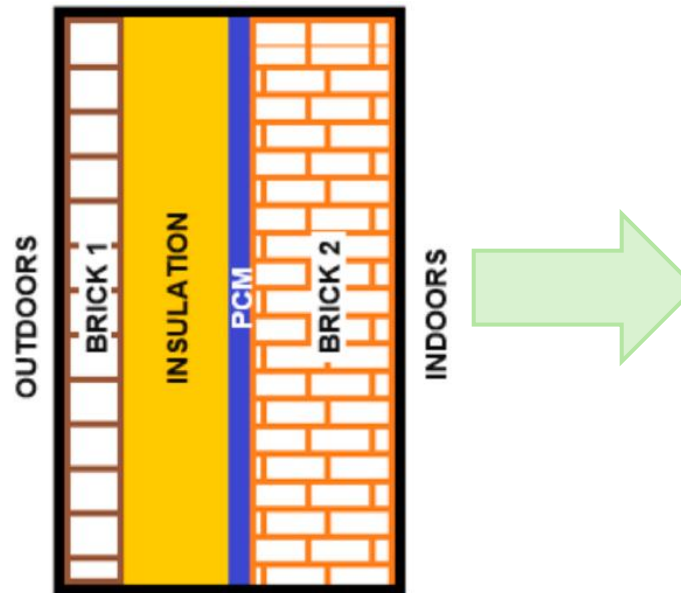
What are the solutions for solving energy consumption in buildings?

