



Replacing the window sash or window layer

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Windows

What is the solution?

The 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 window was repaired before the replacing of the sash. In the case of box-type or coupled windows, another solution is to replace the inside window layer on the inside.

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.

Description of the context:

In Klostergebäude Kaiserstrasse, the outer wings of the box windows in listed facades were renovated and on the inside a new wooden window with special interior insulation was added. The solution sets the new inner wing completely flush with the inner wall and improves the thermal situation through internal insulation and reveal insulation. The sunshades are positioned between the wings in the lintel in existing roller blind niches. This layout represents a novel solution for old buildings.

Pros and cons of the solution:

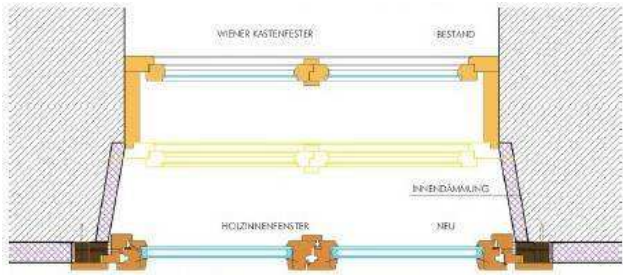
The benefits of this solution are a middle impact on energy. It also improves

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:



Klostergebäude Kaiserstrasse (box-type window) after renovation, © Courtesy of Trimmel Wall Architekten ZT GmbH







Thermal properties	Existing window	Refurbished window
Window type	Box-type window	Box-type window
Glazing	Single on the outside and single on the inside	Single on the outside and double on the inside
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	No sealing
Approximate installation year	/	/

Link to best practice example (Hiberatlas):

<https://www.hiberatlas.com/de/klostergebaeude-kaiserstrasse--2-35.html>