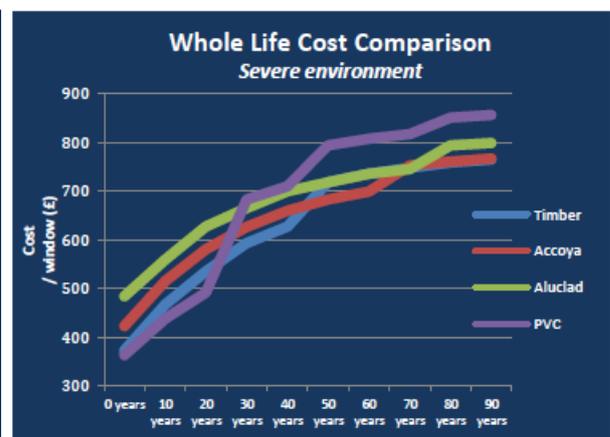
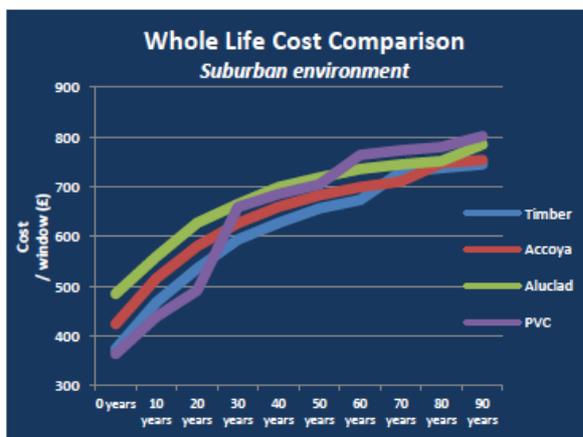




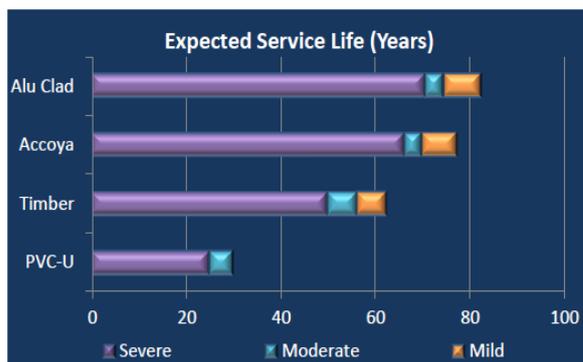
New research shows cost-effectiveness of wood and wood composite windows.

Highlights of new research undertaken by Heriot Watt University show that wood, modified wood (Accoya™) and aluminium-clad wood windows, designed and manufactured to Wood Window Alliance standards, have a lower Whole Life Cost than equivalent PVC-U windows over the 60-90 year design life of a building.



Graphs show NPV costs over a range of timescales based on an average 3% annual inflation and a discount rate of 3.5%.

The research demonstrates how important the longer service life of this quality of wood windows is. Estimated at a minimum 60 years in typical suburban conditions, the durability of the windows easily outweighs their marginally higher installed and maintenance costs on a 7-year maintenance cycle.



Graph shows expected life based on manufacturer-controlled parameters under a range of exposures where "mild" equates to typical UK suburban conditions. Building design factors to extend service life have been excluded from this example.

The research, commissioned by the Wood Window Alliance, builds on a study published by Imperial College in 2010, verifying the earlier findings and extending the research to cover modified wood and aluminium-clad wood windows. It demonstrates how their increased service life, especially in severe exposure (such as those experienced in high rise buildings), and extended maintenance intervals outweigh their higher installed cost.

The research also looked at the whole life embodied carbon of WWA wood, modified wood and aluminium-clad wood windows against equivalent PVC-U windows, using research methodology developed by Davis Langdon. Heriot Watt found that the net embodied carbon for wood-based windows is significantly lower than PVC-U due to the carbon sequestered by growing wood, and the impact of fossil fuel based plastics, with wood window frames having a negative carbon figure of -13.7kg. This compares with +14.89kg for aluminium-clad, +15.94 for modified wood and +76.64kg for PVC-U.

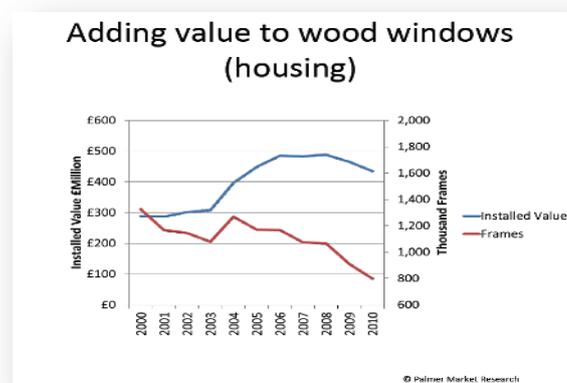


Embodied carbon was examined using methodology developed by Davis Langdon. The timber, Accoya® and Aluminium-clad timber results are all based on the same basic inventory data for timber felling, forestry processes and manufacture profiling. The differences are largely attributable to either the acetylation process for Accoya® wood, or the bauxite smelting/ secondary recycling of aluminium for cladding.