Improve building design

Use of innovative materials

Implementation of RE

Change the building concept

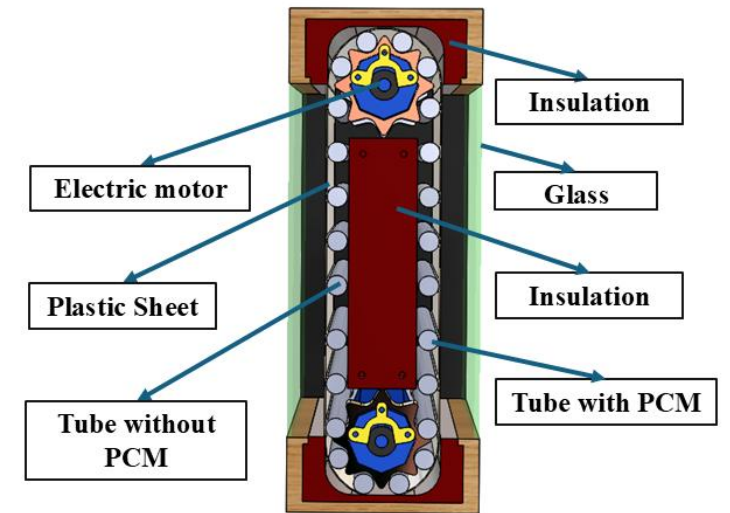
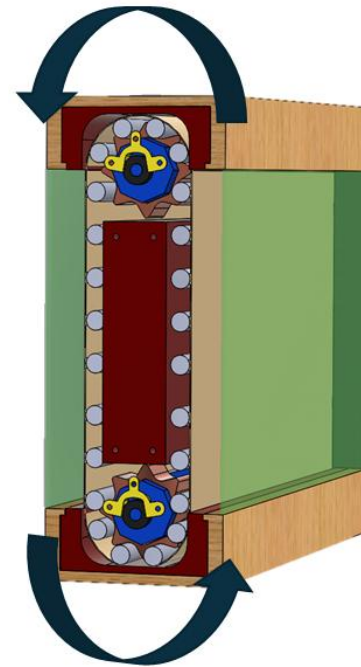
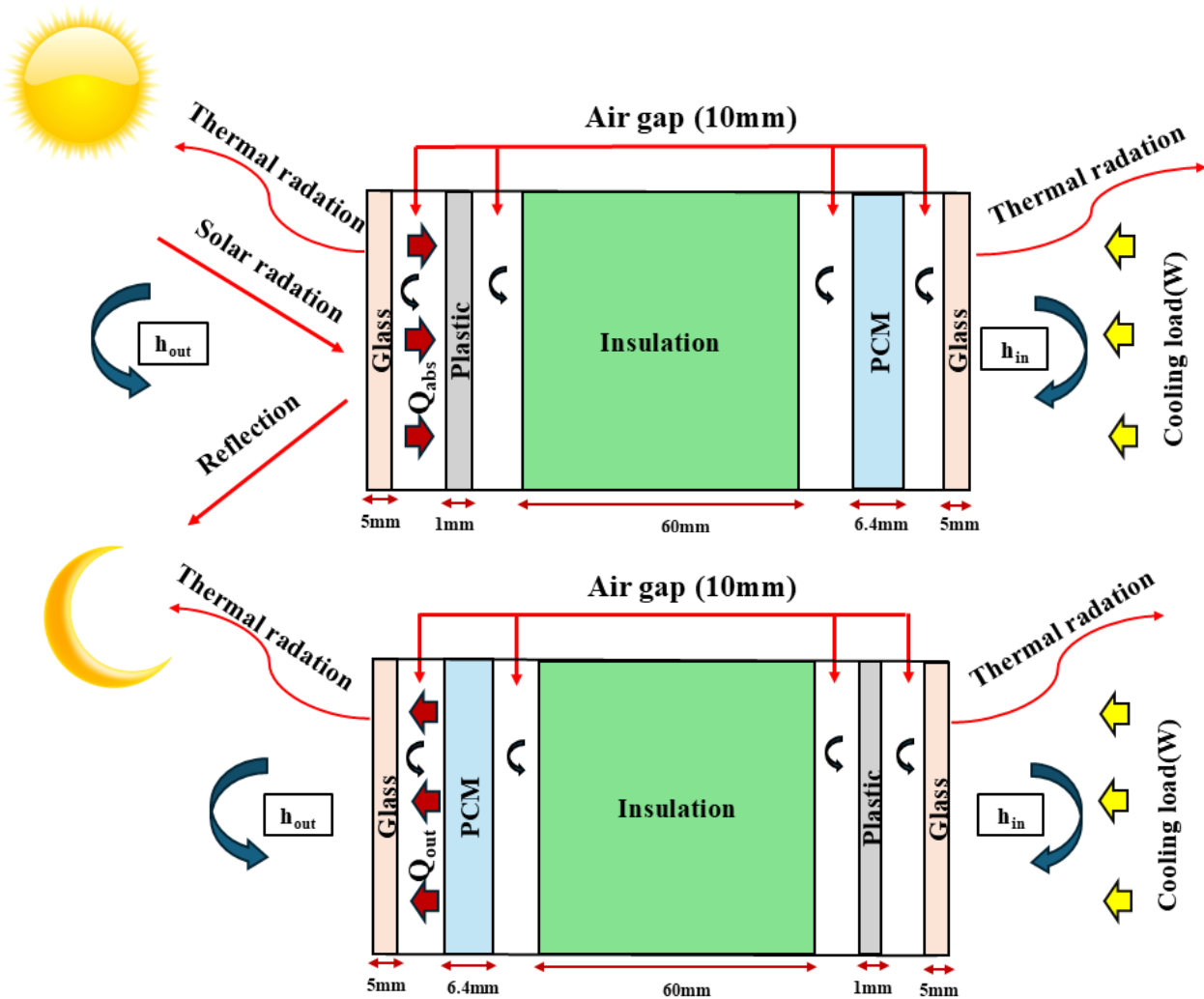


(De Gracia, 2019)

