

Retrofitting double glazing – Lois' sash windows

Here at Beacon we try to practise what we preach! As several of us live in older homes, the issue of whether or not to retrofit double glazing has been extensively discussed. I have tried different options with varying success and it's worth talking about what we've found good or not, and why we made the decisions we did.

Factors to consider

- **What are you trying to achieve?** (warmth, sound, saving furniture from sun, overall maintenance upgrade) This impacts on your glass and frame choices.
- **What is your wider upgrade plan?** Have you already done your ceiling and underfloor insulation? If not, that's your priority! Are you considering wall insulation too? (YES do it for warmth and energy savings!)
- **Current and ongoing window maintenance** – this impacts on your frame choices
- **Is aesthetics important?** You might be prepared to spend more on a front of house picture window than on a toilet window facing your back yard.
- **Your total budget envelope** - remember you don't need to do all your windows at once.

Once you have thought about these issues, they will help you to make technical choices about whether you should choose secondary vs retrofit double glazing, type of frame, and glass choice

My double sash windows

I have an old wooden bungalow which I am gradually renovating. I chose to retrofit two double hung sash windows with double glazing using low emissivity glass and argon filled panes for better thermal performance. I also fitted fly screens to the outside at the same time as Gisborne's hot summer climate means flies are a really major problem.

The installer removed the windows and took them away overnight, inserted the new glass and then reinstalled the windows. Because of the weight of the glass the upper sash is now fixed (ie it can't open from the top any more) but I think that's a small price to pay for what is a very good outcome. The double glazing has eliminated the draughts from the windows and I highly recommend the results – I have a couple more double hung sash windows to have retrofitted as I can afford it.

My choices would look like this:

Location	Double hung sash windows in dining room
Goals	<ul style="list-style-type: none"> ▪ Warmth in winter ▪ Aesthetics – keeping the old character windows ▪ Good summer ventilation
Wider upgrade	<ul style="list-style-type: none"> ▪ Ceiling and under floor insulation ▪ Vapour barrier ▪ New wood burner ▪ Thermostat controlled heat transfer system to bedrooms
Maintenance	<ul style="list-style-type: none"> ▪ Aesthetics outweigh future maintenance cost hence choice to retain existing frames. ▪ One of the windows didn't open before, so repair of the weights in the sash was part of the job. ▪ Dry rot in one of the window frames was also replaced at the same time.
Aesthetics	<ul style="list-style-type: none"> ▪ Important – kept existing frame
Budget	<ul style="list-style-type: none"> ▪ \$2740 (for 2 windows)
Choices	<ul style="list-style-type: none"> ▪ Frame: retrofitted into existing wooden frames ▪ Glass: low e (improves performance by R0.05), argon filled ▪ Fly screens
Outcomes	<ul style="list-style-type: none"> ▪ Improved warmth R.0.53 ▪ No draughts ▪ Able to keep windows open in summer (screens keep flies out) ▪ Some loss of air circulation from fixing of bottom sash – but the windows are opened more now due to the fly screens and contribute a lot to cross-ventilation in the house ▪ Aesthetically, black beading between glass panes stands out (next time I will specify white beading!)

For more information:

- See Fact sheets on
 - Keeping heat in: Windows
- For a discussion of double and secondary glazing, visit www.smarterhomes.org.nz/design/glazing/double-glazing-glass-options/#toc_3.