Wood can provide a range of solutions for high performance windows, all of which offer better cost-effectiveness, durability and carbon impact than PVC-U windows across. The choice between wood, modified wood or aluminium-clad wood will depend on the degree of exposure to which the window is subject and the importance of longer service intervals.

The changing face of the UK wood window market and how manufacturers are embracing high quality, high performance and testing.

During the first decade of the 21st century, sales of timber windows dropped (latterly as a result of the severe recession from 2008/9), while at the same time the installed value of timber windows increased dramatically.

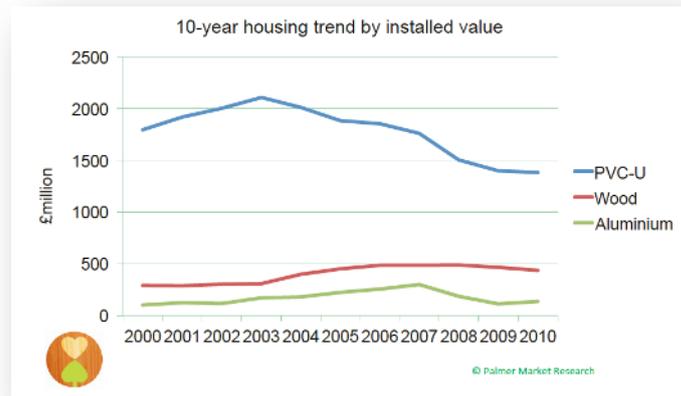


This is evidence of a major structural change in the timber window sector. There has been a rapid decline in sales of low cost primed or unfinished, unglazed product, as major house builders dropped timber in favour of PVC-U for lower range houses, and

a corresponding increase in sales of high value, high performance, fully finished windows, in line with the Wood Window Alliance's aim of driving up standards.

This move from trying to compete in the volume sector, to establishing a successful presence in the quality sector, is shown in timber's growing share of the housing sector by value. Since 2004, PVC-U's share of the housing window market dropped from 78% to 70%, while timber's rose from 15% to 22%.

Over the same period, PVC-U lost 3.2million frames a year across the whole market (to 5.7m from 8.9m) while timber lost just 400,000 (to 1 million).



Initiatives to improve UK manufacturers' access to higher quality engineered timber substrates

The UK timber window industry has been slower to make the change to engineered wood substrates than some other European countries, and it has been difficult for smaller manufacturers to be able to buy engineered wood economically because of a proliferation of sizes (over 100). As part of the Wood Window Alliance's mandate to improve quality, a committee of suppliers, merchants and manufacturers was formed with the aim of reducing the number of sizes and establishing a UK-specific set of quality standards. Within 18 months both aims had been achieved. There is now an agreed stocking list of just 20 standard sizes, as well as an agreed set of UK standards. Now, for the first time, smaller manufacturers can afford to use premium quality substrates with minimum waste and improved performance.

The importance of specifying the right timber windows

One of the frustrations felt by members of the Wood Window Alliance was a lack of understanding among specifiers of how they should be specifying wood windows. This has led us to draw up a simple one-page guide to specifying wood windows, which can be found on the website (www.woodwindowalliance.com). This guide is complemented by a Fast Track CPD video module (www.wwa-infocentre.com). The three most important rules for specifying wood windows are:

1. Specify fully factory-finished windows
2. Specify windows with third party accreditation that they have been tested and met BS 6275 I & II
3. Specify windows with Chain of Custody certification.

Consumer demand for wood windows

The poor quality of many of the wood windows installed in houses in the latter half of the 20th century taught a generation of homeowners that wood windows rot and need constant maintenance. Since then another generation of homeowners has learned the hard way that PVC-U windows discolour, become brittle with age, break – and, more importantly, that they just don't look or feel as good as wood windows. There is also evidence from research carried out by English Heritage that fitting inappropriate PVC-U replacement windows can reduce the value of a period house.

Wood windows have now become something of a status symbol; a sign that people care not just about the environment, but about their own environment too. So it is that housebuilders install wood windows in prestige developments and PVC-U elsewhere.

Up until recently the industry has made it more difficult for homeowners to buy and fit wood windows than plastic. Now members of the Wood Window Alliance have set up distribution networks to provide local installation services to homeowners so that they are able to benefit from the response to their advertising campaign, featuring Naomi Cleaver, that started in the winter of 2011 and will run until the end of 2013.

Wood windows and timber frame

Members of the Wood Window Alliance are working with timber frame companies to supply wood windows for their developments. Timber frame is an increasingly effective way of meeting the more demanding levels of the Code for Sustainable Homes. When selling the environmental benefits of timber frame, it makes sense to use the most environmentally-friendly windows. Wood window manufacturers have proved they can meet the strict delivery schedules of the timber frame manufacturers, while offering a greener, longer lasting, more attractive product that's still keenly priced.

What is the Wood Window Alliance?

The Wood Window Alliance is a group of 17 manufacturers of high performance, factory-finished windows. All members have to meet strict quality, performance and sustainability criteria, with Chain of Custody and third-party certification.