



Addition of a new window layer (on the outside)

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Windows

What is the solution?

This solution consists in adding a new window layer on the outside of an existing single window. It is a middle impact for heritage as the existing single window stay intact and that the new one is removable but can affect the general perception of the building. It is a high impact for energy, especially if the existing single window was repaired before the adding and if the new one is a double-glazed one.

Why does the solution work?

When the heritage issue arises on the inside, the new window can be installed on the outside of the existing one. Besides, it does not imply to remove the existing window, only adding one, what increases energy efficiency of the entire installation but also the risk of condensation if best practices were not followed. The new window's material can be of any type, but for heritage buildings, wood is preferred. The glass can also be of any type and the glazing bars are not always necessary, since this solution preserves the existing window that has a heritage significance.

Pros and cons of the solution:

The benefits of this solution are a high impact on energy. It also improves thermal and acoustic comfort and has a middle impact on heritage depending on which side the heritage issue arises. It is finally equivalent to installing a new window. The drawbacks are the risk of condensation that is high when best practices were not followed. The wall must also be thick enough to install a

second window. And resulting box-type window are not easy to manipulate if best practices were not followed.

Type of data available:

Two handbooks are available in France concerning the addition of a new window layer on the outside (or on the inside).

Available pictures or publications of the solution:



"Doublés fenêtres en rénovation de logements", programme RAGE

Thermal properties	Existing window	Refurbished window
Window type	Single window	Box-type window
Glazing	Single	Single on the inside and single, double or triple on the outside
Shading	/	/
Uw	/	/
Ug	5.0	1.2
Uf	2.3	2.3
g-value glass	0.9	0.6
Air tightness	No sealing	Repaired sealing for the inside window, new sealing for the outside window
Approximate installation year	/	/

https://www.hiberatlas.com/smartedit/projects/151/064_Double_fenêtres_RAGE.pdf

"Doublés fenêtres : prescription et mise en oeuvre en rénovation des logements", programme RAGE

<https://www.hiberatlas.com/smartedit/projects>

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"Doubles fenêtres en rénovation de logements", programme RAGE