

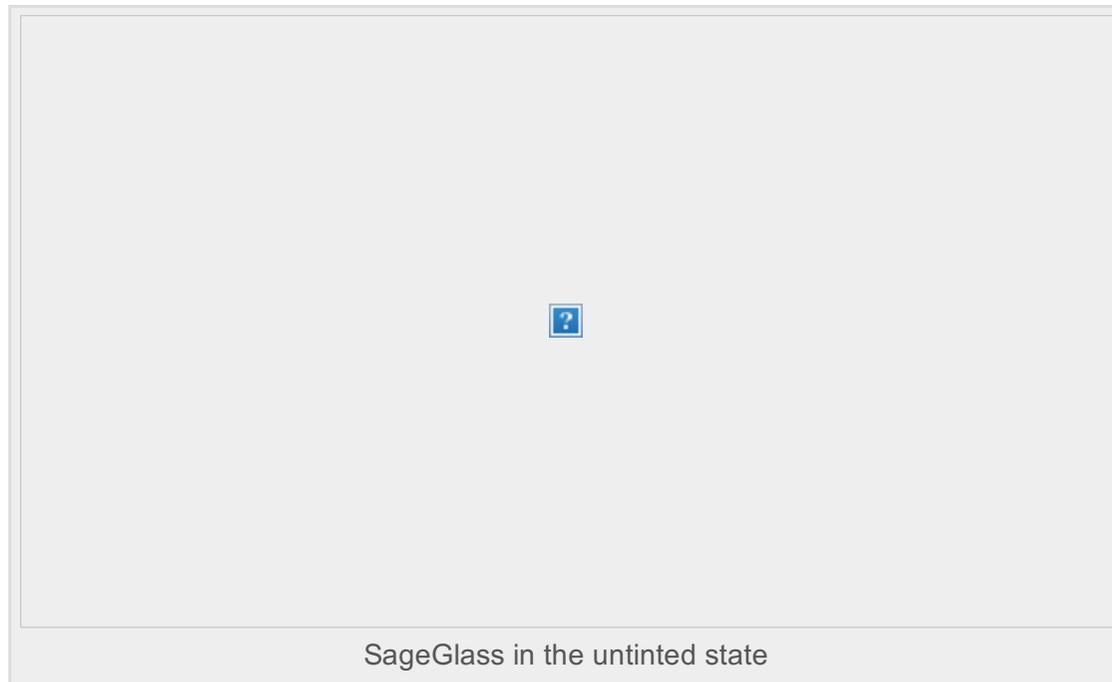


# The Blog



## Tintable Dynamic Glass Reduces Heating and Cooling Costs Beautifully

Posted on 30. Apr, 2012 by [Maryruth Belsey Priebe](#) in [Articles](#)



SageGlass in the untinted state

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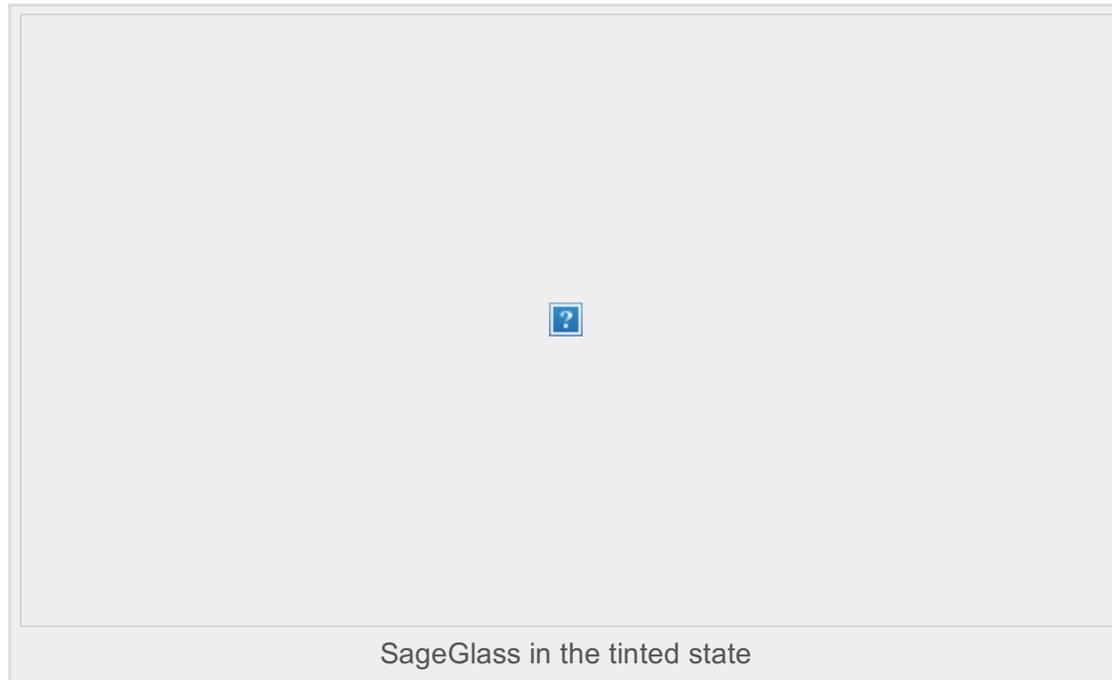
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10% to 25%. That's how much your windows may contribute to your annual heating bill according to the [US Department of Energy](#). It's no wonder then that window innovations have been the subject of a lot of green building research in recent years, with some amazing products now on the market.

