



Only repairing window

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Windows

What is the solution?

This solution consists in simply repairing the window. It is a low impact solution for both energy and heritage. The final objective is to improve its airtightness (and thus, thermal comfort of the users) and its durability. It has no impact on its U-value. The final objective is to improve its airtightness (and thus, thermal comfort of the users) and its durability. It has no impact on its U-value.

Why does the solution work?

Repairing a window covers in fact several techniques: replacing a missing or a broken part of the window, adjusting the sash to the frame, removing multiple coats of paint, replacing or adding seals between the frame and the sash, filling cracks between the frame and the wall, replacing old glazing putty between the sash and the glass. This solution suits to heritage windows that cannot be replaced or for which identical replacement is too expensive. It also suits to buildings where it is possible to improve the energy consumption by other ways, with lower heritage impact than replacing windows. It suits finally to buildings located in places where winters are not harsh and where single glazing can be tolerated.

Description of the context:

In Downie's Cottage, the windows were removed and cleaned and carefully renovated down back in the workshop. Due to their small size, thermal improvements were not deemed to have been effective.

Pros and cons of the solution:

The benefits are a very low impact on heritage. It consists in easy and unexpensive techniques that could be applied by a homeowner. It also improves

thermal comfort and make the window last even longer. The drawbacks are a very low energy impact. Joiners are sometimes not trained anymore to apply these techniques, or they do not want to apply them. And unfortunately, windows remain the coldest part of the façade (even more if the walls are insulated) and condensation could occur on the glass.

Type of data available:

Repairing windows is recommended by several cities or institutions, for example the city of Toulouse (France) and Historic England.

Available pictures or publications of the solution:



Single window after repairing, © HES



Single window before repairing, © HES



Single window before repairing, © HES

Thermal properties	Existing window	Refurbished window
Window type	Single window	Single window
Glazing	Single	Single
Shading	/	/
U _w	/	/
U _g	5,0	5,0
U _f	1,4	1,4
g-value glass	0,6	0,6
Air tightness	No sealing	No sealing
Approximate installation year	1910	2015

<https://www.hiberatlas.com/smartedit/projects/84/short-guide-1-fabric-improvements.pdf>

"Traditional Windows: their care, repair and upgrading", Historic England

<https://www.hiberatlas.com/smartedit/projects/84/menuiserie.pdf>

"Guide de la menuiserie toulousaine", ville de Toulouse

Link to best practice example (Hiberatlas):

<https://www.hiberatlas.com/en/downies-cottage--2-32.html>