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EXPERIMENTAL STUDY OF GREEN WALLS IMPACTS ON BUILDINGS IN SUMMER AND WINTER UNDER AN OCEANIC CLIMATE

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Highlights:

- Experimental campaign regarding green walls impacts on buildings are presented
- The results shows how green walls enhance building energy performance
- *Experimental database will be provided on written request addressed to authors*

ABSTRACT

This article present the results obtained an experiment carried out to measure the thermal impacts of green walls on buildings. The experiment deals with full monitoring of a green wall set up on a scaled-down experimental mockup of buildings located in La Rochelle city. Results underline the positive effect of green walls in summer and shows moderate reduction of heat losses in winter. The distinction made between measured heat gains and heat losses through the compared façades helps to apprehend the energy impact of the envelopes greening. Besides, we analyzed through experimental observations the dynamic behavior of the green wall system, and we highlighted the importance of such an experimental model to take into account the vertical hygrothermal effects. The primary objective is better understanding of the thermohydric behavior and the energy impact of green walls by direct comparison between data recorded simultaneously on different configurations of buildings and streets with and without use green walls. Measurements of temperature, humidity and heat fluxes through façades with and

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