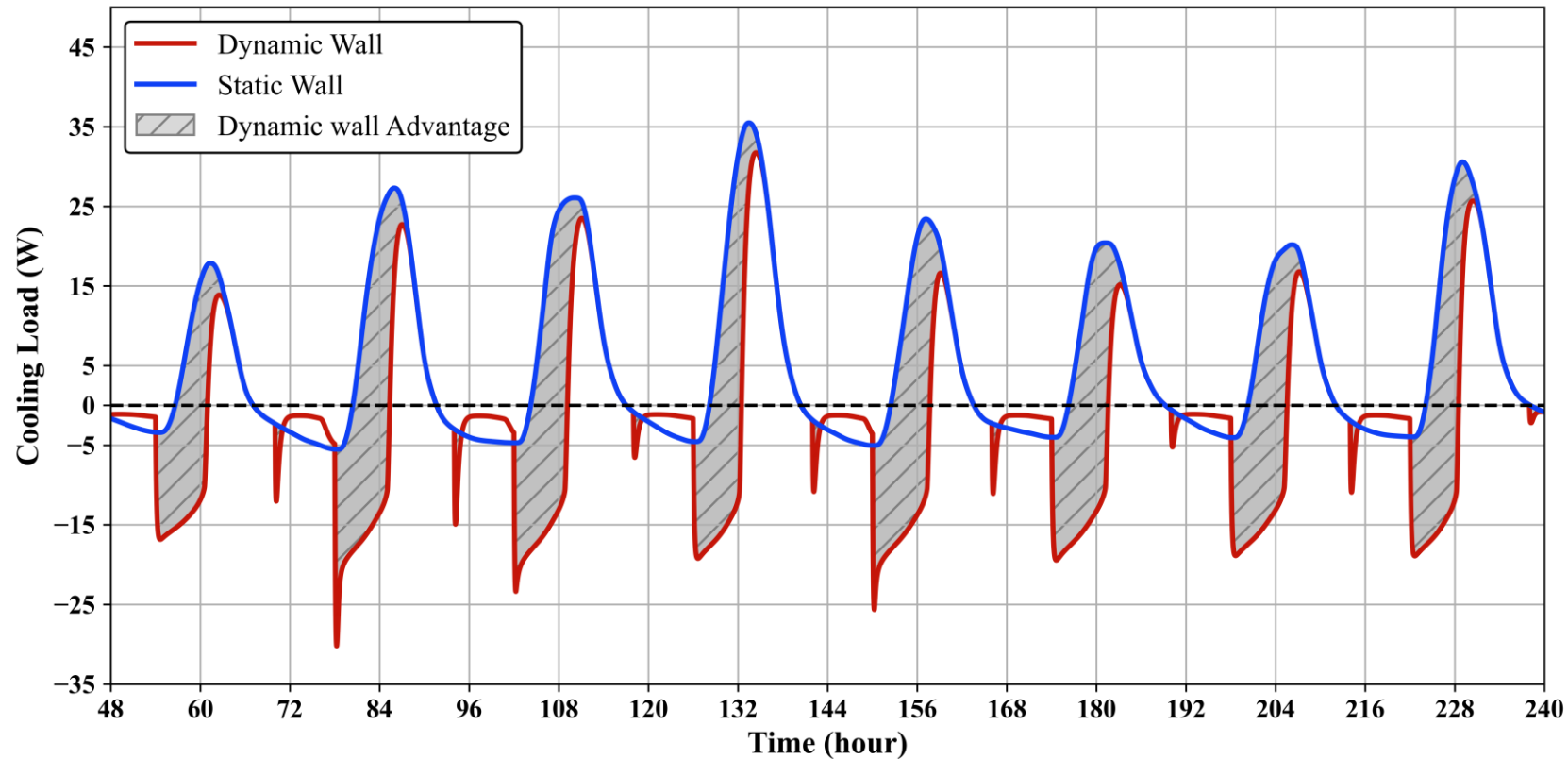
Summer

The solidification process of PCM is limited because PCM layer is not directly exposed to outdoor temperatures at night

Methodology



Result



The dynamic solar wall could reduce the cooling load by **138%** compared with the static wall, corresponding to **0.182 kWh** per square meter of wall under Madrid(Spain) weather conditions.

Acknowledgments

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THANK YOU



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