



Replacing the window sash or window layer (on the outside)

Author: Élodie Héberlé (Cerema)

Windows

What is the solution?

This solution consists in replacing the sash of an existing single window, while the existing frame is not affected. It is a middle impact for both heritage and energy, especially if the existing single window was repaired before the replacing of the sash. In the case of box-type or coupled windows, another solution is to replace the outside window layer.

Why does the solution work?

Every type of sash and glass is possible. Single-glazed glass suits to heritage windows that need to be repaired. This glass, even if single-glazed, could also be a more technical glass than the original: protective glass or insulating simple-glazing (see www.van-ruysdael.com/). Double or triple-glazed glass is possible when the new sash and the existing frame can support the additional weight of the glass. Any type of filling or coating is possible between the glass layers.

Pros and cons of the solution:

The benefits of this solution are a middle impact on energy. It also improves thermal comfort, and the risk of condensation is low. The drawbacks are a middle impact on heritage: the proportions, the materials, the presence of glazing bars must be well considered. Joiners are sometimes not trained anymore to apply these techniques, or they do not want to apply them. This solution is also quite ineffective if the existing window was not repaired before the replacing of the sash. Finally, the new sash and the existing frame must be able to support the additional weight of the glass.

Available pictures or publications of the solution:

Thermal properties	Existing window	Refurbished window
Window type	Single window Or box-type or coupled window	Single window Or box-type or coupled window
Glazing	Single Or single on the inside and single on the outside	Double or triple Or single on the inside and double or triple on the outside
Shading	/	/
U_w	/	/
U_g	5.0	1.2
U_f	2.3	2.3
g-value glass	0.9	0.6
Air tightness	No sealing	Repaired sealing Or new sealing for the outside window layer
Approximate installation year	/	/