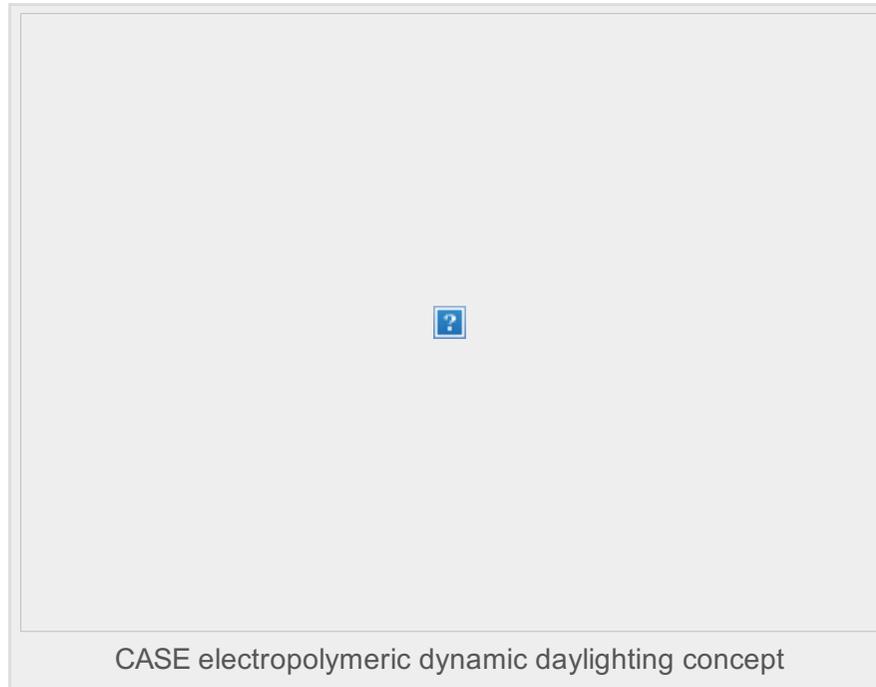
Take, for instance, dynamic glazing, which is a type of glass that contains a tint that can be switched on or off or adjusted to allow more or less solar heat and visible light into a building. In climates with colder winters and warmer summers, dynamic glazing helps to control solar heat gain depending on the season. During colder months, the tinting of dynamic glass would be minimal in order to allow as much daylighting and solar heat as possible. Then in the warmer months, dynamic glass would more often be in the tinted state to help block solar heat gain while still allowing some light to be transmitted into the building.

Dynamic glazing can either be passively controlled by the temperature of the light hitting it (thermochromic) or by the quantity of light (photochromic). Alternatively, dynamic glazing can be controlled electronically (electrochromic) either manually or automatically managed.



Sage Electrochromics is one of the leading companies in this space, and they've

been marketing their SageGlass concept for a variety of applications, with some pretty beautiful results. SageGlass technology starts with five extremely thin coatings of specialized ceramic applied to the inner glass layer of a window. By applying a voltage to the coatings, they trigger a reversible solid-state change which allows the coating to tint and absorb light. When the voltage is reversed, the glass is returned to its clear state. Their latest innovation is the ability to set intermediate levels of tinting, which up until recently was not possible.



More innovations in dynamic glazing are on the horizon. The [Center for Architecture, Science, and Ecology](#) (CASE) is currently developing

electropolymeric dynamic daylighting glazing that can be customized to include advertisements, artwork, and other images to add interest to the building design.

According to Sage, electronically tintable windows can reduce operating costs by 20%, reduce peak demand for energy by 24%, and decrease heating and cooling system costs by 25%. Though most of their projects to date have been commercial, the glass is also available for sustainable residential applications, and can assist any project with the achieving [LEED goals](#).



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